Contents

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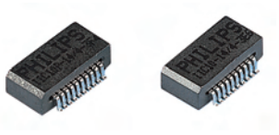
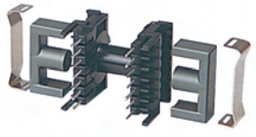
Transformers

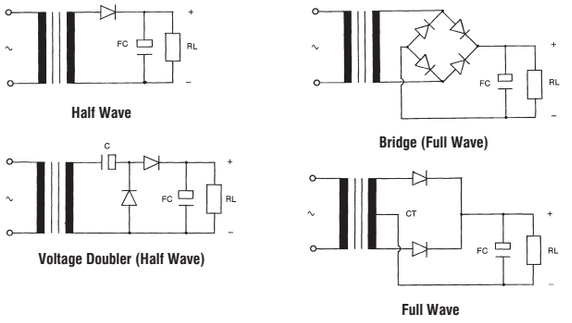
Selection Chart

272231

Audio Frequency - Open Frame  SEE PAGE 1878	**Inductive Components**  SEE WEBSITE	**Mains Voltage Changers**  SEE WEBSITE	**Pulse, High Frequency - Open Frame**  SEE PAGE 1879
Audio Frequency - Screened  SEE PAGE 1878	**Isolation**  SEE WEBSITE	**PCB Encapsulated**  SEE PAGE 1869	**Ring Cores**  SEE PAGE 1883
Auto  SEE PAGE 1875	**Line Isolating/Matching - Through-Hole Mounted**  SEE PAGE 1879	**PCB Mounting**  SEE PAGE 1872	**Toroidal**  SEE PAGE 1875
Clamp Mounting  SEE PAGE 1873	**Line Isolating/Matching - Surface Mounted**  SEE PAGE 1879	**Portable Isolation**  SEE WEBSITE	**Transformer Ferrite Assemblies**  SEE PAGE 1882
Control Panel  SEE PAGE 1875	**Low Voltage Lighting**  SEE WEBSITE	**Pulse, High Frequency - Encapsulated**  SEE WEBSITE	**Variable**  SEE PAGE 1880

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Common Types of Rectifier Configuration



Notes

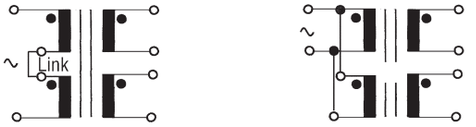
FC = Filter capacitor (omit for unsmoothed output)
RL = Resistive load
CT = Centre tapped secondary
~ = Mains input

Diodes should have a PTRV of four times the secondary rms voltage.
Full wave V out = 0.707 x secondary volts (due to centre tap).
Voltage doubler V out = 1.414 x secondary volts x 2 (Note: C is usually = FC).
Other circuits V out = 1.414 x secondary volts.

$$\text{Regulation} = \frac{\text{(Off load voltage-full load voltage) x 100}}{\text{off load voltage}}$$

223882

Transformer Connections, Twin Primary

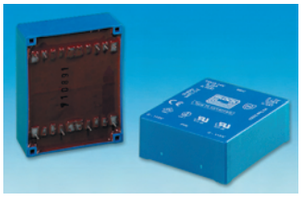


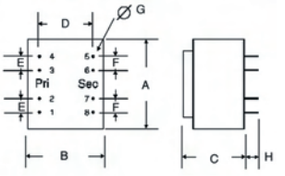
223883

Encapsulated

Low Profile, 115V + 115V Primary FL Series

BLOCK





- Low Profile
- Vacuum epoxy resin moulded (self extinguishing to **UL 94 V0**)
- Two chamber bobbin construction
- Primary/secondary isolation to 5kV. Secondary/secondary to 250V
- Soldering pins for printed circuit board mounting, additional screw mounting possible
- Dual output can be connected in series or in parallel
- Constructed and tested to **VDE 0570/EN 61 558, UL 506, CSA 22.2**

RATING (VA)	Dimension	2	4	6	6	8	10	14	18	24	30	42	52
Box Length	A	53	53	53	53	53	68	68	68	68	68	88.6	86.5
Box Width	B	44	44	44	44	44	57	57	57	57	57	70	70
Box Height	C	17.6	19.8	22.6	22.6	28.6	22.8	24.4	27.6	31.4	36.8	39	49
Pin Row Separation	D	35	35	35	35	35	62.5	45	45	45	45	53.5	53.5
Pin Spacing (Pri)	E	10	10	10	10	10	15	15	15	15	15	15	15
Pin Spacing (Sec)	F	5	5	5	5	5	10	10	10	10	10	10	10
Pin Diameter	G	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.45 x 1.1	0.45 x 1.1
Mounting Hole Dia	H	115	145	175	175	247	280	315	375	445	530	715	980
Typical Regulation	(%)	66	66	69	69	76	72	74	77	77	81	81	81

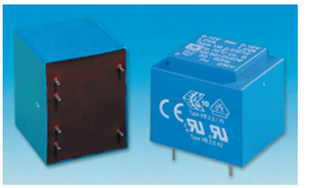
275030

115V + 115V Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+
2VA - 1VA per secondary winding					
0-6V, 0-6V @ 0.16A	FL2/6	**113-1513**	18.72	17.94	16.89
0-9V, 0-9V @ 0.11A	FL2/9	**113-1514**	18.72	17.94	16.89
0-12V, 0-12V @ 0.083A	FL2/12	**113-1509**	18.72	17.94	16.89
0-15V, 0-15V @ 0.066A	FL2/15	**113-1510**	18.72	17.94	16.89
0-18V, 0-18V @ 0.055A	FL2/18	**113-1511**	18.72	17.94	16.89
0-6V, 0-6V @ 0.33A	FL4/6	**113-1533**	17.35	16.67	15.69
4VA - 2VA per secondary winding					
0-6V, 0-6V @ 0.33A	FL4/6	**113-1533**	17.35	16.67	15.69
0-9V, 0-9V @ 0.22A	FL4/9	**113-1534**	19.11	18.33	17.25
0-12V, 0-12V @ 0.16A	FL4/12	**113-1529**	19.11	18.33	17.25
0-15V, 0-15V @ 0.13A	FL4/15	**113-1530**	19.11	18.33	17.25
0-18V, 0-18V @ 0.11A	FL4/18	**113-1531**	19.11	18.33	17.25
0-24V, 0-24V @ 0.08A	FL4/24	**113-1532**	19.11	18.33	17.25

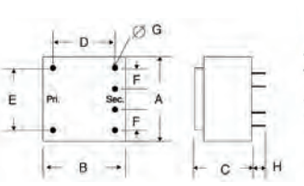
115V + 115V Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+
6VA - 3VA per secondary winding					
0-6V, 0-6V @ 0.6A	FL6/6	**113-1554**	19.50	18.69	17.61
0-9V, 0-9V @ 0.375A	FL6/9	**113-1555**	19.50	18.69	17.61
0-12V, 0-12V @ 0.25A	FL6/12	**113-1549**	19.50	18.69	17.61
0-15V, 0-15V @ 0.2A	FL6/15	**113-1550**	19.50	18.69	17.61
0-18V, 0-18V @ 0.166A	FL6/18	**113-1551**	19.50	18.69	17.61
0-24V, 0-24V @ 0.125A	FL6/24	**113-1553**	19.50	18.69	17.61
8VA - 4VA per secondary winding					
0-6V, 0-6V @ 0.66A	FL8/6	**113-1560**	23.16	22.14	20.91
0-9V, 0-9V @ 0.44A	FL8/9	**113-1561**	23.16	22.14	20.91
0-12V, 0-12V @ 0.33A	FL8/12	**113-1556**	23.16	22.14	20.91
0-15V, 0-15V @ 0.26A	FL8/15	**113-1557**	23.16	22.14	20.91
0-18V, 0-18V @ 0.22A	FL8/18	**113-1558**	23.16	22.14	20.91
0-24V, 0-24V @ 0.16A	FL8/24	**113-1559**	23.16	22.14	20.91
10VA - 5VA per secondary winding					
0-6V, 0-6V @ 0.833A	FL10/6	**113-1493**	23.64	22.62	21.36
0-9V, 0-9V @ 0.555A	FL10/9	**113-1494**	23.64	22.62	21.36
0-12V, 0-12V @ 0.416A	FL10/12	**113-1489**	17.87	17.12	16.28
0-15V, 0-15V @ 0.333A	FL10/15	**113-1490**	23.64	22.62	21.36
0-18V, 0-18V @ 0.277A	FL10/18	**113-1491**	23.64	22.62	21.36
0-24V, 0-24V @ 0.208A	FL10/24	**113-1492**	23.64	22.62	21.36
14VA - 7VA per secondary winding					
0-6V, 0-6V @ 1.16A	FL14/6	**113-1500**	24.27	23.22	21.90
0-9V, 0-9V @ 0.77A	FL14/9	**113-1501**	24.27	23.22	21.90
0-12V, 0-12V @ 0.583A	FL14/12	**113-1495**	24.27	23.22	21.90
0-15V, 0-15V @ 0.466A	FL14/15	**113-1496**	24.27	23.22	21.90
0-18V, 0-18V @ 0.38A	FL14/18	**113-1498**	24.27	23.22	21.90
0-24V, 0-24V @ 0.29A	FL14/24	**113-1499**	24.27	23.22	21.90
18VA - 9VA per secondary winding					
0-6V, 0-6V @ 1.5A	FL18/6	**113-1507**	24.28	23.31	21.94
0-9V, 0-9V @ 1A	FL18/9	**113-1508**	26.76	25.65	24.15
0-12V, 0-12V @ 0.75A	FL18/12	**113-1502**	26.76	25.65	24.15
0-15V, 0-15V @ 0.6A	FL18/15	**113-1504**	24.28	23.31	21.94
0-18V, 0-18V @ 0.5A	FL18/18	**113-1505**	26.76	25.65	24.15
0-24V, 0-24V @ 0.375A	FL18/24	**113-1506**	26.76	25.65	24.15
24VA - 12VA per secondary winding					
0-6V, 0-6V @ 2A	FL24/6	**113-1520**	30.18	28.95	27.24
0-9V, 0-9V @ 1.33A	FL24/9	**113-1521**	30.18	28.95	27.24
0-12V, 0-12V @ 1A	FL24/12	**113-1516**	30.18	28.95	27.24
0-15V, 0-15V @ 2A	FL24/15	**113-1517**	30.18	28.95	27.24
0-18V, 0-18V @ 0.66A	FL24/18	**113-1518**	30.18	28.95	27.24
0-24V, 0-24V @ 0.5A	FL24/24	**113-1519**	30.18	28.95	27.24
30VA - 15VA per secondary winding					
0-6V, 0-6V @ 2.5A	FL30/6	**113-1526**	30.27	29.03	27.31
0-9V, 0-9V @ 1.66A	FL30/9	**113-1528**	33.33	31.95	30.06
0-12V, 0-12V @ 1.25A	FL30/12	**113-1522**	33.33	31.95	30.06
0-15V, 0-15V @ 1A	FL30/15	**113-1523**	33.33	31.95	30.06
0-18V, 0-18V @ 0.83A	FL30/18	**113-1524**	33.33	31.95	30.06
0-24V, 0-24V @ 0.625A	FL30/24	**113-1525**	33.33	31.95	30.06
42VA - 21VA per secondary winding					
0-6V, 0-6V @ 3.5A	FL42/6	**113-1541**	42.48	40.68	38.31
0-9V, 0-9V @ 2.33A	FL42/9	**113-1542**	42.48	40.68	38.31
0-12V, 0-12V @ 1.75A	FL42/12	**113-1535**	42.48	40.68	38.31
0-15V, 0-15V @ 1.4A	FL42/15	**113-1536**	42.48	40.68	38.31
0-18V, 0-18V @ 3.5A	FL42/18	**113-1537**	42.48	40.68	38.31
0-24V, 0-24V @ 0.875A	FL42/24	**113-1538**	42.48	40.68	38.31
52VA - 26VA per secondary winding					
0-6V, 0-6V @ 4.3A	FL52/6	**113-1547**	49.74	47.64	44.88
0-9V, 0-9V @ 2.88A	FL52/9	**113-1548**	49.74	47.64	44.88
0-12V, 0-12V @ 2.16A	FL52/12	**113-1543**	49.74	47.64	44.88
0-15V, 0-15V @ 1.73A	FL52/15	**113-1544**	49.74	47.64	44.88
0-18V, 0-18V @ 1.44A	FL52/18	**113-1545**	49.74	47.64	44.88
0-24V, 0-24V @ 1.08A	FL52/24	**113-1546**	49.74	47.64	44.88

Short Circuit Proof, VB/AVB Series

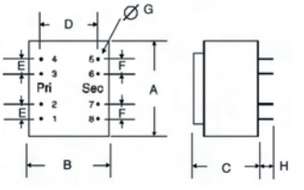
BLOCK



- Inherently short-circuit proof
- Vacuum epoxy resin moulded (self extinguishing to **UL 94 V0**)
- Two chamber bobbin construction
- Primary/secondary isolation to 5kV. Secondary/secondary to 250V
- Soldering pins for printed circuit board mounting
- Dual output can be connected in series or in parallel
- Constructed and tested to **VDE 0570/EN 61 558, UL 506, CSA 22.2**



230V Primary



115+115V Primary

Transformers

47

RoHS Compliant
Non-compliant
+ Limited stock - RoHS replacement available

	Dimension						
Rating (VA)		0.35	0.5	1	1.5	2.3	3.2
Box Length	A	22.7	22.7	32.3	32.3	32.3	41
Box Width	B	22	22	27.3	27.3	27.3	35
Box Height	C	15	19	21.8	23.8	29	30.8
Pin Row Separation	D	15	15	20	20	20	25
Pin Spacing (Pri) VB series	E	15	15	10	20	20	20
Pin Spacing (Pri) AVB series	E	5	5	5	5	5	5
Pin Spacing (Sec)	F	5	5	5	5	5	5
Pin Diameter	G	0.6	0.6	0.8	0.8	0.8	0.8
Pin Length	H	5	5	5	5	5	5
Weight		24	35	72	84	110	173
Typical Regulation (%)		30	40	55	57	59	58

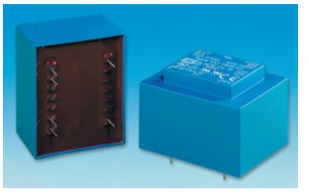
274349

230V Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
0.35VA - 0.175VA per secondary winding						
0-6V, 0-6V @ 0.029A	VB0.35/2/6	**113-1608**	7.80	7.41	7.35	6.99
0-9V, 0-9V @ 0.019A	VB0.35/2/9	**113-1609**	7.80	7.41	7.35	6.99
0-12V, 0-12V @ 0.014A	VB0.35/2/12	**113-1603**	7.80	7.41	7.35	6.99
0-15V, 0-15V @ 0.011A	VB0.35/2/15	**113-1604**	7.80	7.41	7.35	6.99
0-18V, 0-18V @ 0.009A	VB0.35/2/18	**113-1605**	7.80	7.41	7.35	6.99
0-24V, 0-24V @ 0.007A	VB0.35/2/24	**113-1607**	7.80	7.41	7.35	6.99
0.5VA - 0.25VA per secondary winding						
0-6V, 0-6V @ 0.041A	VB0.5/2/6	**113-1614**	8.13	7.71	7.68	7.32
0-9V, 0-9V @ 0.027A	VB0.5/2/9	**113-1615**	8.13	7.71	7.68	7.32
0-12V, 0-12V @ 0.02A	VB0.5/2/12	**113-1610**	8.13	7.71	7.68	7.32
0-15V, 0-15V @ 0.016A	VB0.5/2/15	**113-1611**	8.13	7.71	7.68	7.32
0-18V, 0-18V @ 0.013A	VB0.5/2/18	**113-1612**	8.13	7.71	7.68	7.32
0-24V, 0-24V @ 0.007A	VB0.5/2/24	**113-1613**	8.13	7.71	7.68	7.32
1VA - 0.5VA per secondary winding						
0-6V, 0-6V @ 0.083A	VB1.0/2/6	**113-1622**	7.44	7.08	6.99	6.72
0-6V, 0-6V @ 0.083A	VB1.0/2/6	**113-1622**	7.44	7.08	6.99	6.72
0-12V, 0-12V @ 0.041A	VB1.0/2/12	**113-1616**	7.44	7.08	6.99	6.72
0-15V, 0-15V @ 0.033A	VB1.0/2/15	**113-1617**	7.44	7.08	6.99	6.72
0-18V, 0-18V @ 0.027A	VB1.0/2/18	**113-1619**	7.44	7.08	6.99	6.72
0-24V, 0-24V @ 0.007A	VB1.0/2/24	**113-1621**	7.44	7.08	6.99	6.72
1.5VA - 0.75VA per secondary winding						
0-6V, 0-6V @ 0.125A	VB1.5/2/6	**113-1628**	7.35	6.99	6.93	6.63
0-9V, 0-9V @ 0.083A	VB1.5/2/9	**113-1629**	7.35	6.99	6.93	6.63
0-12V, 0-12V @ 0.062A	VB1.5/2/12	**113-1624**	7.35	6.99	6.93	6.63
0-15V, 0-15V @ 0.05A	VB1.5/2/15	**113-1625**	7.35	6.99	6.93	6.63
0-18V, 0-18V @ 0.041A	VB1.5/2/18	**113-1626**	7.35	6.99	6.93	6.63
0-24V, 0-24V @ 0.007A	VB1.5/2/24	**113-1627**	7.35	6.99	6.93	6.63
2.3VA - 1.15VA per secondary winding						
0-6V, 0-6V @ 0.191A	VB2.3/2/6	**113-1635**	8.49	8.07	8.01	7.68
0-9V, 0-9V @ 0.127A	VB2.3/2/9	**113-1636**	8.49	8.07	8.01	7.68
0-12V, 0-12V @ 0.095A	VB2.3/2/12	**113-1630**	7.75	7.32	7.19	6.97
0-15V, 0-15V @ 0.076A	VB2.3/2/15	**113-1632**	8.49	8.07	8.01	7.68
0-18V, 0-18V @ 0.063A	VB2.3/2/18	**113-1633**	8.49	8.07	8.01	7.68
0-24V, 0-24V @ 0.007A	VB2.3/2/24	**113-1634**	8.49	8.07	8.01	7.68
3.2VA - 1.6VA per secondary winding						
0-6V, 0-6V @ 0.266A	VB3.2/2/6	**113-1641**	8.85	8.40	8.37	7.98
0-9V, 0-9V @ 0.177A	VB3.2/2/9	**113-1642**	8.85	8.40	8.37	7.98
0-12V, 0-12V @ 0.133A	VB3.2/2/12	**113-1637**	8.85	8.40	8.37	7.98
0-15V, 0-15V @ 0.106A	VB3.2/2/15	**113-1638**	8.85	8.40	8.37	7.98
0-18V, 0-18V @ 0.088A	VB3.2/2/18	**113-1639**	8.85	8.40	8.37	7.98
0-24V, 0-24V @ 0.007A	VB3.2/2/24	**113-1640**	8.85	8.40	8.37	7.98
115V+115V Primary						
0.35VA - 0.175VA per secondary winding						
0-6V, 0-6V @ 0.029A	AVB0.35/2/6	**113-1455**	8.79	7.80	7.47	7.17
0-9V, 0-9V @ 0.019A	AVB0.35/2/9	**113-1456**	8.79	7.80	7.47	7.17
0-12V, 0-12V @ 0.014A	AVB0.35/2/12	**113-1451**	8.79	7.80	7.47	7.17
0-15V, 0-15V @ 0.011A	AVB0.35/2/15	**113-1452**	8.79	7.80	7.47	7.17
0-18V, 0-18V @ 0.009A	AVB0.35/2/18	**113-1453**	8.79	7.80	7.47	7.17
0-24V, 0-24V @ 0.007A	AVB0.35/2/24	**113-1454**	8.79	7.80	7.47	7.17
0.5VA - 0.25VA per secondary winding						
0-6V, 0-6V @ 0.041A	AVB0.5/2/6	**113-1462**	9.15	8.16	7.80	7.47
0-9V, 0-9V @ 0.027A	AVB0.5/2/9	**113-1463**	9.15	8.16	7.80	7.47
0-12V, 0-12V @ 0.020A	AVB0.5/2/12	**113-1457**	9.15	8.16	7.80	7.47
0-15V, 0-15V @ 0.016A	AVB0.5/2/15	**113-1458**	9.15	8.16	7.80	7.47
0-18V, 0-18V @ 0.013A	AVB0.5/2/18	**113-1459**	9.15	8.16	7.80	7.47
0-24V, 0-24V @ 0.007A	AVB0.5/2/24	**113-1460**	9.15	8.16	7.80	7.47
1VA - 0.5VA per secondary winding						
0-6V, 0-6V @ 0.083A	AVB1.0/2/6	**113-1468**	8.25	7.35	7.05	6.75
0-9V, 0-9V @ 0.055A	AVB1.0/2/9	**113-1469**	8.25	7.35	7.05	6.75
0-12V, 0-12V @ 0.041A	AVB1.0/2/12	**113-1464**	8.25	7.35	7.05	6.75
0-15V, 0-15V @ 0.033A	AVB1.0/2/15	**113-1465**	8.25	7.35	7.05	6.75
0-18V, 0-18V @ 0.027A	AVB1.0/2/18	**113-1466**	8.25	7.35	7.05	6.75
0-24V, 0-24V @ 0.007A	AVB1.0/2/24	**113-1467**	8.25	7.35	7.05	6.75
1.5VA - 0.75VA per secondary winding						
0-6V, 0-6V @ 0.125A	AVB1.5/2/6	**113-1474**	6.25	5.60	5.34	5.14
0-9V, 0-9V @ 0.093A	AVB1.5/2/9.	**438-5937**	8.25	7.35	7.05	6.75
0-9V, 0-9V @ 0.093A	AVB1.5/2/9	**113-1475**	8.25	7.35	7.05	6.75
0-12V, 0-12V @ 0.062A	AVB1.5/2/12	**113-1470**	8.25	7.35	7.05	6.75
0-15V, 0-15V @ 0.050A	AVB1.5/2/15	**113-1471**	8.25	7.35	7.05	6.75
0-18V, 0-18V @ 0.041A	AVB1.5/2/18	**113-1472**	8.25	7.35	7.05	6.75
2.3VA - 1.15VA per secondary winding						
0-6V, 0-6V @ 0.191A	AVB2.3/2/6	**113-1480**	9.45	8.40	8.07	7.74
0-9V, 0-9V @ 0.127A	AVB2.3/2/9	**113-1481**	9.45	8.40	8.07	7.74
0-12V, 0-12V @ 0.095A	AVB2.3/2/12	**113-1476**	9.45	8.40	8.07	7.74

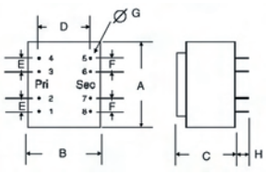
230V Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
2.3VA - 1.15VA per secondary winding						
0-15V, 0-15V @ 0.076A	AVB2.3/2/15	**113-1477**	9.45	8.40	8.07	7.74
0-18V, 0-18V @ 0.063A	AVB2.3/2/18	**113-1478**	9.45	8.40	8.07	7.74
0-24V, 0-24V @ 0.007A	AVB2.3/2/24	**113-1479**	9.45	8.40	8.07	7.74
3.2VA - 1.6VA per secondary winding						
0-6V, 0-6V @ 0.266A	AVB3.2/2/6	**113-1487**	7.49	6.71	6.41	6.14
0-9V, 0-9V @ 0.177A	AVB3.2/2/9	**113-1488**	9.90	8.82	8.43	8.10
0-12V, 0-12V @ 0.133A	AVB3.2/2/12	**113-1482**	9.90	8.82	8.43	8.10
0-15V, 0-15V @ 0.106A	AVB3.2/2/15	**113-1483**	9.90	8.82	8.43	8.10
0-18V, 0-18V @ 0.088A	AVB3.2/2/18	**113-1484**	9.90	8.82	8.43	8.10
0-24V, 0-24V @ 0.007A	AVB3.2/2/24	**113-1486**	9.90	8.82	8.43	8.10

PCB Mounting, VC/AVC Series

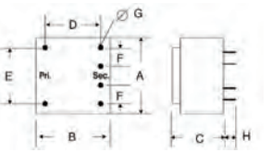
BLOCK



- Vacuum epoxy resin moulded (self extinguishing to **UL 94 V0**)
- Two chamber bobbin construction
- Primary/secondary isolation to 5kV. Secondary/secondary to 250V
- Soldering pins for printed circuit board mounting
- Dual output can be connected in series or in parallel
- Constructed and tested to **VDE 0570/ EN 61 558, UL 506, CSA 22.2**



115+115V Primary



230V Primary

Rating (VA)	Dimension	3.2	5	10	16
Box Length	A	41	44	51	57
Box Width	B	35	37	43	48
Box Height	C	28.1	33	34.6	39
Pin Row Separation	D	25	25	27.5	30
Pin Spacing (Pri) VC series	E	15	25	25	30
Pin Spacing (Pri) AVC series	E	5	10	10	10
Pin Spacing (Sec)	F	5	5	5	5
Pin Diameter	G	0.6	0.8	0.8	0.8
Pin Length	H	5	5	5	5
Weight		150	190	280	280
Typical Regulation (%) VC		60	77	79	80
Typical Regulation (%) AVC		60	68	74	76

274637

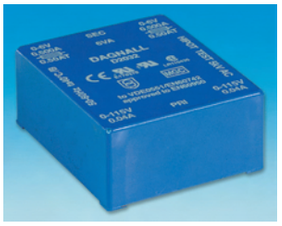
	Mftrs. List No.	Order Code	Price Each 1+	20+	50+
230V Primary					
3.2VA - 1.6VA per secondary winding					
0-6V, 0-6V @ 0.266A	VC3.2/2/6	**438-4787**	9.42	9.03	8.52
0-9V, 0-9V @ 0.177A	VC3.2/2/9	**438-4799**	9.42	9.03	8.52
0-12V, 0-12V @ 0.133A	VC3.2/2/12	**438-4805**	9.42	9.03	8.52
0-15V, 0-15V @ 0.106A	VC3.2/2/15	**438-4817**	9.42	9.03	8.52
0-18V, 0-18V @ 0.088A	VC3.2/2/18	**438-4829**	9.42	9.03	8.52
0-24V, 0-24V @ 0.007A	VC3.2/2/24	**438-4830**	9.42	9.03	8.52
5VA - 2.5VA per secondary winding					
0-6V, 0-6V @ 0.416A	VC5.0/2/6	**438-4842**	10.74	10.29	9.72
0-9V, 0-9V @ 0.277A	VC5.0/2/9	**438-4854**	10.74	10.29	9.72
0-12V, 0-12V @ 0.208A	VC5.0/2/12	**438-4866**	10.74	10.29	9.72
0-15V, 0-15V @ 0.166A	VC5.0/2/15	**438-4878**	10.74	10.29	9.72
0-18V, 0-18V @ 0.138A	VC5.0/2/18	**438-4880**	10.74	10.29	9.72
0-24V, 0-24V @ 0.007A	VC5.0/2/24	**438-4891**	10.74	10.29	9.72
10VA - 5VA per secondary winding					
0-6V, 0-6V @ 0.833A	VC10/2/6	**438-4908**	15.15	14.49	13.65
0-9V, 0-9V @ 0.555A	VC10/2/9	**438-4910**	15.15	14.49	13.65
0-12V, 0-12V @ 0.416A	VC10/2/12	**438-4921**	15.15	14.49	13.65
0-15V, 0-15V @ 0.333A	VC10/2/15	**438-4933**	15.15	14.49	13.65
0-18V, 0-18V @ 0.277A	VC10/2/18	**438-4945**	15.15	14.49	13.65
0-24V, 0-24V @ 0.007A	VC10/2/24	**438-4957**	15.15	14.49	13.65
0-12V, 0-12V @ 0.416A	VC10/2/12	**438-4921**	15.15	14.49	13.65
16VA - 8VA per secondary winding					
0-6V, 0-6V @ 1.33A	VC16/2/6	**438-4969**	16.95	16.26	15.30
0-9V, 0-9V @ 0.88A	VC16/2/9	**438-4970**	16.95	16.26	15.30
0-12V, 0-12V @ 0.66A	VC16/2/12	**438-4982**	16.95	16.26	15.30
0-15V, 0-15V @ 0.53A	VC16/2/15	**438-4994**	16.95	16.26	15.30
0-18V, 0-18V @ 0.44A	VC16/2/18	**438-5007**	16.95	16.26	15.30
0-24V, 0-24V @ 0.007A	VC16/2/24	**438-5019**	16.95	16.26	15.30
115V+115V Primary					
3.2VA - 1.6VA per secondary winding					
0-6V, 0-6V @ 0.266A	AVC3.2/2/6	**438-5147**	9.42	9.03	8.52
0-9V, 0-9V @ 0.177A	AVC3.2/2/9	**438-5159**	9.42	9.03	8.52
0-12V, 0-12V @ 0.266A	AVC3.2/2/12	**438-5160**	9.42	9.03	8.52

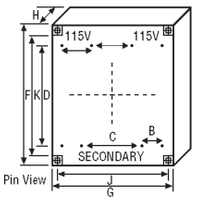
Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

	Mftrs. List No.	Order Code	Price Each 1+	20+	50+
115V+115V Primary					
3.2VA - 1.6VA per secondary winding					
0-15V, 0-15V @ 0.106A	AVC3.2/2/15	**438-5172**	9.42	9.03	8.52
0-18V, 0-18V @ 0.088A	AVC3.2/2/18	**438-5184**	8.59	8.20	7.78
0-24V, 0-24V @ 0.007A	AVC3.2/2/24	**438-5196**	9.42	9.03	8.52
5VA - 2.5VA per secondary winding					
0-6V, 0-6V @ 0.416A	AVC5.0/2/6	**438-5202**	10.74	10.29	9.72
0-9V, 0-9V @ 0.277A	AVC5.0/2/9	**438-5214**	9.76	9.34	8.85
0-12V, 0-12V @ 0.208A	AVC5.0/2/12	**438-5226**	10.74	10.29	9.72
0-15V, 0-15V @ 0.166A	AVC5.0/2/15	**438-5238**	9.76	9.34	8.85
0-18V, 0-18V @ 0.138A	AVC5.0/2/18	**438-5240**	10.74	10.29	9.72
0-24V, 0-24V @ 0.007A	AVC5.0/2/24	**438-5251**	10.74	10.29	9.72
10VA - 5VA per secondary winding					
0-6V, 0-6V @ 0.833A	AVC10/2/6	**438-5263**	15.15	14.49	13.65
0-9V, 0-9V @ 0.555A	AVC10/2/9	**438-5275**	15.15	14.49	13.65
0-12V, 0-12V @ 0.416A	AVC10/2/12	**438-5287**	13.77	13.15	12.40
0-15V, 0-15V @ 0.333A	AVC10/2/15	**438-5299**	15.15	14.49	13.65
0-18V, 0-18V @ 0.277A	AVC10/2/18	**438-5305**	15.15	14.49	13.65
0-24V, 0-24V @ 0.007A	AVC10/2/24	**438-5317**	15.15	14.49	13.65
16VA - 8VA per secondary winding					
0-6V, 0-6V @ 1.33A	AVC16/2/6	**438-5329**	16.95	16.26	15.30
0-9V, 0-9V @ 0.88A	AVC16/2/9	**438-5330**	15.40	14.81	13.90
0-12V, 0-12V @ 0.66A	AVC16/2/12	**438-5342**	16.95	16.26	15.30
0-15V, 0-15V @ 0.53A	AVC16/2/15	**438-5354**	16.95	16.26	15.30
0-18V, 0-18V @ 0.44A	AVC16/2/18	**438-5366**	16.95	16.26	15.30
0-24V, 0-24V @ 0.007A	AVC16/2/24	**438-5378**	15.40	14.81	13.90

115/230V Primary, Low Profile

Approved to EN60950





- Twin 115V primary - connect in series for 230V operation or parallel for 115V operation
- Low profile
- Encapsulation resin to **UL** recognised - filled under vacuum
- High efficiency, low temperature rise
- Low interwinding capacitance and low radiated noise
- 5kV primary/secondary isolation
- 100% Flash and Electrical tested
- 9VA model has same package size as 6VA
- Designed and manufactured to **VDE0551/EN60742 and EN61558**
- **Approved** and **Independently Certified to EN60950**
- **UL** recognised and **CSA** approved

RATING (VA)		**2**	**4**	**6**	**9**	**10**	**14**	**18**	**24**	**30**
Pin Spacing (PRI)	A	10	10	10	10	15	15	15	15	15
Pin Spacing (PRI)	A1	15	15	15	15	16	16	16	16	16
Pin Spacing (SEC)	B	5	5	5	5	10	10	10	10	10
Pin Spacing (SEC)	C	25	25	25	25	26	26	26	26	26
Pin Row Separation	D	35	35	35	35	45	45	45	45	45
Pin Length (0.8 x 0.6)		4	4	4	4	4	4	4	4	4
Box Length	F	53.4	53.4	53.4	53.4	68	68	68	68	68
Box Width	G	44.4	44.4	44.4	44.4	57.4	57.4	57.4	57.4	57.4
Box Height	H	17.5	19.5	22.5	28.5	22.7	24.8	28.1	31.6	35.6
Fixing Holes (2.5)	J	38	38	38	38	50	50	50	50	50
Fixing Holes (2.5)	K	47.5	47.5	47.5	47.5	62.5	62.5	62.5	62.5	62.5
Weight		120	140	180	250	270	325	380	470	540
TYPICAL REGULATION	%	22	30	24	24	24	22	20	17	15

Note: For VDE 0551/EN60742 conformity reasons, transformers with 2 x 24V outputs should not have their secondaries connected in series.

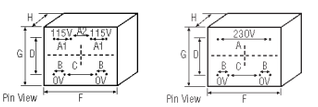
223918

	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
2VA - 1VA per secondary winding							
0-6,0-6V @ 0.17A	D2085	**116-6211**	21.17	20.25	18.35	16.31	– –
0-9V, 0-9V @ 0.11A	D2086	**116-6212**	21.17	20.25	18.35	16.31	– –
4VA - 2VA per secondary winding							
0-6V, 0-6V @ 0.33A	D2088	**116-6213**	21.48	20.59	19.77	18.04	– –
0-9V, 0-9V @ 0.22A	D2089	**116-6214**	21.48	20.59	19.77	18.04	– –
0-12V, 0-12V @ 0.165A	D2090	**116-6215**	21.48	20.59	19.77	18.04	– –
6VA - 3VA per secondary winding							
0-6V, 0-6V @ 0.5A	D2032	**116-6216**	21.95	21.01	20.19	18.45	– –
0-8V, 0-8V @ 0.375A	D2177	**116-6272**	21.95	21.01	20.19	18.45	– –
0-9V, 0-9V @ 0.33A	D2033	**116-6217**	21.95	21.01	20.19	18.45	– –
0-12V, 0-12V @ 0.25A	D2034	**116-6218**	21.95	21.01	20.19	18.45	– –
0-15V, 0-15V @ 0.2A	D2035	**116-6221**	21.95	21.01	20.19	18.45	– –
0-18V, 0-18V @ 0.165A	D2091	**116-6222**	21.95	21.01	20.19	18.45	– –
9VA - 4.5VA per secondary winding							
0-6V, 0-6V @ 0.75A	D2201	**116-6273**	26.50	24.15	22.89	20.34	– –
0-9V, 0-9V @ 0.5A	D2202	**116-6274**	26.50	24.15	22.89	20.34	– –
0-12V, 0-12V @ 0.375A	D2203	**116-6275**	26.50	24.15	22.89	20.34	– –
0-15V, 0-15V @ 0.3A	D2204	**116-6277**	26.50	24.15	22.89	20.34	– –
0-18V, 0-18V @ 0.25A	D2205	**116-6278**	26.50	24.15	22.89	20.34	– –

	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
10VA - 5VA per secondary winding							
0-9V, 0-9V @ 0.55A	D2037	**116-6223**	26.57	25.42	24.47	22.29	– –
0-12V, 0-12V @ 0.42A	D2038	**116-6224**	26.57	25.42	24.47	22.29	– –
0-15V, 0-15V @ 0.335A	D2039	**116-6225**	26.57	25.42	24.47	22.29	– –
0-18V, 0-18V @ 0.28A	D2092	**116-6226**	26.57	25.42	24.47	22.29	– –
14VA - 7VA per secondary winding							
0-6V, 0-6V @ 1.166A	D2080	**116-6227**	27.28	26.09	25.08	22.93	– –
0-8V, 0-8V @ 0.875A	D2178	**116-6279**	27.28	26.09	25.08	22.93	– –
0-9V, 0-9V @ 0.777A	D2081	**116-6228**	27.28	26.09	25.08	22.93	– –
0-12V, 0-12V @ 0.583A	D2082	**116-6229**	27.28	26.09	25.08	22.93	– –
0-15V, 0-15V @ 0.466A	D2083	**116-6230**	27.28	26.09	25.08	22.93	– –
0-18V, 0-18V @ 0.388A	D2084	**116-6231**	27.28	26.09	25.08	22.93	– –
18VA - 9VA per secondary winding							
0-6V, 0-6V @ 1.5A	D2040	**116-6233**	30.08	28.78	27.63	25.25	– –
0-9V, 0-9V @ 1A	D2041	**116-6234**	30.08	28.78	27.63	25.25	– –
0-12V, 0-12V @ 0.75A	D2042	**116-6235**	30.08	28.78	27.63	25.25	– –
0-15V, 0-15V @ 0.6A	D2043	**116-6236**	30.08	28.78	27.63	25.25	– –
0-18V, 0-18V @ 0.5A	D2093	**116-6237**	30.08	28.78	27.63	25.25	– –
24VA - 12VA per secondary winding							
0-6V, 0-6V @ 2A	D2044	**116-6238**	33.98	32.53	31.21	28.52	– –
0-9V, 0-9V @ 1.33A	D2045	**116-6239**	33.98	32.53	31.21	28.52	– –
0-12V, 0-12V @ 1A	D2046	**116-6240**	33.98	32.53	31.21	28.52	– –
0-15V, 0-15V @ 0.8A	D2047	**116-6242**	33.98	32.53	31.21	28.52	– –
0-18V, 0-18V @ 0.66A	D2094	**116-6243**	33.98	32.53	31.21	28.52	– –
0-2424V, 0-24V @ 0.5A	D2068	**116-6280**	33.98	32.53	31.21	28.52	– –
30VA - 15VA per secondary winding							
0-9V, 0-9V @ 1.67A	D2049	**116-6245**	37.51	35.90	34.44	31.48	– –
0-12V, 0-12V @ 1.25A	D2050	**116-6246**	37.51	35.90	34.44	31.48	– –
0-15V, 0-15V @ 1A	D2051	**116-6247**	37.51	35.90	34.44	31.48	– –
0-18V, 0-18V @ 0.83A	D2095	**116-6248**	37.51	35.90	34.44	31.48	– –

PCB Mounting

Approved to EN60950



- Choice of 230V or dual 115V primaries
- Double section bobbins
- 100% Flash and Electrical tested
- 0.35VA, 0.5VA, 1.0VA, 1.5VA and 2.3VA are inherently short circuit proof
- Designed and manufactured to **VDE0551/EN60742**
- **Approved** and **Independently Certified to EN60950**
- Approved to **EN61558** (1.5VA, 2.3VA and 3.3VA)
- **UL** Recognised and **CSA** Approved (1.5VA, 2.3VA and 3.3VA)
- Encapsulation resin to **UL94-VO**
- 5KV primary/secondary isolation

Note: For VDE0551/EN60742 conformance reasons, transformers with 2 x 24V outputs should not have their secondaries connected in series.

RATING (VA)		**0.35**	**0.5**	**1.0**	**1.5**	**1.5**	**2.3**	**3.3**	**3.3**
Pin Spacing (230V PRI)	A	15	15	20	20	—	20	20	—
Pin Spacing (115V PRI)	A1	—	—	—	—	5	—	—	5
Pin Spacing (115V PRI)	A2	—	—	—	—	10	—	—	10
Pin Spacing (SEC)	B	5	5	5	5	5	5	5	5
Pin Spacing (SEC)	C	5	5	10	10	5	10	10	5
Pin Row Separation	D	15	15	20	20	20	25	25	25
Box Length	F	22	22	32.5	32.5	32.5	41	41	35
Box Width	G	22.7	22.7	27.5	27.5	27.5	35	35	41
Box Height	H	15	19	21.3	21.3	21.3	21.1	27.2	30.8
Weight		25	40	65	70	70	95	140	173
TYPICAL REGULATION	(%)	45	45	25	40	40	40	30	30

223921

Single Primary - 230V	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
0.35VA - 0.175VA per secondary winding							
0-6V, 0-6V @ 0.029A	D3500	**116-6296**	10.39	9.19	8.36	7.71	– –
0-9V, 0-9V @ 0.019A	D3501	**116-6297**	10.39	9.19	8.36	7.71	– –
0.5VA - 0.25VA per secondary winding							
0-6V, 0-6V @ 0.04A	D3504	**116-6298**	10.76	9.53	8.71	7.99	– –
0-9V, 0-9V @ 0.03A	D3505	**116-6299**	10.76	9.53	8.71	7.99	– –
0-12V, 0-12V @ 0.02A	D3506	**116-6301**	10.76	9.53	8.71	7.99	– –
1VA - 0.5VA per secondary winding							
0-6V, 0-6V @ 0.08A	D3508	**116-6302**	9.89	8.76	7.95	7.30	– –
0-9V, 0-9V @ 0.06A	D3509	**116-6303**	9.89	8.76	7.95	7.30	– –
0-12V, 0-12V @ 0.04A	D3510	**116-6304**	9.89	8.76	7.95	7.30	– –
1.5VA - 0.75VA per secondary winding							
0-6V, 0-6V @ 0.13A	D2005	**116-6255**	11.53	10.54	9.99	8.89	– –
0-8V, 0-8V @ 0.09A	D2006	**116-6257**	11.53	10.54	9.99	8.89	– –
0-9V, 0-9V @ 0.08A	D2007	**116-6258**	11.53	10.54	9.99	8.89	– –
0-12V, 0-12V @ 0.06A	D2008	**116-6259**	11.53	10.54	9.99	8.89	– –
0-15V, 0-15V @ 0.05A	D2009	**116-6260**	11.53	10.54	9.99	8.89	– –
2.3VA - 1.15VA per secondary winding							
0-6V, 0-6V @ 0.19A	D2017	**116-6261**	16.28	14.90	14.12	12.54	– –
0-9V, 0-9V @ 0.13A	D2019	**116-6262**	16.28	14.90	14.12	12.54	– –
0-12V, 0-12V @ 0.1A	D2020	**116-6263**	16.28	14.90	14.12	12.54	– –
0-15V, 0-15V @ 0.08A	D2021	**116-6264**	16.28	14.90	14.12	12.54	– –

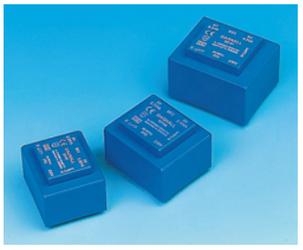
● Compliant
● Non-compliant
+ Limited stock - RoHS replacement available

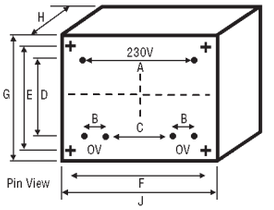
RoHS

Single Primary - 230V	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
3.3VA - 1.65VA per secondary winding							
0-6V, 0-6V @ 0.28A	D2023	**116-6265**	16.72	15.28	14.49	12.87	– –
0-8V, 0-8V @ 0.21A	D2024	**116-6266**	16.72	15.28	14.49	12.87	– –
0-9V, 0-9V @ 0.18A	D2025	**116-6267**	16.72	15.28	14.49	12.87	– –
0-12V, 0-12V @ 0.14A	D2026	**116-6269**	16.72	15.28	14.49	12.87	– –
0-15V, 0-15V @ 0.11A	D2027	**116-6271**	16.72	15.28	14.49	12.87	– –
Dual Primary - 115/230V							
1.5VA - 0.75VA per secondary winding							
0-6V, 0-6V @ 0.13A	D2011	**116-6249**	14.44	13.38	13.04	11.76	– –
0-8V, 0-8V @ 0.09A	D2012	**116-6250**	14.44	13.38	13.04	11.76	– –
0-9V, 0-9V @ 0.08A	D2013	**116-6251**	14.44	13.38	13.04	11.76	– –
0-12V, 0-12V @ 0.06A	D2014	**116-6252**	14.44	13.38	13.04	11.76	– –
0-15V, 0-15V @ 0.05A	D2015	**116-6253**	14.44	13.38	13.04	11.76	– –
0-24V, 0-24V @ 0.03A	D2016	**116-6254**	14.44	13.38	13.04	11.76	– –

Short Circuit Proof

Approved to EN60950





- Single 230V primary
- Internal PTC device provides protection against short circuit
- Encapsulation resin to **UL94-VO** - filled under vacuum
- Double section bobbins
- 5KV primary/secondary isolation
- 100% Flash and Electrical tested
- **Approved** and **Independently Certified to EN60950**
- Designed and manufactured to **VDE 0551/EN60742**

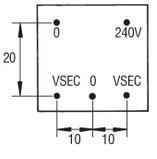
RATING (VA)		4.5	7.5	13
Pin Spacing (230V PRI)	A	25	25	30
Pin Spacing (SEC)	B	5	5	5
Pin Spacing (SEC)	C	15	15	20
Pin Row Separation	D	25	27.5	30
Pin Length (0.635sq)		5	5	4
Box Length	J	45	51	56
Box Width	G	38	43	47
Box Height	H	31.5	34.5	39
Fixing Centres (No. 4 x 8mm screws)	E	28	32	36
Fixing Centres (No. 4 x 8mm screws)	F	35	40	45
Weight		190	280	420
TYPICAL REGULATION	(%)	25	22	19

223923

	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
4.5VA - 2.25VA per secondary winding							
0-6V, 0-6V @ 0.375A	D2181	**116-6282**	26.14	23.89	22.67	20.86	– –
0-9V, 0-9V @ 0.25A	D2182	**116-6283**	26.14	23.89	22.67	20.86	– –
0-12V, 0-12V @ 0.19A	D2183	**116-6284**	26.14	23.89	22.67	20.86	– –
0-15V, 0-15V @ 0.15A	D2184	**116-6285**	26.14	23.89	22.67	20.86	– –
0-18V, 0-18V @ 0.13A	D2185	**116-6286**	26.14	23.89	22.67	20.86	– –
7.5VA - 3.75VA per secondary winding							
0-6V, 0-6V @ 0.63A	D2186	**116-6287**	29.02	26.54	25.15	23.05	– –
0-9V, 0-9V @ 0.42A	D2187	**116-6288**	29.02	26.54	25.15	23.05	– –
0-12V, 0-12V @ 0.31A	D2188	**116-6289**	29.02	26.54	25.15	23.05	– –
0-15V, 0-15V @ 0.25A	D2189	**116-6290**	29.02	26.54	25.15	23.05	– –
13VA - 6.5VA per secondary winding							
0-6V, 0-6V @ 1.08A	D2191	**116-6291**	32.00	29.24	27.71	25.43	– –
0-9V, 0-9V @ 0.72A	D2192	**116-6292**	32.00	29.24	27.71	25.43	– –
0-12V, 0-12V @ 0.54A	D2193	**116-6294**	32.00	29.24	27.71	25.43	– –
0-15V, 0-15V @ 0.43A	D2194	**116-6295**	32.00	29.24	27.71	25.43	– –

1.2VA, 240V Primary

H = 30 (excl. pins), W = 32.5, D = 27.5
Pin length = 4, dia = 1



Underside view

Miniature polyurethane encapsulated transformers for PCB mounting, with a single 240V primary winding and a centre tapped secondary total rating 1.2VA. Typical regulation 21%. Manufactured to **BS415 Class 2, VDE0550 Class 2** and **IEC742 Class 2,** and flash tested at 4.4kV primary to secondary.

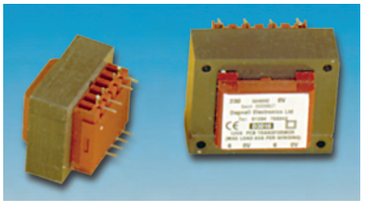
223901

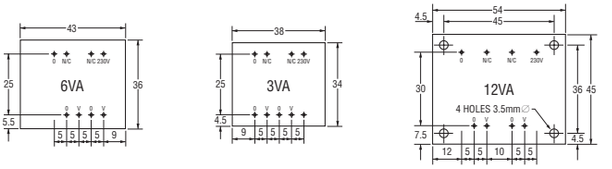
	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
4.5V-0-4.5V @ 0.133	D3600	**330-4905**	14.05	11.81	11.59	10.58
6-0-6V @ 0.1A	D3601	**330-4917**	14.05	11.81	11.59	10.58
9-0-9V @ 0.06A	D3602	**330-4929**	14.05	11.81	11.59	10.58
12-0-12V @ 0.05A	D3603	**330-4930**	14.05	11.81	11.59	10.58
15V-0-15V @ 0.04A	D3604	**330-4942**	14.05	11.81	11.59	10.58
20-0-20V @ 0.03A	D3605	**330-4954**	14.05	11.81	11.59	10.58

PCB Mounting

230V or 115+115V Primary

Metric Pitch





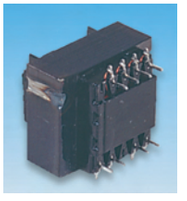
- Harmonised European input voltage in single (230V) or dual (115+115V) primary winding
- **UL** recognised flame retardant materials
- Independent secondary windings suitable for connecting in series or parallel giving a wide range of output voltage options
- Double section metric bobbin construction
- Fully shrouded windings
- Additional pins for secure board mounting
- Suitable for 50/60Hz operation
- 100% electrical and 4.8kV flash testing
- Designed, manufactured and tested in accordance with **BS3535, EN60742*** and **EN60950**

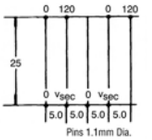
*Requires additonal fuse protection

223928

230V Single Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
3VA - 1.5VA per secondary winding						
0-6V, 0-6V @ 0.25A	D3000	**116-6152**	10.48	9.59	9.08	8.60
0-9V, 0-9V @ 0.167A	D3001	**116-6154**	10.48	9.59	9.08	8.60
0-12V, 0-12V @ 0.125A	D3002	**116-6155**	10.48	9.59	9.08	8.60
6VA - 3VA per secondary winding						
0-6V, 0-6V @ 0.5A	D3008	**116-6156**	11.30	10.37	9.83	9.24
0-9V, 0-9V @ 0.33A	D3009	**116-6157**	11.30	10.37	9.83	9.24
0-12V, 0-12V @ 0.25A	D3010	**116-6158**	11.30	10.37	9.83	9.24
0-15V, 0-15V @ 0.2A	D3011	**116-6159**	11.30	10.37	9.83	9.24
12VA - 6VA per secondary winding						
0-6V, 0-6V @ 1A	D3016	**116-6160**	13.75	12.58	11.89	11.27
0-9V, 0-9V @ 0.66A	D3017	**116-6161**	13.75	12.58	11.89	11.27
0-12V, 0-12V @ 0.5A	D3018	**116-6162**	13.75	12.58	11.89	11.27
0-15V, 0-15V @ 0.4A	D3019	**116-6163**	13.75	12.58	11.89	11.27
115V + 115V Primary						
3VA - 1.5VA per secondary winding						
0-6V, 0-6V @ 0.25A	D3004	**116-6164**	11.73	11.18	10.70	10.22
0-9V, 0-9V @ 0.167A	D3005	**116-6166**	11.73	11.18	10.70	10.22
0-12V, 0-12V @ 0.125A	D3006	**116-6167**	11.73	11.18	10.70	10.22
6VA - 3VA per secondary winding						
0-6V, 0-6V @ 0.5A	D3012	**116-6168**	12.59	11.94	11.49	10.98
0-9V, 0-9V @ 0.33A	D3013	**116-6169**	12.59	11.94	11.49	10.98
0-12V, 0-12V @ 0.25A	D3014	**116-6170**	13.41	– –	– –	– –
0-15V, 0-15V @ 0.2A	D3015	**116-6171**	12.59	11.94	11.49	10.98
12VA - 6VA per secondary winding						
0-6V, 0-6V @ 1A	D3020	**116-6173**	15.37	14.64	13.99	13.44
0-9V, 0-9V @ 0.66A	D3021	**116-6174**	15.37	14.64	13.99	13.44
0-12V, 0-12V @ 0.5A	D3022	**116-6175**	15.37	14.64	13.99	13.44
0-15V, 0-15V @ 0.4A	D3023	**116-6176**	15.37	14.64	13.99	13.44

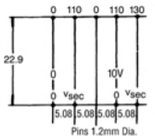
3VA to 12VA



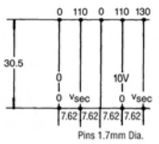


3VA: H = 30 (above PCB), W = 38, D = 36

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.



6VA: H = 35 (above PCB), W = 35.5, D = 43



12VA: H = 45.5 (above PCB), W = 47.5 D = 57 FC = 47.6 x 38.1 x 4BA

PCB Pin-outs (underside view)

A range of low voltage mains transformers with independent primary windings.

The primary windings of the 3VA transformers may be connected in series for 240V or in parallel for 120V. 6VA and 12VA transformer primary windings may be connected in series for 220V and 240V or in parallel for 110V operation. The double bobbin construction eliminates the need for an interwinding screen and gives double insulation between primary and secondary winding.

All transformers are manufactured to **BS415** and are 4kV flash tested.

224562

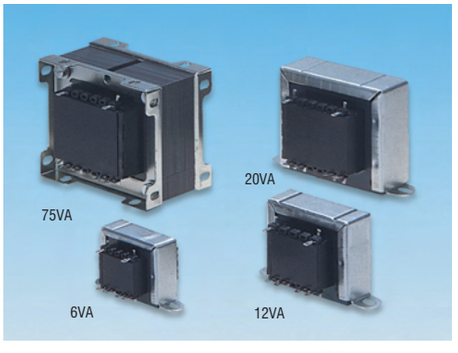
3VA - 20% Typical Regulation	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
0-4.5V, 0-4.5V @ 0.33A	D3606	**116-6305**	11.99	10.43	9.85	9.61
0-6V, 0-6V @ 0.25A	D3607	**116-6306**	11.99	10.43	9.85	9.61
0-9V, 0- @ 0.16A	D3608	**116-6307**	11.99	10.43	9.85	9.61
0-12V, 0-12V @ 0.12A	D3609	**116-6308**	11.99	10.43	9.85	9.61
0-15V, 0-15V @ 0.1A	D3610	**116-6309**	11.99	10.43	9.85	9.61
0-20V, 0-20V @ 0.07A	D3611	**116-6310**	11.99	10.43	9.85	9.61
6VA - 28% Typical Regulation						
0-4.5V, 0-4.5V @ 0.6A	D3613	**116-6312**	20.01	15.25	13.25	11.22
0-6V, 0-6V @ 0.5A	D3614	**116-6313**	20.01	15.25	13.25	11.22
0-9V, 0-9V @ 0.33A	D3615	**116-6314**	20.01	15.25	13.25	11.22
0-12V, 0-12V @ 0.25A	D3617	**116-6316**	20.01	15.25	13.25	11.22
0-15V, 0-15V @ 0.2A	D3618	**116-6317**	20.01	15.25	13.25	11.22
0-20V, 0-20V @ 0.15A	D3619	**116-6318**	20.01	15.25	13.25	11.22
0-24V, 0-24V @ 0.125A	D3620	**116-6319**	20.01	15.25	13.25	11.22
12VA - 12% Typical Regulation						
0-6V, 0-6V @ 1A	D3621	**116-6320**	19.18	15.98	14.57	13.71
0-9V, 0-9V @ 0.6A	D3622	**116-6321**	19.18	15.98	14.57	13.71
0-12V, 0-12V @ 0.5A	D3624	**116-6322**	19.18	15.98	14.57	13.71
0-15V, 0-15V @ 0.4A	D3625	**116-6324**	19.18	15.98	14.57	13.71
0-20V, 0-20V @ 0.3A	D3626	**116-6325**	19.18	15.98	14.57	13.71
0-24V, 0-24V @ 0.25A	D3627	**116-6326**	19.18	15.98	14.57	13.71

Clamp Mounting

230V Single Primary

multicomp

6VA to 200VA



- Chassis mounting low voltage mains transformers with 230V ac primary
- 2 secondary winding to be connected in series or parallel
- Double section bobbins on interleaved lamination provide 3.75kV isolation
- Fixing by clamp on models up to 50VA, and frame construction above
- Tested to meet **EN60065** and **EN60742***

*Requires additional fuse protection

VA	Dimensions W	D	H	FC	Fixing Style	Weight (kg)	Typical Regulation %
6	45	40	37	54	Clamp	0.2	25
12	59	50	50	72	Clamp	0.4	12
20	59	56	50	72	Clamp	0.55	10
50	79	62	65	92	Clamp	1	10
75	79	75	67	54 x 54	Frame	1.5	10
100	89	68	75	57 x 44	Frame	1.6	10
150	100	78	85	72 x 58	Frame	2.2	10
200	100	90	85	72 x 68	Frame	2.8	7

223909

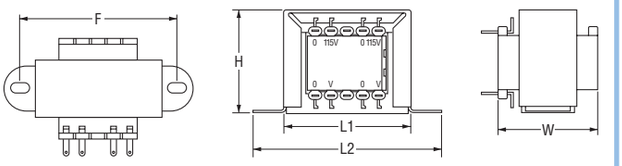
	Order Code	Price Each 1+	20+	50+	100+	+	+
6VA - 25% Typical Regulation							
0-5V, 0-5V @ 0.6A	**117-2352**	11.73	10.73	10.17	9.53	– –	– –
0-6V, 0-6V @ 0.5A	**117-2353**	10.02	9.53	– –	– –	– –	– –
0-9V, 0-9V @ 0.33A	**117-2354**	10.12	9.63	– –	– –	– –	– –
0-12V, 0-12V @ 0.25A	**117-2355**	10.02	9.53	– –	– –	– –	– –
0-15V, 0-15V @ 0.2A	**117-2356**	10.02	9.57	– –	– –	– –	– –
0-18V, 0-18V @ 0.17A	**117-2357**	11.73	10.73	10.17	9.53	– –	– –

	Order Code	Price Each 1+	20+	50+	100+	+	+
6VA - 25% Typical Regulation							
0-20V, 0-20V @ 0.15A	**117-2358**	10.12	9.63	– –	– –	– –	– –
0-24V, 0-24V @ 0.12A	**117-2361**	10.02	9.53	– –	– –	– –	– –
Terminal shroud for 6VA transformers	**177-221**	0.51	– –	– –	– –	– –	– –
12VA - 12% Typical Regulation							
0-5V, 0-5V @ 1.2A	**117-2362**	13.55	13.00	12.55	11.58	– –	– –
0-6V, 0-6V @ 1A	**117-2363**	13.22	12.60	– –	– –	– –	– –
0-9V, 0-9V @ 0.67A	**117-2364**	13.22	12.60	– –	– –	– –	– –
0-12V, 0-12V @ 0.5A	**117-2365**	13.22	12.60	– –	– –	– –	– –
0-15V, 0-15V @ 0.4A	**117-2366**	13.22	12.60	– –	– –	– –	– –
0-18V, 0-18V @ 0.33A	**117-2367**	13.22	12.60	– –	– –	– –	– –
0-20V, 0-20V @ 0.3A	**117-2368**	13.22	12.60	– –	– –	– –	– –
0-24V, 0-24V @ 0.25A	**117-2369**	13.22	12.60	– –	– –	– –	– –
Terminal shroud for 12VA transformers	**177-222**	0.58	– –	– –	– –	– –	– –
20VA - 10% Typical Regulation							
0-5V, 0-5V @ 2A	**117-2370**	17.14	16.42	15.80	14.60	– –	– –
0-6V, 0-6V @ 1.67A	**117-2371**	17.14	16.42	15.80	14.60	– –	– –
0-9V, 0-9V @ 1.1A	**117-2373**	15.35	14.60	– –	– –	– –	– –
0-12V, 0-12V @ 0.83A	**117-2374**	15.35	14.60	– –	– –	– –	– –
0-18V, 0-18V @ 0.55A	**117-2375**	15.35	14.60	– –	– –	– –	– –
0-20V, 0-20V @ 0.5A	**117-2376**	15.35	14.60	– –	– –	– –	– –
0-24V, 0-24V @ 0.42A	**117-2377**	15.35	14.60	– –	– –	– –	– –
Terminal shroud for 20VA transformers	**177-222**	0.58	– –	– –	– –	– –	– –
50VA - 10% Typical Regulation							
0-6V, 0-6V @ 4.17A	**117-2378**	22.80	21.91	– –	– –	– –	– –
0-9V, 0-9V @ 2.78A	**117-2379**	22.80	21.91	– –	– –	– –	– –
0-12V, 0-12V @ 2.08A	**117-2380**	22.80	21.91	– –	– –	– –	– –
0-15V, 0-15V @ 1.67A	**117-2381**	25.38	24.41	23.41	21.91	– –	– –
0-18V, 0-18V @ 1.39A	**117-2382**	22.80	21.90	– –	– –	– –	– –
0-20V, 0-20V @ 1.25A	**117-2383**	22.80	21.90	– –	– –	– –	– –
0-24V, 0-24V @ 1.04A	**117-2385**	22.80	21.91	– –	– –	– –	– –
Terminal shroud for 50VA transformers	**177-223**	0.64	– –	– –	– –	– –	– –
75VA - 10% Typical Regulation							
0-6V, 0-6V @ 6.25A	**117-2386**	33.30	31.95	– –	– –	– –	– –
0-9V, 0-9V @ 4.17A	**117-2387**	33.30	31.95	– –	– –	– –	– –
0-12V, 0-12V @ 3.12A	**117-2388**	33.30	31.95	– –	– –	– –	– –
0-15V, 0-15V @ 2.5A	**117-2389**	33.30	31.95	– –	– –	– –	– –
0-18V, 0-18V @ 2.08A	**117-2390**	33.30	31.95	– –	– –	– –	– –
0-24V, 0-24V @ 1.56A	**117-2391**	33.30	31.94	– –	– –	– –	– –
0-50V, 0-50V @ 0.75A	**117-2392**	33.30	31.95	– –	– –	– –	– –
Terminal shroud for 75VA transformers	**177-223**	0.64	– –	– –	– –	– –	– –
100VA - 10% Typical Regulation							
0-6V, 0-6V @ 8.33A	**117-2393**	38.01	37.16	– –	– –	– –	– –
0-9V, 0-9V @ 5.55A	**117-2394**	38.01	37.16	– –	– –	– –	– –
0-12V, 0-12V @ 4.17A	**117-2395**	38.01	37.16	– –	– –	– –	– –
0-15V, 0-15V @ 3.33A	**117-2397**	38.01	37.16	– –	– –	– –	– –
0-18V, 0-18V @ 2.78A	**117-2398**	38.01	37.15	– –	– –	– –	– –
0-20V, 0-20V @ 2.5A	**117-2399**	38.01	37.16	– –	– –	– –	– –
0-24V, 0-24V @ 2.08A	**117-2400**	38.72	37.16	– –	– –	– –	– –
0-50V, 0-50V @ 1A	**117-2401**	38.72	37.01	– –	– –	– –	– –
Terminal shroud for 100VA transformers	**177-223**	0.64	– –	– –	– –	– –	– –
150VA - 10% Typical Regulation							
0-6V, 0-6V @ 12.5A	**117-2403**	57.46	55.02	52.88	49.29	– –	– –
0-9V, 0-9V @ 8.33A	**117-2404**	51.60	49.29	46.78	– –	– –	– –
0-12V, 0-12V @ 6.25A	**117-2405**	51.60	49.29	49.29	– –	– –	– –
0-15V, 0-15V @ 5A	**117-2406**	57.46	55.02	52.88	49.29	– –	– –
0-18V, 0-18V @ 4.17A	**117-2407**	51.60	49.29	49.29	– –	– –	– –
0-24V, 0-24V @ 3.12A	**117-2408**	51.60	49.29	49.29	– –	– –	– –
0-50V, 0-50V @ 1.5A	**117-2409**	51.60	49.29	46.78	– –	– –	– –
200VA - 7% Typical Regulation							
0-6V, 0-6V @ 16.7A	**117-2410**	61.68	59.10	– –	– –	– –	– –
0-9V, 0-9V @ 11.1A	**117-2411**	61.68	59.10	– –	– –	– –	– –
0-12V, 0-12V @ 8.3A	**117-2412**	61.68	59.10	– –	– –	– –	– –
0-15V, 0-15V @ 6.67A	**117-2413**	61.68	59.10	– –	– –	– –	– –
0-18V, 0-18V @ 5.55A	**117-2415**	68.41	65.69	62.87	60.83	– –	– –
0-20V, 0-20V @ 5A	**117-2416**	61.68	59.10	– –	– –	– –	– –
0-24V, 0-24V @ 4.17A	**117-2417**	61.68	59.10	– –	– –	– –	– –
0-50V, 0-50V @ 2A	**117-2418**	61.68	59.06	– –	– –	– –	– –

Single 230V or Dual 115+115V Primary

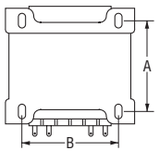
DAGNALL ELECTRONICS

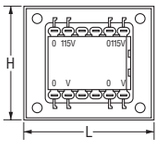
6VA to 200VA

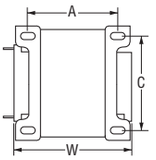


● Compliant
● Non-compliant
++ Limited stock - RoHS replacement available

RoHS







Rated VA	REG %	Dimensions L1/L2	W.#	H	Fixings F	Size	Weight (kg)
6	24	45/68	35.5	37.5	55	4BA	0.17
20	12	60/90	52	50	74	2BA	0.53
50	10	79/106	60	66	93.9	2BA	0.98

Excludes Tags

Rated VA	REG %	Dimensions L	W.#	H	A	Fixings B	C	Weight (kg)
100	10	89	65	75	44	57	57	1.55
200	8	102	85	85	68	72	56	2.75

Excludes Tags

- Harmonised European input voltage in single (230V) or dual (115V) primary winding
- **UL** recognised flame retardant materials
- Terminations suitable for solder or 'push on' connections (6VA solder tag only)
- Double section bobbin construction
- Fully shrouded windings
- Suitable for 50/60Hz operation
- 100% electrical & 4.8kV flash testing
- Two hole fixing wrap-over clamp up to and including 50VA, multi hole frame fixing for 75VA and above
- Optional terminal shroud up to 100VA
- Designed, manufactured and tested in accordance with **BS3535, EN60742*** and **EN60950**

* Requires additional fuse protection

223926

230V Single Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
6VA - 3VA Per Secondary Winding						
0-6V, 0-6V @ 0.5A	D3024	**116-6178**	13.40	12.26	11.62	10.96
0-9V, 0-9V @ 0.33A	D3025	**116-6179**	13.40	12.26	11.62	10.96
0-12V, 0-12V @ 0.25A	D3026	**116-6180**	13.40	12.26	11.62	10.96
Terminal shroud		**177-221**	0.51	– –	– –	– –
20VA - 10VA Per Secondary Winding						
0-9V, 0-9V @ 1.1A	D3041	**116-6181**	18.38	16.78	15.90	15.04
0-12V, 0-12V @ 1A	D3042	**116-6182**	18.38	16.78	15.90	15.04
0-15V, 0-15V @ 0.8A	D3043	**116-6183**	18.38	16.78	15.90	15.04
Terminal shroud		**177-222**	0.58	– –	– –	– –
50VA - 25VA Per Secondary Winding						
0-6V, 0-6V @ 4.17A	D3048	**116-6184**	27.70	25.35	24.05	22.67
0-9V, 0-9V @ 2.78A	D3049	**116-6185**	27.70	25.35	24.05	22.67
0-12V, 0-12V @ 2A	D3050	**116-6186**	27.70	25.35	24.05	22.67
0-15V, 0-15V @ 1.6A	D3051	**116-6187**	27.70	25.35	24.05	22.67
Terminal shroud		**177-223**	0.64	– –	– –	– –
100VA - 50VA Per Secondary Winding						
0-9V, 0-9V @ 5.55A	D3066	**116-6188**	49.34	45.17	42.76	40.42
0-12V, 0-12V @ 4.17A	D3067	**116-6191**	49.34	45.17	42.76	40.42
Terminal shroud	S07900/GNN/BLK	**177-223**	0.64	– –	– –	– –

115V+115V Dual Primary	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+
6VA - 3VA Per Secondary Winding						
0-6V, 0-6V @ 0.5A	D3028	**116-6193**	14.74	13.52	12.77	12.07
0-9V, 0-9V @ 0.33A	D3029	**116-6194**	14.74	13.52	12.77	12.07
0-12V, 0-12V @ 0.25A	D3030	**116-6195**	14.74	13.52	12.77	12.07
Terminal shroud		**177-221**	0.51	– –	– –	– –
20VA - 10VA Per Secondary Winding						
0-9V, 0-9V @ 1.1A	D3045	**116-6196**	20.14	18.43	17.47	16.50
0-12V, 0-12V @ 1A	D3046	**116-6197**	20.14	18.43	17.47	16.50
0-15V, 0-15V @ 0.8A	D3047	**116-6198**	20.14	18.43	17.47	16.50
Terminal shroud		**177-222**	0.58	– –	– –	– –
50VA - 25VA Per Secondary Winding						
0-6V, 0-6V @ 4.17A	D3052	**116-6199**	30.94	28.30	26.80	25.31
0-9V, 0-9V @ 2.78A	D3053	**116-6200**	30.94	28.30	26.80	25.31
0-12V, 0-12V @ 2A	D3054	**116-6201**	30.94	28.30	26.80	25.31
0-15V, 0-15V @ 1.6A	D3055	**116-6202**	30.94	28.30	26.80	25.31
Terminal shroud		**177-223**	0.64	– –	– –	– –
100VA - 50VA Per Secondary Winding						
0-9V, 0-9V @ 5.55A	D3070	**116-6206**	55.17	50.44	47.80	45.17
0-12V, 0-12V @ 4.17A	D3071	**116-6208**	55.17	50.44	47.80	45.17
Terminal shroud		**177-223**	0.64	– –	– –	– –
200VA - 100VA Per Secondary Winding						
0-12V, 0-12V @ 8.3A	D3079	**116-6210**	94.60	85.67	81.66	77.27
Terminal shroud		**177-223**	0.64	– –	– –	– –

110/220/240V Primary

6VA to 330VA

DAGNALL ELECTRONICS

6VA:	H = 37.5	W = 45	D = 40	FC = 53 x 4BA
12VA:	H = 50	W = 59	D = 51	FC = 74 x 4BA
20VA:	H = 57	W = 69	D = 52	FC = 84 x 4BA
50VA:	H = 60	W = 79	D = 62	FC = 94 x 4BA
75VA:	H = 73	W = 88	D = 88	FC = 101.6 x 2BA
100VA:	H = 75	W = 89	D = 75	FC = 57 x 43.5 x 2BA
200VA:	H = 84	W = 96	D = 85	FC = 68 x 60 x 2BA

Note: Connections to the 330VA clamp (not shown) is via input and output terminal blocks.

A range of low voltage mains transformers with independent primary windings, which can be connected in series for 220V or 240V, or in parallel for 110V operation. Primary and secondary connections are 0.1" pitch. The double bobbin construction eliminates the need for an interwinding screen and gives double insulation between primary and secondary winding. All transformers are manufactured to **BS415** and are 4kV flash tested. Terminal shrouds are available for each VA rating up to and including 100VA, two shrouds required per transformer.

223886

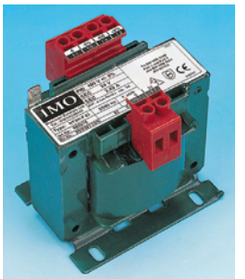
	Mftrs. List No.	Order Code	Price Each 1+	20+	50+	100+	+
6VA - 28% Typical Regulation							
0-4.5V, 0-4.5V @ 0.66A	D3628	**116-6327**	16.27	14.07	13.35	11.87	– –
0-9V, 0-9V @ 0.33A	D3630	**116-6328**	14.29	13.65	13.09	11.96	– –
0-12V, 0-12V @ 0.25A	D3631	**116-6329**	14.29	13.65	13.09	11.96	– –
0-15V, 0-15V @ 0.2A	D3632	**116-6330**	14.29	13.65	13.09	11.96	– –
Terminal shroud (for above)		**177-221**	0.51	– –	– –	– –	– –
12VA - 12% Typical Regulation							
0-9V, 0-9V @ 0.66A	D3639	**116-6331**	20.24	17.53	16.55	15.68	– –
0-12V, 0-12V @ 0.5A	D3641	**116-6332**	17.30	16.63	15.95	14.59	– –
0-15V, 0-15V @ 0.4A	D3642	**116-6333**	17.30	16.63	15.95	14.59	– –
0-18V, 0-18V @ 0.33A	D3643	**116-6334**	20.24	17.53	16.55	15.68	– –
0-20V, 0-20V @ 0.3A	D3644	**116-6336**	20.24	17.53	16.55	15.68	– –
0-24V, 0-24V @ 0.25A	D3645	**116-6337**	20.24	17.53	16.55	15.68	– –
Terminal shroud (for above)		**177-222**	0.58	– –	– –	– –	– –
20VA - 7.5% Typical Regulation							
0-9V, 0-9V @ 1.1A	D3649	**116-6338**	26.54	23.01	21.70	19.93	– –
0-12V, 0-12V @ 0.8A	D3651	**116-6339**	26.54	23.01	21.70	19.93	– –
0-15V, 0-15V @ 0.6A	D3652	**116-6340**	26.35	22.96	21.73	19.89	– –
0-18V, 0-18V @ 1.1A	D3653	**116-6341**	26.54	22.96	21.73	19.89	– –
0-20V, 0-20V @ 0.5A	D3654	**116-6342**	26.54	22.96	21.73	19.89	– –
0-24V, 0-24V @ 0.42A	D3655	**116-6343**	26.54	23.01	21.70	19.93	– –
Terminal shroud (for above)		**177-222**	0.58	– –	– –	– –	– –
50VA - 9% Typical Regulation							
0-9V, 0-9V @ 2.7A	D3659	**116-6344**	29.74	28.46	27.33	25.01	– –
0-10V @ 5A	D3660	**116-6345**	26.03	23.42	21.95	– –	– –
0-12V, 0-12V @ 2A	D3661	**116-6346**	26.03	23.08	21.95	– –	– –
0-15V, 0-15V @ 1.6A	D3662	**116-6348**	26.03	23.42	21.95	– –	– –
0-18V, 0-18V @ 1.38A	D3663	**116-6349**	30.45	26.39	24.93	23.81	– –
0-20V, 0-20V @ 1.25A	D3664	**116-6351**	30.45	26.39	24.93	23.81	– –
0-24V, 0-24V @ 1A	D3665	**116-6352**	29.74	28.46	27.33	25.01	– –
Terminal shroud (for above)		**177-223**	0.64	– –	– –	– –	– –
75VA - 9% Typical Regulation							
0-9V, 0-9V @ 4.17A	D3668	**116-6353**	45.38	36.96	32.66	31.52	– –
0-12V, 0-12V @ 3.13A	D3669	**116-6354**	45.38	36.96	32.66	31.53	– –
0-15V, 0-15V @ 2.5A	D3670	**116-6355**	45.38	36.96	32.66	31.53	– –
0-18V, 0-18V @ 2.08A	D3671	**116-6356**	45.38	36.96	32.66	31.53	– –
0-20V, 0-20V @ 1.88A	D3672	**116-6357**	45.38	36.96	32.66	31.53	– –
0-24V, 0-24V @ 1.56A	D3673	**116-6358**	45.38	36.96	32.66	31.52	– –
Terminal shroud (for above)		**177-223**	0.64	– –	– –	– –	– –
100VA - 8% Typical Regulation							
0-12V, 0-12V @ 4.1A	D3679	**116-6361**	53.00	50.75	48.76	44.55	– –
0-15V, 0-15V @ 3.3A	D3680	**116-6362**	53.00	50.75	48.76	44.55	– –
0-18V, 0-18V @ 2.7A	D3681	**116-6363**	70.40	61.00	57.62	53.00	– –
0-20V, 0-20V @ 2.5A	D3682	**116-6364**	70.40	61.00	57.62	53.00	– –
0-24V, 0-24V @ 2A	D3683	**116-6365**	70.40	61.00	57.62	53.00	– –
Terminal shroud (for above)		**177-223**	0.64	– –	– –	– –	– –
200VA - 5% Typical Regulation							
0-9V, 0-9V @ 11A	D3687	**116-6366**	141.08	123.40	107.64	92.36	– –
0-12V, 0-12V @ 8.3A	D3688	**116-6367**	141.08	123.40	107.64	92.36	– –
0-15V, 0-15V @ 6.6A	D3689	**116-6368**	141.08	123.40	107.64	92.36	– –
0-20V, 0-20V @ 5A	D3691	**116-6369**	141.08	123.40	107.64	92.36	– –
0-24V, 0-24V @ 4.1A	D3692	**116-6370**	141.08	123.40	107.64	92.36	– –

Control Panel

Single 230V/400V Primary

MTSNP Series

IMO



- Single phase control transformer manufactured to **VDE0551**
- Can be used as an isolating or safety transformer to **EN60742**
- **UL** and **CUL** recognised
- Fully dip impregnated
- Isolation to **T40/B**

Rating	H	W	D	Rating	H	W	D
50VA	79	66	79	400VA	131	120	138
63VA	85	78	76	500VA	131	120	158
100VA	90	84	80	800VA	153	150	150
160VA	101	96	94	1000VA	153	150	176
250VA	101	96	144				

Primary Voltages: 400V/230V ±5% **Secondary Voltages:** 24V/110V/230V

223856

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Rating	Mftrs. List No.	Order Code	Price Each 1+	5+	10+	25+	+
230/24V ac							
50VA	MTSNP05023024	**993-8354**	59.31	54.28	51.42	45.70	– –
63VA	MTSNP06323024	**993-8362**	62.14	56.84	53.85	47.87	– –
100VA	MTSNP10023024	**993-8370**	70.56	64.55	61.13	54.34	– –
160VA	MTSNP16023024	**993-8389**	88.47	80.93	76.67	68.15	– –
250VA	MTSNP25023024	**993-8397**	109.20	103.74	98.28	87.36	– –
400VA	MTSNP40023024	**993-8400**	150.83	140.50	133.09	118.30	– –
500VA	MTSNP50023024	**993-8419**	185.97	173.23	164.09	145.86	– –
230/110V ac							
50VA	MTSNP050230110	**993-8427**	59.31	54.28	51.42	45.70	– –
63VA	MTSNP063230110	**993-8435**	62.14	56.84	53.85	47.87	– –
100VA	MTSNP100230110	**993-8443**	71.27	65.20	61.74	54.88	– –
160VA	MTSNP160230110	**993-8451**	88.47	80.93	76.67	68.15	– –
250VA	MTSNP250230110	**993-8460**	109.49	103.74	98.28	87.36	– –
400VA	MTSNP400230110	**993-8478**	150.83	140.50	133.09	118.30	– –
500VA	MTSNP500230110	**993-8486**	185.97	173.23	164.09	145.86	– –
800VA	MTSNP800230110	**993-8494**	276.25	262.44	248.63	221.00	– –
1000VA	MTSNP1000230110	**993-8508**	357.50	339.63	321.75	286.00	– –
400/110V ac							
50VA	MTSNP050400110	**993-8516**	59.31	54.28	51.42	45.70	– –
100VA	MTSNP100400110	**993-8532**	70.56	64.55	61.13	54.34	– –
160VA	MTSNP160400110	**993-8540**	88.47	80.93	76.67	68.15	– –
250VA	MTSNP250400110	**993-8559**	109.20	103.74	98.28	87.36	– –
400VA	MTSNP400400110	**993-8567**	150.83	140.50	133.09	118.30	– –
800VA	MTSNP800400110	**993-8583**	276.25	262.44	248.63	221.00	– –
1000VA	MTSNP1000400110	**993-8591**	357.50	339.63	321.75	286.00	– –
400/230V ac							
50VA	MTSNP050400230	**993-8605**	59.31	54.28	51.42	45.70	– –
100VA	MTSNP100400230	**993-8613**	70.56	64.55	61.13	54.34	– –
160VA	MTSNP160400230	**993-8621**	88.47	80.93	76.67	68.15	– –
250VA	MTSNP250400230	**993-8630**	109.20	103.74	98.28	87.36	– –
400VA	MTSNP400400230	**993-8648**	156.62	– –	– –	– –	– –
500VA	MTSNP500400230	**993-8656**	185.97	173.23	164.09	145.86	– –
800VA	MTSNP800400230	**993-8664**	276.25	262.44	248.63	221.00	– –
1000VA	MTSNP1000400230	**993-8672**	357.50	339.63	321.75	286.00	– –

415V Primary

24V, 110V or 240V Secondary

MOELLER

415V primary transformers for use in control panels in conjunction with relay/contactor coils, indicator lamps etc.

- Meets 3 different transformer specifications:-
  - Control transformer to **IEC(EN60) 989**
  - Safety transformer to **IEC(EN60) 742**
  - Isolating transformer to **IEC(EN60) 742**
- **UL** recognised and **CSA** Approval
- Permanently isolated windings
- Reinforced Insulation
- Completely vacuum-varnish impregnated
- Climatic proofed
- Primary voltage 415V ac ±5%
- Secondary voltages 24, 110, 240V ac
- Suitable for use within the scope of **IEC(EN60) 204-1**
- Select by standard rating for normal applications, or by short-time rating for applications where only a few devices are operated simultaneously leading to a low continuous VA requirement.

i.e. Total "hold on" VA of each component + "pull in" VA of highest rated component x 0.8. e.g. 3 contactors each having a "hold on" of 8.5VA and a "pull in" of 60VA, total = (3 x 8.5 + 60) x 0.8 = 68.4VA. Transformer rating required = 100VA.

415/24V ac

Standard Rating VA	Short Time Rating VA	Dimensions H	W	D	Mftrs. List No.	Order Code
60	130	77	85	87	ST10,06 415/24	697-023
100	240	91	85	87	ST10,1 415/24	697-035
160	360	100	85	87	ST10,16 415/24	697-047
200	440	85	100	108	ST10,2 415/24	697-059

Standard Rating	Order Code	Price Each 1+	5+	10+	25+	+
60VA	**697-023**	136.50	127.30	119.11	105.65	– –
100VA	**697-035**	156.00	143.39	134.13	122.62	– –
160VA	**697-047**	195.00	181.77	170.04	150.85	– –
200VA	**697-059**	214.50	199.91	187.01	168.52	– –

415/110V ac

Standard Rating VA	Short Time Rating VA	Dimensions H	W	D	Mftrs. List No.	Order Code
60	130	77	85	87	ST10,06 415/110	697-060
100	240	91	85	87	ST10,1 415/110	697-072
160	360	100	85	87	ST10,16 415/110	697-084
200	440	85	106	108	ST10,2 415/110	697-096
250	600	94	106	108	ST10,25 415/110	697-102
400	1100	101	121	115	ST10,4 415/110	697-126
500	1600	121	121	115	ST10,5 415/110	697-138
800	2400	125	151	141	ST10,8 415/110	697-151
1000	2800	121	151	141	ST11,0 415/110	697-163

Standard Rating	Order Code	Price Each 1+	5+	10+	25+	+
60VA	**697-060**	136.50	127.30	119.11	107.32	– –
100VA	**697-072**	156.00	143.39	134.13	122.62	– –
160VA	**697-084**	195.00	181.77	170.04	153.22	– –
200VA	**697-096**	214.50	199.91	187.01	168.52	– –
250VA	**697-102**	247.00	230.17	215.31	194.04	– –
400VA	**697-126**	341.25	317.92	297.41	268.82	– –
500VA	**697-138**	403.00	375.44	351.20	315.64	– –

415/240V ac

Standard Rating VA	Short Time Rating VA	Dimensions H	W	D	Mftrs. List No.	Order Code
60	130	77	85	87	ST10,06 415/240	697-175
100	240	91	85	87	ST10,1 415/240	697-187
160	360	100	85	87	ST10,16 415/240	697-199
200	440	85	106	108	ST10,2 415/240	697-205

223912

Standard Rating	Order Code	Price Each 1+	5+	10+	25+	+
60VA	**697-175**	136.50	127.30	119.11	107.32	– –
100VA	**697-187**	156.00	143.39	134.13	122.62	– –
160VA	**697-199**	195.00	181.77	170.04	153.22	– –
200VA	**697-205**	214.50	199.91	187.01	168.42	– –

Auto

50 - 1000VA

DAGNALL ELECTRONICS

A range of auto transformers manufactured to **BS2234** and **BS171.** They are fully shrouded and have tappings for 0-110-220-240V, except 50VA model which has taps at 0-115-230V. These transformers step-up or step-down mains voltages at 50/60Hz. They do **not** provide isolation from the mains.

VA Rating	Dimensions H	W	D	Fixing Centres	Mftrs. List No.	Order Code
50	69	56	77	45 x 40 x 4 dia	AUTO 50	116-6376
100	97	80	106	64 x 50 x 4 dia	AUTO 100	116-6377
150	97	80	118	64 x 64 x 4 dia	AUTO 150	116-6379
250	116	96	116	77 x 66 x 6.5 dia	AUTO 250	116-6380
500	135	113	137	92 x 70 x 6.5 dia	AUTO 500	116-6381
1000	135	113	181	92 x 112 x 6.5 dia	AUTO 1000	116-6382

223919

VA Rating	Mftrs. List No.		Order Code	Price Each 1+	5+	10+	25+	+
50	AUTO 50	D3704	**116-6376**	70.32	64.52	59.11	52.79	– –
100	AUTO 100	D3705	**116-6377**	82.88	79.43	76.29	69.70	– –
150	AUTO 150	D3706	**116-6379**	110.17	101.17	95.91	85.27	– –
250	AUTO 250	D3707	**116-6380**	123.52	117.55	109.35	97.46	– –
500	AUTO 500	D3708	**116-6381**	145.36	138.33	129.27	115.18	– –
1000	AUTO 1000	D3709	**116-6382**	265.43	252.36	237.33	211.15	– –

Toroidal

Installation Recommendations

* Each transformer is supplied with a dished washer, protection pads and bolt for easy single hole fixing. The protection pads should be fitted one above and one below the transformer with the dished washer on top of the upper pad. Tighten the bolt firmly but do not overtighten as this will cause crushing of the windings and possibly shorting turns.
* = With exception of the miniature and enclosed ranges of toroidals.

Note: Under no circumstances should both ends of the fixing bolt be allowed to come simultaneously into contact with metal chassis or framework so that an electrical path is formed through the bolt in the centre of the transformer via the external framework. This would constitute a shorting and would cause irreparable damage.

223905

Miniature Toroids

multicomp

Lead L=150, stripped and tinned ends.

A high quality range of miniature open style toroidal transformers with flying leads. Featuring a single primary winding tapped at 115 and 230v 50/60Hz, and dual secondary windings. Secondary windings can be connected in series or parallel or used independently.

- High quality construction
- Extremely low radiated magnetic field, suitable for sensitive electronics
- Double insulated primary leads
- Resin filled centre with M4 clear mounting hole
- Flexible lead outs can be trimmed to any length without the need of enamel removal
- Suitable for use in low power equipment
- Designed, tested and manufactured in accordance with **EN60742**, **EN60065** and **EN60950**.
- 100% electrical and flash tested

RoHS ● Compliant ▲ Non-compliant ++ Limited stock - RoHS replacement available

Load VA	Regulation %	Temperature rise °C	Dimensions Dia	H	Weight kg
1.6	21	10	42	23	0.13
3.2	20	16	43	24	0.14
5	18	18	50	24	0.17
7	19	25	51	24	0.195

Max. ambient temperature 40°C.
Overall temperature rating Class A (105°C).
Secondary voltage tolerance ±1% at nom. input and full resistive load
No mounting screw supplied.

249225

	Order Code	Price Each 1+	10+	50+	100+	+
1.6VA						
0-7V, 0-7V @ 0.114A	**953-1270**	22.69	21.00	20.12	18.36	– –
0-9V, 0-9V @ 0.089A	**953-1297**	22.69	21.00	20.12	18.36	– –
0-12V, 0-12V @ 0.067A	**953-1319**	22.69	21.00	20.12	18.36	– –
0-15V, 0-15V @ 0.053A	**953-1343**	22.69	21.00	20.12	18.36	– –
0-22V, 0-22V @ 0.036A	**953-1360**	22.69	21.00	20.12	18.36	– –
3.2VA						
0-7V, 0-7V @ 0.229A	**953-1386**	22.98	21.19	20.38	18.59	– –
0-9V, 0-9V @ 0.178A	**953-1408**	18.25	16.84	16.20	15.50	– –
0-12V, 0-12V @ 0.133A	**953-1424**	22.98	21.19	20.38	18.59	– –
0-15V, 0-15V @ 0.2107A	**953-1440**	22.98	21.19	20.38	18.59	– –
0-18V, 0-18V @ 0.089A	**953-1467**	18.25	16.84	16.20	15.50	– –
5VA						
0-7V, 0-7V @ 0.357A	**953-1475**	24.15	22.33	21.42	19.57	– –
0-9V, 0-9V @ 0.278A	**953-1491**	24.15	22.33	21.42	19.57	– –
0-12V, 0-12V @ 0.208A	**953-1513**	24.15	22.33	21.42	19.57	– –
0-15V, 0-15V @ 0.167A	**953-1530**	19.18	17.74	17.04	16.34	– –
0-18V, 0-18V @ 0.139A	**953-1548**	24.15	22.33	21.42	19.57	– –
0-22V, 0-22V @ 0.114A	**953-1564**	19.18	17.74	17.04	16.34	– –
7VA						
0-7V, 0-7V @ 0.5A	**953-1572**	25.81	23.82	22.88	20.96	– –
0-9V, 0-9V @ 0.389A	**953-1580**	25.81	23.82	22.88	20.96	– –
0-12V, 0-12V @ 0.292A	**953-1599**	25.81	23.82	22.88	20.96	– –
0-15V, 0-15V @ 0.233A	**953-1602**	25.81	23.82	22.88	20.96	– –
0-18V, 0-18V @ 0.194A	**953-1610**	25.81	23.82	22.88	20.96	– –
0-22V, 0-22V @ 0.159A	**953-1629**	25.81	23.82	22.88	20.96	– –

115V/230V ac Twin Primary

multicomp

- Double insulated primary leadouts
- Flexible leadouts can be trimmed to any length without the need of removal of enamel
- Design, manufactured and tested in accordance with **EN60742**, **EN60065** and **EN60950**
- 100% electrical and flash tested
- Supplied with mounting dish, bolt and 2 foam pads

Lead L=150mm, stripped and tinned ends

Load VA	Regulation %	Temperature rise °C	Dimensions Dia	H	Fixing Bolt mm	Weight kg
15	13.9	26	60	28	M5 x 40	0.3
30	13.7	43	67	28	M5 x 40	0.5
50	11.8	48	76	30	M5 x 40	0.6
60	11.1	48	85	30	M6 x 50	0.8
80	11	52	87.5	39	M6 x 50	1.0
100	8	49	85	41	M6 x 50	1.1
120	8.5	52	89	42	M6 x 50	1.3
160	6.7	52	100	42	M6 x 60	1.6
225	7	56	110	51	M6 x 60	2.2
250	6.4	52	119	49	M6 x 60	2.4
300	6	50	119	49	M6 x 60	2.8
500	5	53	136	59	M8 x 75	4.3
625	5	59	139	71	8 x 80	5.2
800	4	59	163	59	M8 x 80	6.3
1000	4	60	167	70.5	M8 x 80	7.5

Max. ambient temperature 40°C.
Overall temperature rating Class A (105°C).
Secondary voltage tolerance ±1% at nom. input and full resistive load

249266

	Order Code	Price Each 1+	10+	20+	50+	+
15VA						
0-6V, 0-6V @ 1.25A	**953-0231**	24.47	23.24	21.26	16.41	– –
0-9V, 0-9V @ 0.83A	**953-0240**	24.47	23.24	21.26	16.41	– –
0-12V, 0-12V @ 0.63A	**953-0258**	24.47	23.24	21.26	16.41	– –
0-15V, 0-15V @ 0.5A	**953-0266**	24.47	23.24	21.26	16.41	– –
0-18V, 0-18V @ 0.42A	**953-0274**	24.47	23.24	21.26	16.41	– –
30VA						
0-6V, 0-6V @ 2.5A	**953-0282**	27.69	26.29	24.15	18.23	– –
0-9V, 0-9V @ 1.67A	**953-0290**	27.69	26.29	24.15	18.23	– –
0-12V, 0-12V @ 1.25A	**953-0304**	27.69	26.29	24.15	18.23	– –
0-15V, 0-15V @ 1A	**953-0312**	27.69	26.29	24.15	18.23	– –
0-18V, 0-18V @ 0.83A	**953-0320**	27.69	26.29	24.15	18.23	– –
0-25V, 0-25V @ 0.6A	**953-0339**	27.69	26.29	24.15	18.23	– –
50VA						
0-9V, 0-9V @ 2.78A	**953-0355**	24.31	23.07	20.96	18.37	– –
0-6V, 0-6V @ 4.17A	**953-0347**	30.58	29.06	26.39	20.05	– –
0-12V, 0-12V @ 2.08A	**953-0363**	30.58	29.06	26.39	20.05	– –
0-15V, 0-15V @ 1.67A	**953-0371**	30.58	29.06	26.39	20.05	– –
0-18V, 0-18V @ 1.39A	**953-0380**	30.58	29.06	26.39	20.05	– –
0-25V, 0-25V @ 1A	**953-0398**	30.58	29.06	26.39	20.05	– –
0-55V, 0-55V @ 0.45A	**953-0401**	30.58	29.06	26.39	20.05	– –

	Order Code	Price Each 1+	10+	20+	50+	+
60VA						
0-9V, 0-9V @ 3.33A	**953-0410**	33.48	31.82	28.67	21.91	– –
0-12V, 0-12V @ 2.5A	**953-0428**	33.48	31.82	28.67	21.91	– –
0-15V, 0-15V @ 2A	**953-0436**	33.48	31.82	28.67	21.91	– –
0-18V, 0-18V @ 1.67A	**953-0444**	33.48	31.82	28.67	21.91	– –
0-25V, 0-25V @ 1.2A	**953-0460**	33.48	31.82	28.67	21.91	– –
80VA						
0-9V, 0-9V @ 4.44A	**953-2692**	35.39	33.64	29.84	22.91	– –
0-12V, 0-12V @ 3.33A	**953-2706**	35.39	33.64	29.84	22.91	– –
0-15V, 0-15V @ 2.67A	**953-2714**	35.39	33.64	29.84	22.91	– –
0-18V, 0-18V @ 2.22A	**953-2722**	35.39	33.64	29.84	22.91	– –
0-25V, 0-25V @ 1.6A	**953-2749**	35.39	33.64	29.84	22.91	– –
0-55V, 0-55V @ 0.73A	**953-2765**	35.39	33.64	29.84	22.91	– –
100VA						
0-12V, 0-12V @ 4.17A	**953-0479**	37.34	35.46	31.07	23.99	– –
0-15V, 0-15V @ 3.33A	**953-0487**	37.34	35.46	31.07	23.99	– –
0-18V, 0-18V @ 2.78A	**953-0495**	37.34	35.46	31.07	23.99	– –
0-25V, 0-25V @ 2A	**953-0509**	37.34	35.46	31.07	23.99	– –
120VA						
0-12V, 0-12V @ 5A	**953-0517**	41.21	39.13	33.48	26.07	– –
0-15V, 0-15V @ 4A	**953-0525**	41.21	39.13	33.48	26.07	– –
0-18V, 0-18V @ 3.33A	**953-0541**	41.21	39.13	33.48	26.07	– –
0-25V, 0-25V @ 2.4A	**953-0568**	41.21	39.13	33.48	26.07	– –
0-55V, 0-55V @ 1.09A	**953-0592**	41.21	39.13	33.48	26.07	– –
160VA						
0-12V, 0-12V @ 6.67A	**953-0606**	47.65	45.24	38.32	30.65	– –
0-15V, 0-15V @ 5.33A	**953-0622**	47.65	45.24	38.32	30.65	– –
0-18V, 0-18V @ 4.44A	**953-0649**	47.65	45.24	38.32	30.65	– –
0-25V, 0-25V @ 3.2A	**953-0665**	47.65	45.24	38.32	30.65	– –
0-30V, 0-30V @ 2.67A	**953-0690**	47.65	45.24	38.32	30.65	– –
0-55V, 0-55V @ 1.45A	**953-0703**	47.65	45.24	38.32	30.65	– –
225VA						
0-12V, 0-12V @ 9.38A	**953-2790**	50.70	48.20	41.54	39.48	– –
0-15V, 0-15V @ 7.5A	**953-2811**	50.70	48.20	41.54	36.22	– –
0-18V, 0-18V @ 6.25A	**953-2838**	50.70	48.20	41.54	39.48	– –
0-25V, 0-25V @ 4.5A	**953-2846**	50.70	48.20	41.54	39.48	– –
0-30V, 0-30V @ 3.75A	**953-2862**	50.70	48.20	41.54	39.48	– –
0-55V, 0-55V @ 2.05A	**953-2889**	50.70	48.20	41.54	39.48	– –
250VA						
0-12V, 0-12V @ 10.42A	**953-0720**	53.76	51.09	44.75	40.78	– –
0-18V, 0-18V @ 6.94A	**953-0754**	53.76	51.09	44.75	40.87	– –
0-25V, 0-25V @ 5A	**953-0770**	53.76	51.09	44.75	40.87	– –
0-30V, 0-30V @ 4.17A	**953-0797**	53.76	51.09	44.75	40.87	– –
0-35V, 0-35V @ 3.57A	**953-0800**	53.76	51.09	44.75	40.83	– –
0-40V, 0-40V @ 3.13A	**953-0835**	53.76	51.09	44.75	40.83	– –
0-45V, 0-45V @ 2.78A	**953-0851**	53.76	51.09	44.75	37.84	– –
0-50V, 0-50V @ 2.5A	**953-0886**	53.76	51.09	44.75	41.06	– –
300VA						
0-25V, 0-25V @ 6A	**953-0916**	59.87	56.88	51.19	46.96	– –
0-30V, 0-30V @ 5A	**953-0932**	59.87	56.88	51.19	46.50	– –
0-35V, 0-35V @ 4.28A	**953-0940**	59.87	56.88	51.19	46.96	– –
0-55V, 0-55V @ 2.73A	**953-0967**	59.87	56.88	51.19	44.59	– –
500VA						
0-25V, 0-25V @ 10A	**953-2900**	83.04	78.88	73.71	60.45	– –
0-30V, 0-30V @ 8.33A	**953-2927**	83.04	78.88	73.71	60.45	– –
0-35V, 0-35V @ 7.14A	**953-2951**	83.04	78.88	73.71	60.45	– –
0-45V, 0-45V @ 5.56A	**953-2986**	83.04	78.88	73.71	60.45	– –
0-50V, 0-50V @ 5A	**953-3001**	65.96	62.64	60.45	– –	– –
0-55V, 0-55V @ 4.55A	**953-3028**	83.04	78.88	73.71	60.45	– –
625VA						
0-40V, 0-40V @ 7.81A	**953-3052**	115.86	111.05	106.67	97.40	– –
0-50V, 0-50V @ 6.25A	**953-3079**	115.86	111.05	106.67	97.40	– –
0-55V, 0-55V @ 5.68A	**953-3095**	115.86	111.05	106.67	97.40	– –
800VA						
0-55V, 0-55V @ 7.27A	**953-3117**	138.94	133.19	127.95	116.77	– –
1000VA						
0-40V, 0-40V @ 12.5A	**953-3141**	154.90	148.46	142.64	130.23	– –
0-50V, 0-50V @ 10A	**953-3176**	154.90	148.46	142.64	130.23	– –
0-55V, 0-55V @ 9.09A	**953-3192**	154.90	148.46	142.64	130.23	– –

230V ac Single Primary

multicomp

A high quality range of open style toroidal transformers with flying leads. Featuring a single primary winding rated at 230V 50/60Hz, and dual secondary windings. Secondary windings can be connected in series or parallel or used independently.
Lead L=150, stripped and tinned ends.

- High quality construction
- High efficiency and smaller size compared to conventional EI transformers
- Extremely low radiated magnetic field, suitable for sensitive electronics
- Flexible lead outs can be trimmed to any length without the need of enamel removal
- Designed, tested and manufactured in accordance with **EN60742**, **EN60065** and **EN60950**.
- UL recognised
- 100% electrical and flash tested

Max. ambient temperature 40°C.
Overall temperature rating Class A (105°C).
Secondary voltage tolerance ±1% at nom. input and full resistive load
No mounting screw supplied.

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

Load VA	Regulation %	Temperature rise °C	Dimensions Dia	Dimensions H	Fixing Bolt mm	Weight kg
15	14	27	64.5	30.5	M5 x 40	0.3
30	14	42	73	31	M5 x 40	0.5
50	13	50	81	34.5	M5 x 40	0.6
80	11	52	87.5	39	M6 x 50	1.0
120	9	54	95	47	M6 x 50	1.3
160	8	54	105	47	M6 x 60	1.6
225	7	56	110	51	M6 x 60	2.2
300	6	56	125	54	M6 x 60	2.8
500	5	53	136	59	M8 x 75	4.3
625	5	59	139	71	M8 x 80	5.2
800	4	59	163	59	M8 x 80	6.3
1000	4	60	167	70.5	M8 x 80	7.5

249250

	Order Code	Price Each 1+	10+	25+	50+	+
15VA						
0-6V, 0-6V @ 1.25A	**953-2056**	25.35	23.17	21.19	16.38	– –
0-9V, 0-9V @ 0.83A	**953-2064**	25.35	23.17	21.19	16.38	– –
0-12V, 0-12V @ 0.63A	**953-2099**	25.35	23.17	21.19	16.38	– –
0-15V, 0-15V @ 0.5A	**953-2102**	25.35	23.17	21.19	16.38	– –
0-18V, 0-18V @ 0.42A	**953-2110**	25.35	23.17	21.19	16.38	– –
30VA						
0-6V, 0-6V @ 2.5A	**953-2129**	28.67	26.26	24.12	18.20	– –
0-9V, 0-9V @ 1.67A	**953-2137**	28.67	26.26	24.12	18.20	– –
0-12V, 0-12V @ 1.25A	**953-2145**	28.67	26.26	24.12	18.20	– –
0-15V, 0-15V @ 1A	**953-2161**	28.67	26.26	24.12	18.20	– –
0-18V, 0-18V @ 0.83A	**953-2170**	28.67	26.26	24.12	18.20	– –
0-25V, 0-25V @ 0.6A	**953-2188**	28.67	26.26	24.12	18.20	– –
50VA						
0-6V, 0-6V @ 4.17A	**953-2196**	34.68	31.75	28.60	21.84	– –
0-9V, 0-9V @ 2.78A	**953-2200**	34.68	31.75	28.60	21.84	– –
0-12V, 0-12V @ 2.08A	**953-2218**	34.68	31.75	28.60	21.84	– –
0-15V, 0-15V @ 1.67A	**953-2226**	34.68	31.75	28.60	21.84	– –
0-18V, 0-18V @ 1.39A	**953-2234**	34.68	31.75	28.60	21.84	– –
0-25V, 0-25V @ 1A	**953-2242**	34.68	31.75	28.60	21.84	– –
0-55V, 0-55V @ 0.45A	**953-2250**	34.68	31.75	28.60	21.84	– –
80VA						
0-9V, 0-9V @ 4.44A	**953-2269**	39.36	36.01	31.82	22.04	– –
0-12V, 0-12V @ 3.33A	**953-2277**	39.36	36.01	31.82	21.84	– –
0-15V, 0-15V @ 2.67A	**953-2285**	39.36	36.01	31.82	22.04	– –
0-18V, 0-18V @ 2.22A	**953-2293**	39.36	36.01	31.82	22.04	– –
0-25V, 0-25V @ 1.6A	**953-2307**	39.36	36.01	31.82	22.04	– –
0-55V, 0-55V @ 0.73A	**953-2315**	31.27	28.59	25.28	21.62	– –
120VA						
0-12V, 0-12V @ 5A	**953-2323**	42.67	39.07	33.41	26.03	– –
0-15V, 0-15V @ 4A	**953-2331**	33.92	31.04	26.55	24.69	– –
0-18V, 0-18V @ 3.33A	**953-2340**	42.67	39.07	33.41	26.03	– –
0-25V, 0-25V @ 2.4A	**953-2358**	42.67	39.07	33.41	26.03	– –
0-55V, 0-55V @ 1.09A	**953-2366**	33.92	31.04	26.55	24.69	– –
160VA						
0-12V, 0-12V @ 6.67A	**953-2374**	49.34	45.14	38.22	30.58	– –
0-15V, 0-15V @ 5.33A	**953-2382**	49.34	45.14	38.22	30.58	– –
0-18V, 0-18V @ 4.44A	**953-2390**	39.21	35.86	30.37	28.09	– –
0-25V, 0-25V @ 3.2A	**953-2404**	49.34	45.14	38.22	30.58	– –
0-30V, 0-30V @ 2.67A	**953-2412**	49.34	45.14	38.22	30.58	– –
0-55V, 0-55V @ 1.45A	**953-2420**	49.34	45.14	38.22	30.58	– –
225VA						
0-12V, 0-12V @ 9.38A	**953-2439**	55.67	50.96	44.66	37.43	– –
0-15V, 0-15V @ 7.5A	**953-2447**	44.23	40.48	36.22	– –	– –
0-18V, 0-18V @ 6.25A	**953-2455**	55.67	50.96	44.66	39.48	– –
0-25V, 0-25V @ 4.5A	**953-2463**	55.67	50.96	44.66	36.82	– –
0-30V, 0-30V @ 3.75A	**953-2471**	44.23	40.48	35.46	35.43	– –
0-55V, 0-55V @ 2.05A	**953-2480**	55.67	50.96	44.66	39.48	– –
300VA						
0-25V, 0-25V @ 6A	**953-2498**	62.01	56.75	51.06	46.96	– –
0-30V, 0-30V @ 5A	**953-2501**	62.01	56.75	51.06	46.96	– –
0-35V, 0-35V @ 6A	**953-2510**	62.01	56.75	51.06	43.03	– –
0-55V, 0-55V @ 2.73A	**953-2528**	62.01	56.75	51.06	47.01	– –
500VA						
0-25V, 0-25V @ 10A	**953-2536**	86.03	78.72	73.55	69.52	– –
0-30V, 0-30V @ 8.33A	**953-2544**	68.33	62.54	60.45	– –	– –
0-35V, 0-35V @ 7.14A	**953-2552**	86.03	78.72	73.55	69.52	– –
0-40V, 0-40V @ 6.25A	**953-2560**	86.03	78.72	73.55	69.52	– –
0-45V, 0-45V @ 5.56A	**953-2579**	86.03	78.72	73.55	69.52	– –
0-50V, 0-50V @ 5A	**953-2587**	86.03	78.72	73.55	69.52	– –
0-55V, 0-55V @ 4.55A	**953-2595**	86.03	78.72	73.55	69.52	– –
625VA						
0-45V, 0-45V @ 6.94A	**953-2609**	115.86	111.05	106.67	97.40	– –
0-55V, 0-55V @ 5.68A	**953-2617**	115.86	111.05	106.67	97.40	– –
800VA						
0-40V, 0-40V @ 10A	**953-2625**	138.94	133.19	127.95	116.77	– –
0-50V, 0-50V @ 8A	**953-2633**	138.94	133.19	127.95	116.77	– –
0-55V, 0-55V @ 7.27A	**953-2641**	138.94	133.19	127.95	116.77	– –
1000VA						
0-40V, 0-40V @ 12.5A	**953-2650**	154.90	148.46	142.64	130.23	– –
0-45V, 0-45V @ 11.11A	**953-2668**	154.90	148.46	142.64	130.23	– –
0-50V, 0-50V @ 10A	**953-2676**	154.90	148.46	142.64	130.23	– –
0-55V, 0-55V @ 9.09A	**953-2684**	154.90	148.46	142.64	130.23	– –

Encapsulated Toroids

multicomp

Lead L=150, stripped and tinned ends

A high quality range of fully encapsulated toroidal transformers with flying leads. Featuring a single primary winding rated at 230V 50/60Hz, and dual secondary windings. Secondary windings can be connected in series or parallel or used independently

- High quality construction
- High efficiency and smaller size compared to conventional EI transformers
- Extremely low radiated magnetic field, suitable for sensitive electronics
- Double insulated primary leads
- Flexible lead outs can be trimmed to any length without the need of enamel removal
- Fully resin encapsulated in case
- Designed, tested and manufactured in accordance with **EN60742**, **EN60065** and **EN60950**.
- UL recognised
- 100% electrical and flash tested

Load VA	Regulation %	Temperature rise °C	Dimensions Dia	Dimensions H	Fixing Hole Dia. mm	Weight kg
15	16	35	62.4	34.5	5.1	0.3
30	12	36	81.5	39.1	5.1	0.6
50	11	40	87.3	42	5.1	0.8
80	10	47	96.7	44	6.1	1.1
120	7	42	104.2	52.1	6.1	1.6
160	7	45	115	53.2	6.1	2.0
225	6	48	125.4	52.4	6.1	2.5
300	5	50	125.4	65.3	6.1	3.2
500	5	55	147.1	64.7	8.2	4.6

Max. ambient temperature 40°C
Overall temperature rating Class A (105°C)
Secondary voltage tolerance ±1% at nom. input and full resistive load
No mounting screw supplied

249243

	Order Code	Price Each 1+	10+	25+	50+	+
15VA						
0-6V, 0-6V @ 1.25A	**953-1645**	28.47	26.26	25.25	23.04	– –
0-9V, 0-9V @ 0.83A	**953-1653**	22.63	20.86	20.05	19.18	– –
0-12V, 0-12V @ 0.63A	**953-1661**	28.47	26.26	25.25	23.04	– –
0-15V, 0-15V @ 0.5A	**953-1670**	28.47	26.26	25.25	23.04	– –
0-18V, 0-18V @ 4.2A	**953-1688**	28.47	26.26	25.25	23.04	– –
0-25V, 0-25V @ 0.3A	**953-1696**	28.47	26.26	25.25	23.04	– –
30VA						
0-6V, 0-6V @ 2.5A	**953-1700**	28.02	25.88	24.88	23.77	– –
0-9V, 0-9V @ 1.67A	**953-1718**	28.02	25.88	24.88	23.77	– –
0-15V, 0-15V @ 1A	**953-1726**	35.30	32.60	31.33	28.57	– –
0-18V, 0-18V @ 0.83A	**953-1742**	35.30	32.60	31.33	28.57	– –
0-25V, 0-25V @ 0.6A	**953-1750**	35.30	32.60	31.33	28.57	– –
50VA						
0-9V, 0-9V @ 2.78A	**953-1769**	36.82	33.96	32.70	29.80	– –
0-12V, 0-12V @ 2.08A	**953-1777**	36.82	33.96	32.70	29.80	– –
0-15V, 0-15V @ 1.67A	**953-1785**	36.82	33.96	32.70	29.80	– –
0-18V, 0-18V @ 1.39A	**953-1793**	29.23	26.98	25.98	25.58	– –
0-25V, 0-25V @ 1A	**953-1807**	36.82	33.96	32.70	29.80	– –
80VA						
0-9V, 0-9V @ 4.44A	**953-1815**	48.90	– –	– –	– –	– –
0-12V, 0-12V @ 3.33A	**953-1823**	48.72	44.88	43.16	39.42	– –
0-18V, 0-18V @ 2.22A	**953-1831**	48.72	44.88	43.16	39.42	– –
0-25V, 0-25V @ 1.6A	**953-1840**	48.72	44.88	43.16	39.42	– –
120VA						
0-12V, 0-12V @ 5A	**953-1858**	59.57	46.61	44.85	40.95	– –
0-15V, 0-15V @ 4A	**953-1874**	59.57	46.61	44.85	40.95	– –
0-18V, 0-18V @ 3.33A	**953-1882**	59.57	46.61	44.85	40.95	– –
0-25V, 0-25V @ 2.4A	**953-1890**	59.57	46.61	44.85	40.95	– –
160VA						
0-18V, 0-18V @ 4.44A	**953-1912**	48.68	44.83	42.13	– –	– –
0-25V, 0-25V @ 3.2A	**953-1920**	48.68	44.83	42.13	– –	– –
0-30V, 0-30V @ 2.67A	**953-1939**	61.30	56.45	51.45	47.13	– –
225VA						
0-12V, 0-12V @ 9.38A	**953-1947**	65.85	60.74	58.37	53.27	– –
0-15V, 0-15V @ 7.5A	**953-1955**	65.85	60.74	58.37	53.27	– –
0-18V, 0-18V @ 6.25A	**953-1963**	65.85	60.74	58.37	53.27	– –
0-25V, 0-25V @ 4.5A	**953-1971**	65.85	60.74	58.37	53.27	– –
0-30V, 0-30V @ 3.75A	**953-1980**	52.30	48.28	47.57	– –	– –
300VA						
0-25V, 0-25V @ 6A	**953-1998**	78.91	72.67	69.94	64.73	– –
0-30V, 0-30V @ 5A	**953-2005**	62.67	57.72	56.27	– –	– –
0-35V, 0-35V @ 4.29A	**953-2013**	78.91	72.67	69.94	64.73	– –
500VA						
0-35V, 0-35V @ 7.14A	**953-2030**	101.95	97.57	93.83	85.61	– –
0-40V, 0-40V @ 6.25A	**953-2048**	101.95	97.57	93.83	85.61	– –

115V/230V ac Twin Primary

Clairtronic

High quality open style toroidal transformers with twin 115V a.c. 50/60Hz primary windings for series 230V or parallel 115V connection. Twin secondary windings may be connected in series or parallel or used independently.

- Small size and low weight compared with traditional stacked laminated transformers
- Low induced noise (hum)
- Low level of radiated magnetic field
- Low iron loss
- Double insulated primary leads
- Flexible leadouts, stripped and tinned
- 100% electrical and flash testing
- CE marked
- Supplied with full mounting kit
- Designed, manufactured and tested in accordance with **EN60742, IEC742,**
- **UL** recognised

Rating	15VA	30VA	50VA	80VA	120VA	160VA	225VA	300VA	500VA	625VA	800VA	1000VA
Regulation %	15	15	13	12	10	7	7	6.5	6	4.5	4.4	3.9
Height	30	32	34	40	45	45	52	55	58	70	62	70
Diameter	60	71	80	87	92	103	115	124	135	142	168	172
Bolt size	M5	M5	M6	M6	M6	M6	M6	M6	M8	M8	M8	M8
Weight (kg)	0.45	0.55	0.8	1.15	1.5	1.75	2.4	2.75	4.6	5.2	6.3	7.5

● Compliant
● Non-compliant
+ Limited stock - RoHS replacement available

RoHS

248396

	Order Code	Price Each 1+	10+	20+	50+	+	+
15VA							
0-6V, 0-6V @ 1.25A	**430-1298**▲	29.93	28.21	27.63	25.38	– –	– –
0-12V, 0-12V @ 0.63A	**430-1316**▲	29.93	28.21	27.63	25.38	– –	– –
0-25V, 0-25V @ 0.3A	**430-1341**▲	29.93	28.21	27.63	25.38	– –	– –
30VA							
0-6V, 0-6V @ 2.5A	**430-1353**▲	33.64	31.72	31.04	28.54	– –	– –
0-9V, 0-9V @ 1.67A	**430-1365**▲	33.64	31.72	31.04	28.54	– –	– –
0-12V, 0-12V @ 1.25A	**430-1377**▲	33.64	31.72	31.04	28.54	– –	– –
0-15V, 0-15V @ 1A	**430-1389**▲	33.64	31.72	31.04	28.54	– –	– –
0-18V, 0-18V @ 0.83A	**430-1390**▲	33.64	31.72	31.04	28.54	– –	– –
0-25V, 0-25V @ 0.6A	**430-1407**▲	33.64	31.72	31.04	28.54	– –	– –
50VA							
0-6V, 0-6V @ 4.17A	**430-1419**▲	37.64	35.49	34.71	31.92	– –	– –
0-9V, 0-9V @ 2.78A	**430-1420**▲	37.64	35.36	34.45	31.92	– –	– –
0-12V, 0-12V @ 2.08A	**430-1432**▲	37.64	35.36	34.45	31.92	– –	– –
0-15V, 0-15V @ 1.67A	**430-1444**▲	37.64	35.36	34.45	31.92	– –	– –
0-18V, 0-18V @ 1.39A	**430-1456**▲	37.64	35.36	34.45	31.92	– –	– –
0-55V, 0-55V @ 0.45A	**430-1470**▲	37.64	35.36	34.45	31.92	– –	– –
80VA							
0-12V, 0-12V @ 3.33A	**430-1493**▲	45.53	42.97	42.06	38.68	– –	– –
0-15V, 0-15V @ 2.67A	**430-1500**▲	45.53	42.97	42.06	38.68	– –	– –
0-18V, 0-18V @ 2.22A	**430-1511**▲	45.53	42.97	42.06	38.68	– –	– –
0-25V, 0-25V @ 1.6A	**430-1523**▲	45.53	42.97	42.06	38.68	– –	– –
120VA							
0-12V, 0-12V @ 5A	**430-1547**▲	51.29	48.36	47.35	43.49	– –	– –
0-15V, 0-15V @ 4A	**430-1559**▲	49.66	47.58	47.35	43.49	– –	– –
0-18V, 0-18V @ 3.33A	**430-1560**▲	49.66	47.58	47.35	43.49	– –	– –
0-25V, 0-25V @ 2.4A	**430-1572**▲	49.66	47.58	47.35	43.49	– –	– –
0-30V, 0-30V @ 2A	**430-1584**▲	49.66	47.58	47.35	43.49	– –	– –
160VA							
0-12V, 0-12V @ 6.67A	**430-1602**▲	58.63	55.25	54.08	49.76	– –	– –
0-15V, 0-15V @ 5.33A	**430-1614**▲	58.63	55.25	54.08	49.76	– –	– –
0-18V, 0-18V @ 4.44A	**430-1626**▲	58.63	55.25	54.08	49.76	– –	– –
225VA							
0-15V, 0-15V @ 7.5A	**430-1675**▲	50.09	39.34	36.73	36.69	– –	– –
0-18V, 0-18V @ 6.25A	**430-1687**▲	68.02	64.16	62.79	57.66	– –	– –
0-25V, 0-25V @ 4.5A	**430-1699**▲	68.02	64.16	62.79	57.66	– –	– –
0-55V, 0-55V @ 2.05A	**430-1717**▲	50.09	39.34	36.73	36.69	– –	– –
300VA							
0-12V, 0-12V @ 12.5A	**430-1729**▲	77.22	71.31	68.51	64.06	– –	– –
0-15V, 0-15V @ 10A	**430-1730**▲	77.22	71.31	68.51	64.06	– –	– –
0-18V, 0-18V @ 8.33A	**430-1742**▲	77.22	71.31	68.51	64.06	– –	– –
0-25V, 0-25V @ 6A	**430-1754**▲	77.22	71.31	68.51	64.06	– –	– –
0-30V, 0-30V @ 5A	**430-1766**▲	77.22	71.31	68.51	64.06	– –	– –
0-35V, 0-35V @ 4.29A	**430-1778**▲	77.22	71.31	68.51	64.06	– –	– –
500VA							
0-35V, 0-35V @ 7.14A	**430-1810**▲	108.39	103.90	99.78	93.28	– –	– –

UK to USA Voltage Changers

150VA

A 150VA auto transformer designed to supply 110V ac from the 240V ac mains. Output is via an American style 2 pin socket and input is via 2 metres of mains cable fitted with a **BS1363** Uk 3 pin plug. Autoreset thermal trip within windings.

L = 110, W = 95, H = 77
FC 97.5 x 60 x 4mm dia.

Note: This unit does not provide mains isolation as the output shares a common neutral with the mains input. The output frequency is also unchanged.

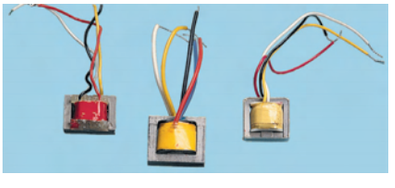
Input	240V ac 50Hz	Output	110V ac 50Hz
Regulation	5.5%	Weight	1.6kg

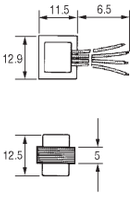
223906

Mftrs. List No.	Order Code	Price Each 1+	10+	20+
D2734	**116-6383**●	100.73	93.17	89.54

Audio Frequency

Isolation and Matching Transformers NEUTRIK





Professional audio transformers for multiple applications, audio-, studio-, and line inputs, very low distortion, excellent frequency response.

Source Load Impedance in	Turns Ratio	Max. Input Voltage THD ≤ 1%	THD ≤ 3%	Ripple 20Hz - 20KHz		Order Code
200/200Ω	1:1	940mV	980mV	Max. -1dB	Red mark	724-592
200/10KΩ	1:4	1050mV	1210mV	Max. -1dB	Yellow mark	724-609
200/50KΩ	1:3:10	880mV	1220mV	Max. -2dB	Orange mark	724-610

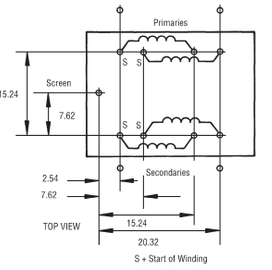
203854

Mftrs. List No.	Order Code	Price Each 1+	10+	25+	50+
NTE1	**724-592**●	25.11	21.78	19.77	18.15
NTE4	**724-609**●	25.89	22.53	20.46	18.69
NTE10/3	**724-610**●	28.23	24.45	22.20	20.37

PCB Mounting High Performance

Transformer
H = 22, W = 28, D = 23.

Screening can and cover
H = 23, W = 29, D = 24.



A range of high performance, resin encapsulated, printed circuit board mounting miniature audio transformers. The transformers feature dual input and output windings for series or parallel connection enabling a wide range of input and output impedances to be matched.

Ratings are 100mW @ 300Hz and 2.5mW @ 50Hz. All the transformers feature an internal screen which when used in conjunction with the external screening can (Order Code 117-2345) affords a 30dB reduction of external 50Hz field.

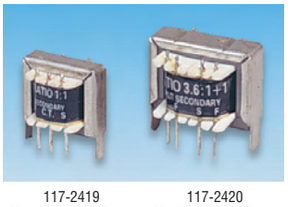
Impedance Matching Table

Turns Ratio	6.3+6.3 : 1+1		1+1 : 2+2		1+1 : 6.45+6.45	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
Individual windings	150+150Ω	3.75+3.75Ω	150+150Ω	600+600Ω	150+150Ω	6.25+6.25kΩ
Series connected	600Ω	15Ω	600Ω	2.4kΩ	600Ω	25kΩ
Parallel connected	150Ω	3.75Ω	150Ω	600Ω	150Ω	6.25kΩ
dc resistance	10+10Ω	0.36+0.36Ω	10+10Ω	55+55Ω	9.6+10Ω	535+605kΩ
Freq. range (±3dB)	40Hz-35kHz	40Hz-35kHz	40Hz-35kHz	40Hz-35kHz	40Hz-25kHz	40Hz-25kHz

223876

Ratio	Order Code	Price Each 1+	20+	50+	100+	+
6.3+6.3 : 1+1	**117-2346**●	31.42	30.13	28.93	26.42	– –
1+1 : 2+2	**117-2343**●	31.42	30.13	28.93	26.42	– –
1+1 : 6.45+6.45	**117-2344**●	31.42	30.13	28.93	26.42	– –
Screening can/cover	**117-2345**●	11.37	10.25	9.69	– –	– –

PCB Mounting, Miniature



117-2419
H=19, W=16, D=16

117-2420
H=27, W=20, D=21

117-2421
H=15, W=18, D=18

Miniature PCB mount audio matching transformers avaiable with ratios of either 1:1, centre tapped secondary or 3.6:1+1, split secondary.
117-2421 is fully encapsulated in flame retardant epoxy resin within a glass filled nylon case for maximum environmental and mechanical protection.

Turns Ratio	Primary Impedance	Secondary Impedance	Power Max.	DC Resistance (Ω) Primary	Secondary	Frequency Range	Mftrs. Part No.
Open							
1:1CT	800Ω	800ΩCT	2mW	69	97	200Hz to 15kHz	E187A
3.6 : 1+1	3Ω	250Ω	5mW	80	23+23	200Hz to 15kHz	E187B
Encapsulated							
1:1CT	800Ω	800Ω	2mW	109	134	30Hz to 25kHz	Z1604

Note: A feature of the design and construction of these transformers may cause the pin spacing to vary slightly.

341309

Mftrs List No.	Order Code	Price Each 1+	5+	10+	25+	+
E187A	**117-2419**●	21.05	19.57	17.89	16.20	– –
E187B	**117-2420**●	24.08	22.40	20.47	18.54	– –
Z1604 NEW	**117-2421**●	17.94	17.12	16.47	15.82	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

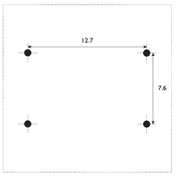
Isolating/Matching

600Ω Line Matching 1:1

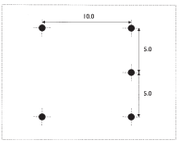
PCB and Surface Mounting

Non-Encapsulated, Standard	Low profile	SMD Microprofile	SMD Hybrid
H=12.6, W=18, D=18	H=11, W=15.5, D=19	H=7, W=9, D=12.7	H=7, W=17.6, D=12.7
Lead length=3.5,	Lead length=3.5,	Row spacing=9.2	Row spacing=9.2
Pin dia.=0.65	Pin dia.=0.65	Pitch=2.54	Pitch=2,54

PCB Drilling Plan



Standard PCB Drilling
Hole size=1.0



Low Profile Drilling
Hole size=1.0

- A full range of encapsulated transformers for voice and data applications
- Approved to **EN 60950** (reinforced isolation) and **EN41003**
- **BABT** Certificate of Recognition
- **CSA/NRTL certified to CSA C22.2 No. 950-95** and **UL** recognised

		Mftrs. List No.	Order Code
Standard Products	Voice & Data to 14,400 bps (V32bis)	P1200	113-0832
	Professional Quality >28,800 bps (V34), (0 dBm in line)	P2001	113-0843
Non-Encapsulated	Voice & Data to 2,400 bps (V22 bis)	P3324	113-0840
Low Profile Products	Voice & Data to 14,400 bps (V32bis),	P1165	113-0835
SMD Microprofile Products	Voice & Data to 14,400 bps (V32bis)	P2781	113-0847
	Data at 28,800 bps (V34)	P3081	113-0850
	High Quality, low distortion, Voice & Data to 2,400 bps (V22bis)	P3188	113-0837
	Cost Effective, Voice & Data to 28,800 bps (V34)	P3191	113-0839
	Professional Quality, Voice & Data to 28,800 bps, (includes 2 to 4 wire Hybrid)	P3000	113-0848

Freq. Response	200Hz-4kHz±0.2dB
Isolation, 50Hz	>3.88kVrms
Saturation Voltage, 50Hz	<10Vrms, 65Vpk
Balance, DC-5kHz	>80dB

Order Code	Package	Return Loss*	Distortion**	Dc_R (per wdg)	Insertion Loss***
113-0832	Std	>19dB	-91 dBm	59R - 73R	<1.5dB
113-0843	Std	>20dB	-110 dBm	59R - 73R	<1.5dB
113-0840	Non-encap	>16dB	-86 dBm	~ 95Ω	<1.8dB
113-0835	LP	>20dB	-95 dBm	54R - 66R	<1.5dB
113-0847	SMD	>20dB	-89 dBm	102R - 123R	<2dB
113-0850	SMD	>16dB	-96 dBm	135R - 165R	<4dB
113-0837	SMD	>18dB	-50 dBm 1	168R - 206R	<3.5dB
113-0839	SMD	>16dB	-93 dBm	270R - 340R	<4.5dB
113-0848	SMD	>17dB	-100 dBm	N/A	<2dB

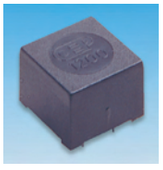
*300Hz - 3.4kHz 600Ω Network Terminating Impedance
**3rd Harmonic, -10dBm/600Ω @ 600Hz
1 3rd Harmonic, 0dB @ 450Hz
Transhybrid Loss for 523-112 >30dB
***F=2kHz, 600Ω

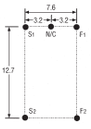
223878

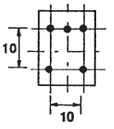
Standard Products	Order Code	Price Each 1+	10+	25+	50+	+
V32 bis	**149-152**▲	7.71	7.05	6.69	5.94	– –
V34	**760-973**●	13.18	11.76	10.00	8.51	– –
V34 Pro	**523-094**▲	15.39	12.96	11.61	10.02	– –
V22 bis (non-encap.)	**309-8011**▲	5.40	4.92	4.68	4.14	– –
Low Profile Products						
V32 bis	**180-000**▲	11.34	10.38	9.84	8.73	– –
SMD Products						
V32 bis	SMD **523-100**▲	11.76	10.23	8.79	7.95	– –
V34	SMD **760-997**▲	13.53	12.33	10.86	9.39	– –
V22 bis	SMD **309-7997**▲	8.01	7.29	6.87	6.18	– –
V34	SMD **309-8000**▲	8.37	7.65	7.26	6.57	– –
Hybrid	SMD **523-112**▲	23.40	19.29	16.53	13.68	– –

600Ω Line Matching 1:1, High Speed

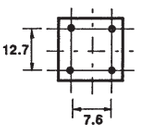
BABT Approved







117-2349



117-2348/117-2350

117-2350/117-2351	H=15, W=18, D=18 (excl. pins)
117-2349 (low profile):	H=11, W=19, D=15 (excl. pins)
117-2348:.	W=18, D=18, H=12.7 (excl. pins)

Fully encapsulated 600Ω 1:1 line isolating transformers for use in telecommunications data transmission as an isolation barrier between modems or similar devices connected to telecommunication lines. All the transformers are fully certified and approved to **BS415, EN60950** and **EN41003,** and carry a **BABT** Certificate of Recognition.

117-2348 Industry standard 600Ω 1:1 line transformer. **BABT CR/0125**
117-2349 Low profile version of 117-2348 for use where height is restricted, **BABT CR/0127**
117-2350 Low distortion type for high speed applications. **BABT CR/0128**
117-2351 High efficiency device, with improved coupling, frequency response and return loss characteristics. **BABT CR/0126.**

Characteristics measured under test circuit conditions.

Insertion loss	1.5dB max. @ 1kHz
	1.5dB, 200-4kHz (482-341) 0.8dB @ 1kHz
Return loss	>20dB, 200-4kHz
Isolation	3750V rms max.
Saturation	10V rms, 65V pk @ 50Hz
Balance	>80dB, 200-400kHz
Distortion	0dB/600Ω, f=450Hz
	second harmonic <-88dB (482-330)
Linearity	<0.03% THD 300-400kHz @ -10dBm/600Ω (482-341)

Winding Resistance, typ (Ω)	117-2348/117-2350	117-2349	117-2351
Primary	68	65	50
Secondary	68	65	60

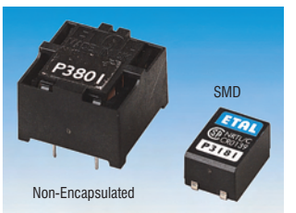
Mftrs. List Nos: OEP1200 = 117-2348 Z1612E = 117-2350 TF048 = 117-2351
Z1260 = 117-2349

223891

	Order Code	Price Each 1+	10+	25+	50+	+
Standard	**117-2348**●	7.50	7.12	6.74	5.98	– –
Low profile	**117-2349**●	11.91	10.90	10.33	9.17	– –
Low distortion	**117-2350**●	14.05	12.85	12.19	10.80	– –
High efficiency	**117-2351**●	13.20	12.10	11.43	10.14	– –

HIgh Speed Internet Access (56k bps)

600Ω Line Matching 1:1



H=12.6, W=18, D=18	H=7, W=9, D=13	H=12.6, W=18, D=18	H=11, W=55, D=13
Drilling 12.7 x 7.62	Drilling 10 x 10	Drilling 12.7 x 7.62	Drilling 10 x 10

- Optimised to meet the demanding specifications for 56k bits/seconds
- Approved to **EN 60950** (Reinforced Isolation)
- **BABT** Certificate of Recognition
- **CSA/NRTL certified to CSA C22.2 No. 950-95** and **UL** recognised

Isolation, 50Hz	>3.88 KV RMS
Saturation Voltage,50Hz	<10Vrms,65V pk
Balance, DC-5KHz	>80dB

Farnell Order Code		1130841	1130842	899-835	1130857	1130836
Mftrs List No.		P3356	P3801	P3146	P3156	P3181
Construction		Non Encap.	Non Encap.	Std.	Low Profile	SMD
C of R		—	608755	CR0136	CR0137	CR0139
Typ. Insertion Loss (dB)		1.5	1.5	2.5	4.8	—
	LF - 3dB cut off	10	–	10	10	—
	100Hz - 4kHz (Typ)	±0.1dB	±0.2dB	±0.6dB	±0.2dB	—
Return Loss (Mln) (dB)		16	18	16	14	16
Distortion (Typ) (dBm) (150Hz - 3dBm in line)		-70	-90	-81	-77	-90

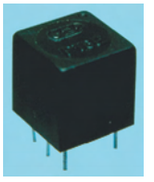
223922

	Order Code	Price Each 1+	10+	25+	50+
Non-Encapsulated	**113-0841**●	6.00	5.49	5.25	4.38
Standard	**113-0842**●	6.99	6.42	6.15	5.13
Low Profile	**113-0851**●	14.22	12.30	10.74	9.30
SMD	SMD **113-0836**●	8.91	8.10	7.65	7.17

Pulse, High Frequency

Open Frame and Encapsulated

H=15, W=13, D=13
(excluding pins)



H=16, W=15, D=15
(excluding pins)

● Compliant
● ◀ ++ Non-compliant
Limited stock - RoHS replacement available
RoHS

- Open and enclosed PCB mounting transformers
- Designed for wide band and general pulse applications in particular thyristor and triac control systems, where isolation between firing circuit and load needs to be provided
- 117-2430 is class 2 insulated to **BS415**

Ratio	L_{pri} (min) mH	L (typ) µH	C (typ) pF	R_{pri} (max) Ω	R_{sec} (max) Ω	Mftrs. List No. Single Section Encapsulated	2 Section Encapsulated
						Open	
1:1	3	19	20	1.1	0.9	PT4	PT4E	PT42E
1:1+1	3	8*	30*	1.4	2.6*	PT6	PT6E	—
2:1+1	12	30*	26*	4	4.2*	PT8	PT8E	—
2:1	12	115	19	5.1	2.6	PT10	—	—

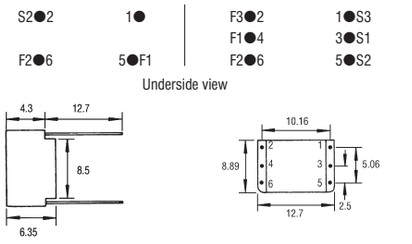
*Secondary joined in series

Proof Voltage	2.8kV (pk)
Output voltage time product (ET Constant)	200Vμsec
Max output pulse current	200Vμsec
Bandwidth	3kHz to 1MHz

341310

Ratio	Mftrs. List No.	Order Code	Price Each 1+	25+	50+	100+
Open						
1:1	PT4	**117-2422**	9.36	8.61	7.77	6.93
1:1+1	PT6	**117-2423**	10.36	9.79	8.83	7.87
2:1+1	PT8	**117-2424**	10.64	9.79	8.83	7.87
2:1	PT10	**117-2425**	9.36	8.61	7.77	6.93
Encapsulated						
1:1	PT4E	**117-2427**	11.72	10.90	10.42	10.09
1:1+1	PT6E	**117-2428**	13.67	12.69	12.04	11.56
2:1+1	PT8E	**117-2429**	12.66	11.91	11.26	10.81
High Isolation						
1:1	PT42E	**117-2430**	12.95	11.52	10.48	9.44

Miniature - 766 Series



Pin dia.=0.56, (pins 3 & 4 not fitted on 1:1 ratio)

A range of miniature ferrite cored PCB mounting pulse transformers encapsulated in a moulded case to **UL94V-0** flammability rating.

Intended for general purpose applications, digital and data processing, coupling, matching and isolation.

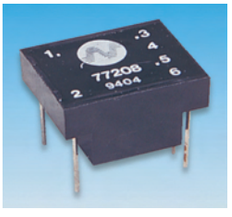
Ratio	LP (min) mH	L (typ) µH	C (max) pF	ETET VµS	Resistance of Windings Ω (max)	Mftrs. List No.	Order Code
1:1	2060	0.6	35	17.5Vμs	1.5	76601/1C	108-7807
1:1	492	0.3	20	8.5Vμs	0.8	76601/2C	108-7808
1:1	219	0.25	12	5.5Vμs	0.5	76601/3C	108-7809
1:1:1	2060	0.6	35	17.5Vμs	1.5	76602/1C	108-7810

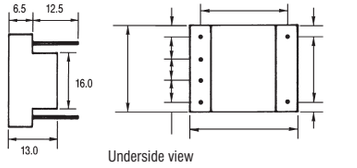
Proof Voltage 500Vdc

223897

Ratio	Order Code	Price Each 1+	10+	20+	100+	+
1:1	**108-7807**	8.91	7.53	6.36	5.28	– –
1:1	**108-7808**	8.91	7.53	6.36	5.28	– –
1:1	**108-7809**	8.91	7.53	6.36	5.28	– –
1:1:1	**108-7810**	8.91	7.53	6.36	5.28	– –

Encapsulated - 772 Series





Pins=0.64 square (Pins 5 & 6 are fitted but not connected on 1:1 ratio)

General purpose pulse transformers for thyristor and triac switching applications. Fully encapsulated in moulded cases to **UL94V-0** flammability rating. Transformers with multiple secondaries may be configured to obtain alternative ratios by linking the secondaries together, i.e. 1:1:1 may be connected to obtain a 2:1.

Ratio	LP (min) mH	L (typ) µH	C (typ) pF	RP (max) Ω	RS_1 (max) Ω	RS_2 (max) Ω	Mftrs No. List No.	Order Code
1:1:1	16.3	40	40	3.6	3.1	2.0	77208C	108-7811
2:1:1	16.3	40	40	3.5	1.6	2.0	77209C	108-7813

Proof Voltage	3.5kVrms
Working voltage	600Vrms
Output voltage time product (ET constant)	482Vμs

223899

Ratio	Order Code	Price Each 1+	20+	100+	+
1:1:1	**108-7811**	14.10	11.73	10.65	– –
2:1:1	**108-7813**	14.10	11.73	10.65	– –

Variable

Encapsulated - 1A to 8A

Clairtronic

- Linear variable output, 0V to line voltage
- No distortion of waveform Smooth linear output
- Negligible maintenance
- Overload capacity
- Low magnetising current
- High efficiency / excellent regulation
- Rugged Construction

Input voltage 240V ac single phase

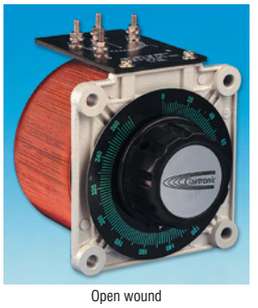
Output Voltage (V)	Rated Current (A)	Power Max. VA	Overall H	Overall Dia.	Fixings	Wt. kg.	Mftrs. List No.
0 - 240	1.0	240	105	86	M3	1.75	10560
0 - 240	1.5	360	127	113	M3	2.75	10561
0 - 240	2.0	480	127	113	M3	3.25	10562
0 - 240	4.0	480	120	165	M6	6.5	10564
0 - 240	6.0	1440	125	165	M6	7.5	10565
0 - 240	8.0	2040	140	165	M6	8.5	10566

311806

Current Rating	Mftrs List No.	Order Code	Price Each 1+	5+	10+
1.0A	10560	**116-6407**	128.59	123.10	118.29
1.5A	10561	**116-6408**	142.58	136.51	131.15
2.0A	10562	**116-6409**	163.15	156.19	150.09
4.0A	10564	**116-6410**	297.57	284.89	273.72
6.0A	10565	**116-6411**	318.12	304.57	292.63
8.0A	10566	**116-6413**	392.39	– –	– –

Open/Enclosed, Single Phase - 0.7A to 28A

Clairtronic



Open wound

Enclosed

- Linear variable output, 0V to line voltage
- No distortion of waveform Smooth linear output
- Negligible maintenance
- Overload capacity
- Low magnetising current
- High efficiency / excellent regulation
- Rugged Construction

Input voltage 240V ac Output voltage 0 to 240/270V ac

Max. Current (A)	Max. VA	Height (excl. knob)	Overall W x D	Fixing Centres L x W	Dia. Fixing Hole	Mftrs. List No.	Order Code
Open Wound							
0.7	168	55	80 x 80	—	4	10530	116-6389
2.0	480	95	110 x 110	92 x 92	7	10531	116-6390
3.0	720	115	110 x 110	92 x 92	7	10532	116-6391
5.0	1200	130	175 x 175	146 x 146	10	10534	116-6392
8.0	1920	130	175 x 175	146 x 146	10	10535	116-6393
10.0	2400	135	175 x 175	146 x 146	10	10536	116-6394
15.0	3600	135	225 x 225	176 x 176	11	10537	116-6395
Enclosed							
0.7	168	160	160 x 130	—	—	10550	116-6397
2.0	480	160	160 x 130	—	—	10551	116-6398
3.0	720	160	160 x 130	—	—	10552	116-6399
5.0	1200	140	175 x 175	146 x 146	10	10554	116-6400
8.0	1920	170	175 x 175	146 x 146	10	10555	116-6401
10.0	2400	170	175 x 175	146 x 146	10	10556	116-6403
15.0	3600	190	225 x 225	176 x 176	11	10557	116-6404
20.0	4800	190	225 x 225	176 x 176	11	10558	116-6405
28.0	6720	225	300 x 300	238 x 238	13	10559	116-6406

311809

Current Rating	Order Code	Price Each 1+	5+	10+
Open Wound				
0.7A	**116-6389**	117.61	112.60	108.17
2.0A	**116-6390**	137.83	131.98	126.78
3.0A	**116-6391**	202.07	193.47	185.86
5.0A	**116-6392**	289.52	277.16	266.31
8.0A	**116-6393**	330.61	316.52	304.71
10.0A	**116-6394**	385.71	369.31	354.80
15.0A	**116-6395**	585.54	563.71	538.61
Enclosed				
0.7A	**116-6397**	172.72	165.34	158.88
2.0A	**116-6398**	192.89	184.67	177.45
3.0A	**116-6399**	248.02	237.46	228.12
5.0A	**116-6400**	358.15	342.87	329.49
8.0A	**116-6401**	385.70	369.29	354.78
10.0A	**116-6403**	447.81	428.71	411.92
15.0A	**116-6404**	661.21	632.99	608.21
20.0A	**116-6405**	715.73	– –	– –
28.0A	**116-6406**	987.20	– –	– –

Single Phase - 1A to 28A

multicomp

- Low cost
- Precision wound
- Rugged construction
- Standard connections
- Simple to use
- Easy to install

Input voltage 240V ac
Output voltage 0 to 240/270V ac

Max. Current (A)	Max. VA	Height (excl. knob)	Overall W	Overall D	Fixing Centres L x W	Dia. Fixing Hole	Mftrs. List No.	Order Code
Open Wound								
1	240	99	83	99			MC1F-1	108-6027
2	480	95	110	110	92 x 92	7.5	MC2F-1	108-6028
3	720	115	110	110	92 x 92	7.5	MC3F-1	108-6031
4	960	102	175	175	146 x 146	10	MC4F-1	108-6032
6	1440	110	175	175	146 x 146	10	MC6F-1	108-6033
10	1920	130	175	175	146 x 146	10	MC8F-1	108-6034
15	3600	135	225	225	176 x 176	11	MC15F-1	108-6036
20	4800	145	225	225	176 x 176	11	MC20F-1	108-6037
28	6720	160	300	300	238 x 238	13	MC28F-1	108-6038

311807

Current Rating	Order Code	Price Each 1+	5+	10+
Open Wound				
1A	**108-6027**	102.51	95.32	– –
2A	**108-6028**	115.02	106.95	– –
3A	**108-6031**	175.02	162.75	– –
4A	**108-6032**	240.00	223.20	– –
6A	**108-6033**	250.02	230.79	226.17
10A	**108-6034**	280.02	258.48	253.32
15A	**108-6036**	510.00	474.30	– –
20A	**108-6037**	525.00	488.25	– –
28A	**108-6038**	710.01	660.30	– –

Components

Material Selection Guide

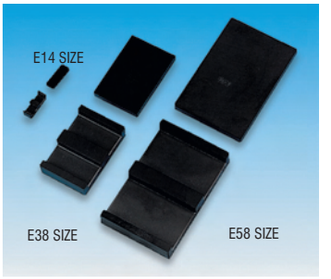
Ferrite Material	Material Characteristics
3H3	● Low Losses ● Defined temperature factor to compensate drift of capacitor ● Very stable with time
3S4/4C65	● High impedance in covered frequency range
3E25/3E5/3E6	● High permability
3C90	● High saturation level
3C90/3F3/3F4	● Low power losses ● High saturation

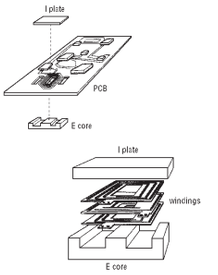
Ferrite Material	Main Application Areas
3H3/3E5/3E6	Telecom filters, signal transformers, pulse transformers,
3E25	delay lines
3C90/3F3/3F4	Power conversion, general purpose transformers
3S4/4C65	Suppression
3R1	Magnetic regulators

223855

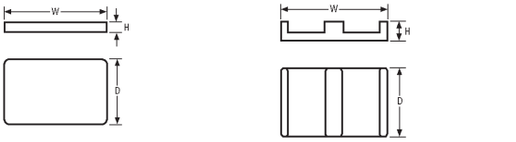
Planar Cores

FERROXCUBE





- A range of low profile ferrite E cores which can be used in 2 ways:
  1. The integrated method uses windings which are etched into a multi-layer PCB i.e. the coils are an integral part of the PCB
  2. The stand alone method uses coils etched onto mono layer PCB's which are then stacked between the planar cores
- Transformer and choke designs with power throughput from 10 to 1500 Watts achievable
- E cores can be glued to their mating parts, or sizes E14, E18 and E22 can be clipped together using spring clips
- Planar advantages include: very low profile, less skin effect with flat conductors, good coupling of stacked coils, no bobbin necessary, no winding labour costs, no winding errors and excellent repeatability
- Mftrs. List No. gives EW/H/D-material for E cores and PLTW/D/H/-material for I plates



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	Mftrs. List No.	Order Code	Price Each 1+	30+	100+	300+	+	+
E14 Core Size								
E Core	E14/3.5/5/R-3F3	**926-462**●	2.61	1.89	1.68	1.26	– –	– –
I Plate	PLT14/5/1.5/S-3F3	**926-474**●	2.49	1.80	1.56	1.17	– –	– –
E Core	E14/3.5/5/R-3C90	**305-5966**●	1.98	1.65	1.44	1.26	– –	– –
I Plate	PLT14/5/1.5/S-3C90	**305-5978**●	1.80	1.65	1.44	1.20	– –	– –
E Core	E14/3.5/5/R-3F4	**305-5980**●	2.46	1.95	1.71	1.50	– –	– –
I Plate	PLT14/5/1.5/S-3F4	**305-5991**●	2.28	2.07	1.83	1.47	– –	– –
Clip	CLM-E14/PLT14	**926-486**●	1.17	0.88	0.69	0.56	– –	– –
E18 Core Size								
E Core	E18/4/10/R-3F3	**926-498**●	3.27	2.40	2.13	1.59	– –	– –
I Plate	PLT18/10/2/S-3F3	**926-504**●	3.09	2.22	1.92	1.47	– –	– –
E Core	E18/4/10/R-3C90	**305-6004**●	3.12	2.49	2.19	1.89	– –	– –
I Core	PLT18/10/2/S-3C90	**305-6016**●	2.52	2.31	2.27	– –	– –	– –
E Core	E18/4/10/R-3F4	**305-6028**●	3.69	2.94	2.58	2.25	– –	– –
I Plate	PLT18/10/2/S-3F4	**305-6030**●	3.09	2.82	2.43	1.98	– –	– –
Clip	CLM-E18/PLT18	**926-516**●	1.17	0.88	0.69	0.56	– –	– –
E22 Core Size								
E Core	E22/6/16/R-3F3	**926-528**●	4.14	2.94	2.58	1.95	– –	– –
I Plate	PLT22/16/2.5/S-3F3	**926-530**●	3.84	2.79	2.43	1.86	– –	– –
E Core	E22/6/16/R-3C90	**305-6041**●	3.78	3.03	2.64	2.31	– –	– –
I Plate	PLT22/16/2.5/S-3C90	**305-6053**●	3.24	2.91	2.52	2.04	– –	– –
E Core	E22/6/16/R-3F4	**305-6065**●	4.47	3.57	3.12	2.73	– –	– –
I Plate	PLT22/16/2.5/S-3F4	**305-6077**●	3.90	3.51	3.03	2.43	– –	– –
Clip	CLM-E22/PLT22	**926-541**●	1.17	0.88	0.69	0.55	– –	– –
E32 Core Size								
E Core	E32/6/20-3F3	**926-577**●	3.24	2.28	2.01	1.91	– –	– –
I Plate	PLT32/20/3.2-3F3	**926-589**●	2.85	2.07	1.80	1.75	– –	– –
E Core	E32/6/20-3C90	**305-6089**●	3.48	2.79	2.43	2.10	– –	– –
I Plate	PLT32/20/3.2-3C90	**305-6090**●	4.68	4.23	3.63	2.91	– –	– –
E Core	E32/6/20-3F4	**305-6107**●	5.94	4.77	4.17	3.63	– –	– –
I Plate	PLT32/20/3.2-3F4	**305-6119**●	5.52	4.95	4.26	3.39	– –	– –
E38 Core Size								
E Core	E38/8/25-3F3	**926-619**●	8.04	5.94	5.22	4.35	– –	– –
I Plate	PLT38/25/3.8-3F3	**926-620**●	7.23	5.34	4.71	3.81	– –	– –
E Core	E38/8/25-3C90	**305-6144**●	7.17	5.73	5.04	4.38	– –	– –
I Plate	PLT38/25/3.8-3C90	**305-6156**●	5.49	4.92	4.23	3.36	– –	– –
E Core	E38/8/25-3F4	**305-6120**●	5.31	4.23	3.72	3.21	– –	– –
I Plate	PLT38/25/3.8-3F4	**305-6132**●	6.45	5.79	4.95	3.93	– –	– –
E43 Core Size								
E Core	E43/10/28-3F3	**926-656**●	10.95	8.13	7.14	5.70	– –	– –
I Plate	PLT43/28/4.1-3F3	**926-668**●	9.54	7.02	6.18	4.86	– –	– –
E Core	E43/10/28-3C90	**305-6168**●	6.03	4.83	4.23	3.66	– –	– –
I Plate	PLT43/28/4.1-3C90	**305-6170**●	5.91	4.74	4.14	3.60	– –	– –
E Core	E43/10/28-3F4	**305-6181**●	11.13	8.91	7.80	6.78	– –	– –
I Plate	PLT43/28/41-3F4	**305-6193**●	8.07	7.23	6.18	4.89	– –	– –
E58 Core Size								
E Core	E58/11/38-3F3	**926-693**●	17.79	13.23	11.52	9.42	– –	– –
I Plate	PLT58/38/4-3F3	**926-700**●	15.48	11.46	10.05	8.22	– –	– –
E Core	E58/11/38-3C90	**305-6200**●	11.88	9.51	8.31	7.23	– –	– –
I Plate	PLT58/38/4-3C90	**305-6211**●	8.85	7.92	6.75	5.34	– –	– –
E Core	E58/11/38-3F4	**305-6223**●	16.86	13.47	11.79	10.26	– –	– –
I Plate	PLT58/38/4-3F4	**305-6235**●	10.35	9.75	9.15	7.35	– –	– –

● Compliant
● Non-compliant
++ Limited stock - RoHS replacement available

RoHS

	Mftrs. List No.	Order Code	Price Each 1+	30+	100+	300+	+	+
E64 Core Size								
E Core	E64/10/50/50-3C90	**305-6247**	20.40	16.32	14.28	12.42	– –	– –
I Plate	PLT64/50/5.1-3C90	**305-6259**	11.55	10.95	10.26	8.97	– –	– –
E Core	E64/10/50-3F3	**305-6260**	22.59	18.06	15.81	13.74	– –	– –
I Plate	PLT64/50/5.1-3F3	**305-6272**	12.24	11.55	11.04	9.30	– –	– –
E Core	E64/10/50-3F4	**305-6284**	24.87	19.89	17.40	15.12	– –	– –
I Plate		**305-6296**	12.96	12.30	11.85	10.20	– –	– –

Without Centre Hole

FERROXCUBE

Transformer Full-Core	Material Grade	AL±25% @ 4kHz @ 0.1mT	Mftrs. List No.	Order Code
RM4/I	3E5	—	RM4/I-3E5	136-920
RM5/I	3E5	—	RM5/I-3E5	136-943
RM5/I	3C90	—	RM5/I-3C90	305-6910
RM6-SI	3H3	—	RM6S/I-3H3	305-6879
RM6-SI	3E5	—	RM6S/I-3E5	305-6818
RM6-SI	3C90	—	RM6S/I-3C90	305-6820
RM7/I	3C90	—	RM7/I-3C90	312-3431
RM8/I	3C90	—	RM8/I-3C90	305-6831
RM8/I	3H3	—	RM8/I-3H3	305-6880
RM8/I	3E5	—	RM8/I-3E5	305-6892
RM10/I	3E5	—	RM10/I-3E5	305-6909
RM10/I	3C90	—	RM10/I-3C90	305-6843
RM12/I	3C90	—	RM12/I-3C90	305-6855
RM14/I	3C90	—	RM14/I-3C90	305-6867

AL = Inductance Factor (nH) = L / N^2

223880

Transformer Full-Core	Order Code	Price Each 1+	30+	300+	1K+
RM4/I	**136-920**	5.97	4.77	4.05	2.98
RM5/I	**136-943**	5.16	4.11	3.51	2.56
RM5/I	**305-6910**	3.97	2.97	2.28	2.02
RM6-SI	**305-6879**	4.29	3.27	2.67	2.25
RM6-SI	**305-6818**	4.68	4.08	3.33	3.06
RM6-SI	**305-6820**	4.05	3.06	2.58	2.25
RM7/I	**312-3431**	5.10	4.50	3.75	3.27
RM8/I	**305-6831**	5.64	4.41	3.72	3.17
RM8/I	**305-6880**	6.35	5.19	4.26	3.87
RM8/I	**305-6892**	8.13	6.93	6.00	5.59
RM10/I	**305-6909**	11.16	10.05	8.55	7.84
RM10/I	**305-6843**	6.96	6.06	5.28	4.59
RM12/I	**305-6855**	10.21	9.03	7.92	7.20
RM14/I	**305-6867**	11.04	10.26	9.36	9.00

Accessories for RM Transformer

FERROXCUBE

Mftrs. List No.	Order Code	Mftrs. List No.	Order Code	Mftrs. List No.	Order Code
CPVS-RM4-1S-6P	136-967	CSV-RM7/I-1S-4P	178-912	CSV-RM10-1S-8P	178-920
CLI-RM4/5/I	137-005	CSV-RM7/I-2S-8P	200-736	CSV-RM10-2S-8P	178-921
CSV-RM5-1S-6P-G	136-980	DT2487	443-736	CLI/P-RM10/I	443-773
CPVS-RM5/LP-1S-8P	136-992	CSV-RM8-1S-4P	178-916	CPV-RM12/I-1S-12PD	178-513
CLI-RM4/5/I	137-005	CSV-RM8-1S-8PL	178-917	CLI/P-RM12/I	433-135
CLI/P-RM6/I	136-815	DT2496	443-750	CSV-RM14-1S-12P	200-657
CSV-RM6S-1S-6P-G	312-3443	CSV-RM10-1S-5P	178-919	CLI/P-RM14/I	291-432

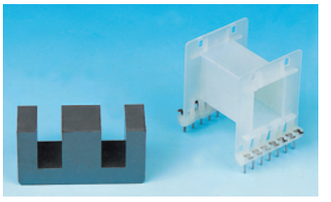
223873

Core Size	Description	Order Code	Price Each 1+	30+	300+	1K+
RM4	One section 6 pin bobbin	**136-967**	2.30	1.80	1.51	1.07
	Retaining clip RM4/5	**137-005**	0.35	0.25	0.22	0.16
RM5◆	One section 6 pin bobbin	**136-980**	2.96	2.30	1.92	1.39
	Retaining clip RM4/5	**137-005**	0.35	0.25	0.22	0.16
RM6-R	Retaining clip + earth tag	**136-815**	0.49	0.27	0.17	0.14
RM-S◆	One section 6 pin bobbin	**312-3443**	1.66	1.30	1.26	– –
RM7	One section 4 pin bobbin	**178-912**	3.31	1.92	1.45	1.21
	One section 8 pin bobbin	**200-736**	4.69	3.21	2.36	1.86
RM8	One section 4 pin bobbin	**178-916**	3.46	2.36	1.73	1.39
	One section 8 pin bobbin	**178-917**	3.37	2.30	1.70	1.35
	Retaining clip + earth tag	**443-750**	0.55	0.31	– –	– –
RM10	One section 5 pin bobbin	**178-919**	3.91	2.68	1.95	1.76
	One section 8 pin bobbin	**178-920**	3.91	2.68	1.95	1.88
	Two section 8 pin bobbin	**178-921**	4.25	2.93	2.17	2.02
	Retaining clip + earth tag	**443-773**	0.69	0.38	0.22	0.20
RM12	One section 12 pin bobbin	**178-513**	8.25	5.64	4.16	3.28
	Retaining clip + earth tag	**433-135**	0.62	0.34	0.21	0.20
RM14	One section 12 pin bobbin	**200-657**	8.63	5.89	4.32	3.71
	Retaining clip + earth tag (RM14/i only)	**291-432**	1.07	0.58	0.38	0.33

◆**Note:-** Retaining clip + earth tag is common to RM6-R and RM6-S transformers

E Cores and Accessories

EPCOS



	H	W	D
E42	33	42.5	43
E55	46	56	57

- An assembly set consists of two half cores and a coil former
- Suitable for large power capacity power supplies
- High saturation flux density and low power loss
- N27 material recommended for power applications up to 100kHz
- N67 material recommended for power applications from 100kHz to 300kHz

Transformer Half Core	Material Grade	AL +30% -20%	Mftrs. List No.	Order Code	Coilformer	Mftrs. List No.	Order Code
E42	N27	3500	B66325GX127	119-0595	E42	B66242J1000R1	119-0598
E42	N67	3800	B66325GX187	119-0596	E55	B66252BM1	119-0599
E55	N27	5800	B66335GX127	119-0597			

AL = Inductance Factor (nH) = L/N^2

Note: The most favoured method of fixing the half cores together is adhesive bonding. Suitable adhesive Order Code 318-036

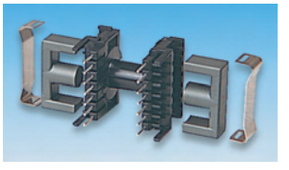
223846

		Order Code	Price Each 1+	25+	50+	100+	+
E42							
Half core	N27	**119-0595**	2.39	2.18	1.99	1.77	– –
Half core	N67	**119-0596**	4.31	3.92	3.57	3.18	– –
Coilformer single section 10 pin		**119-0598**	4.51	4.11	3.75	3.34	– –
E55							
Half core	N27	**119-0597**	9.05	8.24	7.52	6.70	– –
Coilformer single section 14 pin		**119-0599**	5.88	5.45	4.97	4.43	– –

Ferroxcube ETD Cores and Accessories

FERROXCUBE

Material Grade 3C90



A range of ungapped E cores suitable for power application where a high operating flux density and low total core-loss is required. 3C90 is a low loss, medium frequency ferrite for applications up to 200kHz, such as switched mode power supplies and inverters. Two cores, one bobbin and two stainless steel clips are required to make up a transformer.

Note: New design of bobbin has square pins instead of round and is 2-3mm lower in height but functionally is identical

Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code
ETD29/16/10-3C90	305-6375	CPH-ETD39-1S-16P	305-6314	CLI-ETD49	105-778
4322 021 34380	178-506	CLI-ETD39	105-772	ETD54/28/19-3C90	305-6429
CLI-ETD29	178-507	ETD44/22/15-3C90	305-6405	CPH-ETD54-1S-22P	137-029
ETD34/17/11-3C90	305-6387	CPH-ETD44-1S-18P	305-6326	CLI-ETD54	137-030
CPH-ETD34-1S-14P	305-6302	CLI-ETD44	105-775	ETD59/31/22-3C90	305-6430
CLI-ETD34	105-769	ETD49/25/16-3C90	305-6417	CPH-ETD59-1S-24P	137-054
ETD39/20/13-3C90	305-6399	CPH-ETD49-1S-20P	305-6338	CLI-ETD59	137-066

223879

	Dimensions W	L	D	Order Code	Price Each 1+	30+	300+	1K+
ETD29								
Half core	29	16	10	**305-6375**	3.24	2.19	1.71	1.41
Bobbin	One section 13 pin			**178-506**	3.94	2.71	1.98	1.58
Steel clip				**178-507**	0.66	0.44	0.38	0.28
ETD34								
Half core	35	17	11	**305-6387**	3.45	2.34	1.83	1.50
Bobbin	One section 14 pin			**305-6302**	5.07	4.19	3.72	3.21
Steel clip				**105-769**	1.07	0.58	0.38	0.32
ETD39								
Half core	39	20	12	**305-6399**	4.02	3.30	2.76	2.25
Bobbin	One section 16 pin			**305-6314**	5.36	4.25	3.59	3.12
Steel clip				**105-772**	1.20	0.66	0.41	0.35
ETD44								
Half core	44	22	15	**305-6405**	4.92	3.96	3.30	2.55
Bobbin	One section 18 pin			**305-6326**	5.89	5.01	4.54	3.56
Steel clip				**105-775**	1.54	0.72	0.48	0.38
ETD49								
Half core	49	25	16	**305-6417**	5.85	4.50	3.96	3.30
Bobbin	One section 20 pin			**305-6338**	6.30	5.64	5.42	4.95
Steel clip				**105-778**	1.51	0.82	0.55	0.44
ETD54								
Half core	54	28	19	**305-6429**	8.01	7.47	6.48	5.97
Bobbin	One section 22 pin			**137-029**	15.81	12.13	10.30	7.28
Steel clip				**137-030**	1.93	1.51	1.29	0.91
ETD59								
Half core	59	31	22	**305-6430**	9.48	8.67	8.25	7.50
Bobbin	One section 24 pin			**137-054**	16.41	12.63	10.74	7.56
Steel clip				**137-066**	2.89	2.30	1.95	1.35

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.

EFD Cores and Accessories, Surface Mount

FERROXCUBE

SMD

Material Grade 3F3, 3F4 and 3C90

A range of cores and bobbins offering a combination of very low build height and high throughput power densities. Applications include dc-dc converters, switch mode power supplies and other power conversion circuits. 3F3 is a material for designs up to 1MHz 3F4 is recommended for designs up to 3MHz, such as resonant converters. 3C90 is recommended for designs up to 200kHz, such as general purpose transformers.

	EFD10			EFD12			EFD15		
	H	W	D	H	W	D	H	W	D
Half core	2.7	10.5	5.2	3.5	12.5	6.2	4.65	15	7.5
Bobbin	5.4	11.7	14.7	6.2	13.7	16.2	7.5	16.7	

Note: The most favoured method of fixing the half cores together is by adhesive bonding.

Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code
EFD10-3F3-S	482-602	CLM-EFD10	310-2427	CPHS-EFD12/35-2S-8P.	482-651
EFD10-3F4-S	482-614	EFD12-3F3-S	482-638	CLM-EFD12	310-2439
CPHS-EFD10/3-1S-8P	482-626	EFD12-3C90-S	310-2397	EFD15-3C90-S	310-2403

An assembly set is a full core, bobbin and one clamp

223881

EF10	Core Grade	Order Code	Price Each 1+	30+	300+	1K+
Full core	3F3	SMD 482-602	6.69	4.71	3.51	2.76
Full core	3F4	SMD 482-614	8.70	6.18	4.53	3.54
Bobbin, 8 pin		SMD 482-626	2.80	1.89	1.42	– –
Steel Clamp		SMD 310-2427	1.83	0.91	0.41	0.32
EFD12						
Full core	3F3	SMD 482-638	5.58	3.96	2.94	2.28
Full core	3C90	SMD 310-2397	5.52	2.61	1.65	1.32
Bobbin, 8 pin		SMD 482-651	3.81	2.58	1.89	1.51
Steel Clamp		SMD 310-2439	1.86	0.98	0.44	0.35

EFD Cores and Accessories

EPCOS

Material Grade N87

Assembly set dimensions	H (above PCB)	W	D
EFD15	8	17	19.3
EFD20	10	22	24.3
EFD25	12.5	27.3	29.3
EFD30	12.5	32.5	

A range of EFD cores and accessories having a flattened and lowered centre limb, suitable for low profile transformer designs within switch mode power supplies and dc to dc converters.

An assembly set consists of two half cores, a single section bobbin and two retaining clips.

Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code	Mftrs. List Nos	Order Code
B66413GX187	119-0582	B66418W1008D1	119-0586	B66422B2000	119-0590
B66414W1008D1	119-0583	B66418B2000	119-0587	B66423GX187	119-0591
B66414B2000	119-0584	B66421GX187	119-0588	B66424W1012D1	119-0592
B66417GX187	119-0585	B66422W1010D1	119-0589	B66424B2000	119-0594

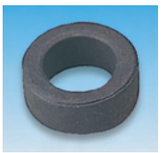
223900

	Order Code	Price Each 1+	250+	500+	1K+
EFD15					
Half core	119-0582	3.32	3.16	2.93	2.67
Bobbin, 8pin	119-0583	1.23	1.16	1.07	0.98
Retaining clip	119-0584	0.14	0.13	0.12	0.11
EFD20					
Half core	119-0585	1.57	1.48	1.37	1.26
Bobbin, 8pin	119-0586	2.10	1.98	1.83	1.68
Retaining clip	119-0587	0.20	0.18	0.17	0.16
EFD25					
Half core	119-0588	2.12	2.00	1.85	1.70
Bobbin, 10pin	119-0589	2.18	2.05	1.90	1.74
Retaining clip	119-0590	0.23	0.22	0.20	0.19
EFD30					
Half core	119-0591	2.59	2.43	2.25	2.07
Bobbin, 12pin	119-0592	2.86	2.69	2.49	2.29
Retaining clip	119-0594	0.33	0.31	0.29	0.27

Saturable Inductor

FERROXCUBE

Material Grade 3R1



A selection of ring cores in 3R1 ferrite material coated in black nylon II, being of comparable performance to amorphous metals. Applications as saturable inductors to provide an efficient means of regulating several independent outputs in a switch mode power supply and spike suppression in high frequency semiconductor switching circuits.

Dimensions D	d	H	le (mm)	Ae (mm^2)	Mftrs. List No.	Order Code
9.5	5.4	3.4	22.9	4.4	TN9/6/3-3R1	179-441
14.6	8.2	5.5	35	12.3	TN14/9/5-3R1	179-442
23.7	13.1	7.5	55.8	30.9	TN23/14/7-3R1	179-443
36.9	21.9	15.7	89.6	95.9	TN36/23/15-3R1	179-444

223896

Order Code	Price Each 1+	30+	300+	1K+
179-441	1.47	0.90	0.66	0.55
179-442	2.23	1.32	0.99	0.78
179-443	4.44	3.09	2.31	1.83
179-444	13.53	9.81	8.22	7.18

Toroids

FERROXCUBE

- A selection of ferrite ring cores coated with Polyamide II or lacquer
- Flame retardant in accordance with **UL94V-2**

Polyamide II

- Maximum working temperature 160°C
- Low permeability materials

Lacquer

- Maximum working temperature 90°C
- High permeability materials

Dimensions D	d	H	Material Grade	le (mm)	Ae (mm^2)	AL ± 25% (nH)	Mftrs. List No.	Order Code
Polyamide II								
9.4	5.5	3.4	4C65	22.9	4.44	30	TN9/6/3-4C65	200-694
13.25	7.35	5.7	3C85	30.1	12.2	1000	TN13/7.5/5-3C90	178-504
14.5	8.4	5.5	4C65	35	12.3	55	TN14/9/5-4C65	180-008
23.6	13.4	7.6	4C65	55	30.9	87	TN23/14/7-4C65	180-009
23.7	13.1	7.5	3E25	55.8	30.9	3828	TN23/14/7-3E25	305-6971
25.8	14	10.6	3E25	60.2	48.9	5620	TN25/15/10-3E25	305-6995
32.2	18.1	13	3E25	76	76.5	6950	TN32/19/13-3E25	305-7008
36.9	21.9	15.7	3E25	89.6	95.9	7390	TX36/23/15-3E25	305-7021
36.9	21.9	15.7	4C65	89.6	95.9	170	TN36/23/15-4C65	305-6958
Lacquer - 3E5 Grade						AL ± 30% (nH)		
10.25	5.75	4.25	3E5	24.1	7.8	3470	TL10/6/4-3E5	305-6960
25.25	14.75	10.25	3E5	60.2	48.9	8680	TL25/15/10-3E5	305-6983
36.25	22.75	15.25	3E5	89.6	95.9	11400	TL36/23/15-3E5	305-7010

223874

	Order Code	Price Each 1+	30+	300+	1K+
Polyamide II	200-694	1.81	1.05	0.78	0.63
	178-504	1.56	0.93	0.69	0.58
	180-008	2.42	1.44	1.08	0.87
	180-009	4.83	3.39	2.52	1.98
	305-6971	3.67	2.85	2.19	1.89
	305-6995	3.79	2.94	2.28	1.95
	305-7008	6.33	4.83	3.91	– –
	305-7021	8.75	8.13	6.99	6.06
Lacquer	305-6960	2.28	1.77	1.38	1.20
	305-6983	4.47	3.45	2.64	2.28
	305-7010	9.49	8.34	7.41	6.36

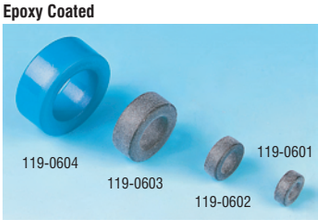
● Compliant
● Non-compliant
++ Limited stock - RoHS replacement available

RoHS

Toroids

Epoxy Coated

EPCOS



- Epoxy coating provides higher mechanical strength
- Applications include pulse, small signal, power transformers and EMI suppression chokes

Dimensions da	di	h	Material Grade	le (mm)	Ae (mm^2)	AL ± 25% (nH)	Mftrs. List No.	Order Code
12.5	7.5	5	N30	30.09	12.23	2200	B64290L44X830	119-0601
16	9.6	6.3	N30	38.52	19.73	2770	B64290L45X830	119-0602
25.3	14.8	10	N27	60.07	76.89	2150	B64290L618X27	119-0603
15	23	15	N30	89.65	95.89	5750	B64290L674X830	119-0604

228157

Order Code	Price Each 1+	25+	50+	100+	+
119-0601	1.38	1.26	1.15	1.02	– –
119-0602	1.62	1.47	1.34	1.20	– –
119-0603	2.85	2.60	2.37	2.11	– –
119-0604	9.13	8.31	7.58	6.76	– –

Prices are in Singapore Dollars and exclusive of GST.
Due to the volatile nature of certain products, prices are subject to change without notice.