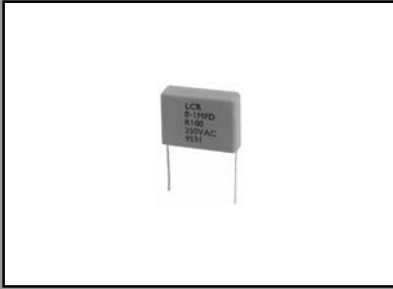
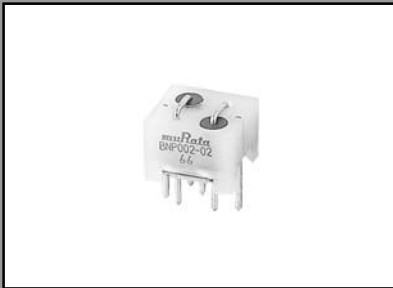


FILTERS & SUPPRESSION

RC NETWORK SUPPRESSOR



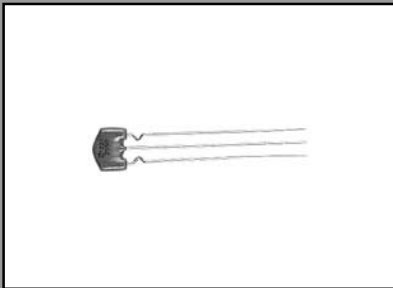
PI FILTER BLOCK



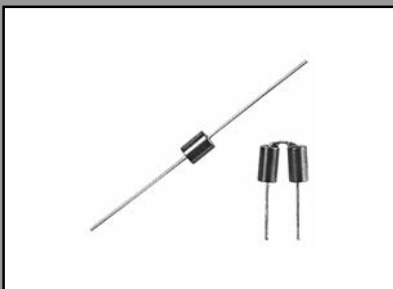
FERRITE CORES



T NETWORK VARISTOR



FERRITE BEAD INDUCTORS



CAPACITORS	2153
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SQUIRES MODEL & CRAFT TOOLS

PCB MOUNTING EMC FILTER

COMPACT PCB MOUNTING EMC FILTER The Schaffner FN406 PCB mounting EMC filter offers high performance in a compact form and is ideal for equipment applications where space is at a premium. Footprint of just 15 x 45mm reduces PCB area, height similar to components used in circuits such as switched mode power supplies. Aluminium housing provides excellent RF shielding against coupling effects from nearby components. Approved to VDE, SEV, UL and CSA.



Technical specification

Voltage rating 250V AC
Line frequency 0 to 400Hz
Maximum leakage 190µA/phase
Inductance 0.5A 24mH 1A 12mH
Capacitors 100n between lines (Class X2) 2.2n lines to earth (Class Y)
Operating temperature -25°C to +85°C
Dimensions 29.5(H) x 15(W) x 45(D)
Pins 0.7(L) x 0.8 x 0.8(W)
Schaffner part nos. 0.5A FN406-0.5/02 - 1A FN406-1/0.2

CODE	TYPE	PRICE
13-0012	PCB Mounting EMC Filter 0.5A FN406-0.5/0.2....	£14.99
13-0014	PCB Mounting EMC Filter 1A FN406-1/0/0.2.....	£14.99

CHASSIS MOUNTING RFI FILTER

RFI POWER LINE FILTER RFI power line filters are general purpose common-mode filters, effectively providing RFI control of line-to-ground noise in a small size at low cost. Designed to meet a wide variety of electronic and electrical applications. Meet the very low leakage current requirements of VDE portable equipment, and (120 Volt) UL544 non-patient medical equipment. 250V AC rated. UL recognised, CSA certified, VDE approved. Corcom B series.



Technical specification

Leakage current max. 0.36mA
Hipot line-to-ground 2250V DC
Hipot line-to-line 1450V DC
Operating frequency 50/60Hz
Rated voltage max. 250V AC

CODE	TYPE	PRICE
13-0024	RFI Power Line Filter 5A.....	£15.50

CHASSIS MOUNTING FILTER The Schaffner FN2010 family is designed to provide an economic solution for a wide variety of general purpose filtering requirements. Available in a wide range of ratings, individual application requirements are easily and economically matched. 6.3 x 0.8mm faston terminations. Approved to VDE, UL and CSA



Technical specification

Voltage rating 250V AC
Line frequency 0-400Hz
Maximum leakage 0.4mA/phase
Inductance 1A 12mH
3A 2.5mH
6A 1mH
10A 0.8mH
Capacitors 100n between lines (Class X2)
4.7n lines to earth (Class Y)
Dimensions 1A - 6A 43.5 x 35 x 24.3(H) FC 54mm
10A 43.5 x 35 x 29.3(H) FC 54mm
Operating temperature -25°C to +85°C

CODE	TYPE	PRICE
13-0016	Chassis Mount Filter 1A FN2010.....	£21.99
13-0018	Chassis Mount Filter 3A FN2010.....	£23.99
13-0020	Chassis Mount Filter 6A FN2010.....	£23.99
13-0022	Chassis Mount Filter 10A FN2010.....	£23.99

GENERAL PURPOSE MULTI-STAGE CHASSIS FILTER the Schaffner FN2060 is a general purpose, multi-stage filter which incorporates additional inductance stages for higher common mode attenuation. 250V ac rated, Line frequency 0-400Hz, MTBF 950,000 hours. 6.3 x 0.8mm faston terminations. Approved to VDE, UL and CSA.



Technical specification

Current rating A	Maximum leakage @ 40°C	Inductance	Capacitance Cx uF	Capacitance Cy nF	Resistance MR
6	0.4mA/phase	0.97	0.22	4.7	1

CODE	TYPE	PRICE
13-0026	GP Multi-stage Chassis Filter FN2060 6A.....	£36.99

IEC INLET FILTERS

COMMERCIAL IEC INLET FILTER a low cost commercial IEC inlet filter offering a very cost effective solution to power filtering requirements in a wide range of equipment. Compact design gives behind panel depth of just 50mm. Terminated with 6.35mm faston tabs.



Technical specification

Operating voltage	250V AC
Maximum leakage	115V AC 60Hz:0.25mA 230V AC 50Hz:0.5m
Inductance	1A 6.5mH 6A 0.8mH 3A 2.5mH 10A 0.2mH
Capacitors	100n between lines (Class X2) 2n2 lines to earth (Class Y)
Temperature range	-25° to +85°C

CODE	TYPE	PRICE
580-313	Commercial IEC Inlet Filter 1A.....	£6.99
580-315	Commercial IEC Inlet Filter 3A.....	£6.99
580-317	Commercial IEC Inlet Filter 6A.....	£6.99

GENERAL PURPOSE IEC INLET FILTERS a range of low cost general purpose filters that provide effective line-to-ground filtering at up to 6A. Rated voltage 250V AC, compact design. Approved by CSA, UL, VDE, SEMKO, NEMKO, DEMKO, FIMKO

Technical specification

Rated voltage 250V
Leakage current 0.8mA
HIPOT line to line 1450V DC
HIPOT line to ground 2250V DC
Insulation resistance 100MO
DC resistance
1A - 0.50 max.
3A - 0.20 max.
6A - 0.150 max.
Operating temperature -25°C to +85°C



CODE	TYPE	PRICE
13-0040	General Purpose Inlet Filter 1A.....	£5.99
13-0042	General Purpose Inlet Filter 3A.....	£5.99
13-0044	General Purpose Inlet Filter 6A.....	£5.99

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RC NETWORK CONTACT SUPPRESSOR

RC NETWORK CONTACT SUPPRESSOR sudden interruption of current in an inductive circuit normally produces a high voltage surge. Damage to contacts occurs during arcing. In SCR or triac circuits incorrect functioning may occur due to arcing. The LCR network contact suppressor will suppress arcing and also reduce dV/dt. The network also suppresses radio interference over a wide frequency range. Sold individually.



Technical Specification

Capacitance	0.1µF±10%
Resistance	100Ω ±10%
Voltage rating	250V ac
Power rating	0.5W
Operating temperature	-55° to +100°C
Dimensions	W25 x D8 x H19
	lead pitch 22.5mm, lead dia 0.8mm

CODE	TYPE	PRICE
580-320	RC Network Contact Suppressor.....	£2.99

PI FILTER BLOCKS

PI TYPE FILTER BLOCK a two circuit PI type PCB mounting filters incorporating ferrite bead inductors and feed through capacitors suitable for multiple supply lines. Excellent attenuation over a wide frequency range from 15MHz to 1GHz. Applications include suppression of noise in signal lines, digital and computer equipment. Sold individually.

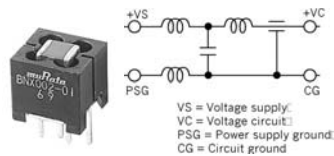


Technical specification

Voltage rating	500V DC
Test Voltage	300V DC
Current rating	10A DC
Number of circuits	2
Dimensions	12.0(l) x 11.0(w) x 12.0(h)
Operating temperature range	-40° to +100°C

CODE	TYPE	PRICE
590-010	PI Type Filter Block BNP002-02.....	£6.99

STANDARD DC POWER FILTERS compact PCB mounting DC power filters incorporating a four terminal capacitor, feed through capacitor and ferrite bead inductors providing excellent attenuation over a very wide frequency from 1MHz to 1GHz. Suitable for applications where high currents and efficient filtering is required, such as digital equipment, output stages of switching power supplies etc. Sold individually.



Technical specification

Voltage rating	50V DC
Test Voltage	125V DC
Current rating	BNX002-01 10A DC Max
Typical attenuation (50Ω)	1MHz 50dB
	10MHz 75dB
	100MHz 85dB
Temperature range	-30° to +85°C
Dimensions	13.0(h) x 12.0(w) x 11.0(d)

CODE	TYPE	PRICE
590-000	Standard DC Power Filter BNX002-01.....	£6.99

SNAP-ON FERRITE CORES Snap-fit ferrite cores for round cables with diameters from 4mm to 19mm. Provide common-mode filtering for multi-strand, and differential-mode filtering for single conductors. UL94-VO rated polypropylene cases.



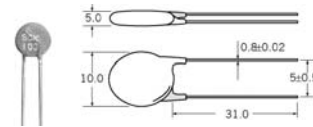
Technical specification

Max cable dia mm	A	B	C	D	Typical impedance Ohms		
					10MHz	25MHz	100MHz
5.3	12.8	5.1	25	5.6	60	100	180
5.3	17.3	5.1	36.2	8.4	100	169	280
7	20	6.6	39.4	9.78	113	188	310
10.5	23.7	10.2	39.4	11.7	81	144	240
19	29.2	18.8	42	14.7	69	125	220

A= width, B= core diameter, C=overall length, D=height(open)

CODE	TYPE	PRICE
13-0000	Snap-on Ferrite Core 5.3mm/180R.....	£3.99
13-0002	Snap-on Ferrite Core 5.3mm/280R.....	£5.99
13-0004	Snap-on Ferrite Core 7.0mm.....	£5.99
13-0006	Snap-on Ferrite Core 10.5mm.....	£11.49
13-0008	Snap-on Ferrite Core 19.0mm.....	£12.99

NTC INRUSH LIMITERS a range of NTC thermistors designed to limit current flow to a low value when initially switched on, for protection against high inrush currents in AC/DC power supplies, lighting circuits, motors and general 'soft start' techniques. Operating temperature -40° to +170°C. Sold individually.



Technical specification

Zero power resistance max.current	Steady state current constant	Resistance approx. at	Thermal dissipation	Thermal time	A	B	C	Order code
120Ω	1A	2.29Ω	14mw/°C	35s	10.0	5.0	5.0	580-235
2.5Ω	5A	0.1Ω	13mw/°C	35s	10.0	5.0	5.0	580-237

CODE	TYPE	PRICE
580-235	Inrush Limiter 120Ω 1A.....	£1.89
580-237	Inrush Limiter 2.5Ω 5A.....	£1.89

TRANSIENT VOLTAGE SUPPRESSORS

TRANSZORB TRANSIENT SUPPRESSORS TranZorb semiconductor devices specifically designed for transient voltage suppression. Features include high surge handling, ultra-fast response time and flat voltage clamping at high currents. Applications include the protection of CMOS, ITL and MPU devices. Unidirectional type suitable for DC applications. Sold individually.



Technical Specification

Peak Reverse Working Voltage VRM	Max Breakdown Voltage VBR	Max Reverse Voltage IRMSM	IT MA	Max reverse current IRSM(A)	Dimensions
500W types					
5.0	6.4 - 7.0	9.2	10	54.3	6.5 X 3.2
1500W types					
5.8	6.45 - 7.14	10.5	10	143.0	9.4 X 5.2
12.8	14.3-15.8	21.2	1	70.8	9.4 X 5.2
15.3	17.1-18.9	26.2	1	59.5	9.4 X 5.2
28.2	31.4-34.7	45.7	1	33.0	9.4 X 5.2

Pk Reverse

CODE	TYPE	Working Volt	Power	PRICE
590-020	TransZorb Suppressor	5.0	500W.....	£0.99
590-040	TransZorb Suppressor	5.8	1500W.....	£0.99
13-0010	TransZorb Suppressor	12.8	1500W.....	£0.99
590-060	TransZorb Suppressor	28.2	1500W.....	£0.99

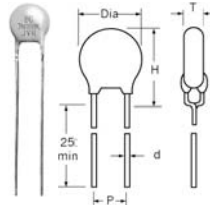
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METAL OXIDE VARISTORS

METAL OXIDE VARISTORS a comprehensive range of voltage dependent metal oxide varistors for suppressing mains borne transients, spikes etc. Epoxy coated disc construction with radial leads. When the protected equipment or circuit encounters a high voltage spike the varistor changes impedance from its normal high standby value to a very low conducting value thus clamping the transient voltage to a protective level. The varistor absorbs the unwanted high voltage pulse protecting voltage sensitive components against damage. Sold individually.

Technical Specification

Response time	<25ns
Voltage coefficient/temperature	-0.5%/°C
Insulation resistance	<1 x 10 ⁹ MΩ@ 500V
Insulation Voltage	2500V
Max. operating Voltage	+85 °C
Max. working surface temperature	+115°C
Package	Dia Max. H. Max P d
A	6.5 11.0 5.0 0.6
B	8.4 12.0 5.0 0.6
C	11.5 15.5 7.5 0.8
D	15.6 20.5 7.5 0.8
E	21.8 28.0 10.0 1.0



Maximum operating Voltage(v)	Varistor Voltage(v)	Maximum clamping Voltage (v) at (A)	withstanding surge current	rated power (W)	Energy (J)	order code
AC DC Nom	Min Max	(v) at (A)	1 surge (A) 2 surges (A)	(W)	(2ms)	
11 14 18	16 20	36@2.5A	250 125	0.02	0.8	580-239
14 18 22	20 24	43@2.5A	250 125	0.02	0.9	580-240
20 36 33	30 36	65@2.5	500 250	0.05	4.4	580-243
30 38 47	42 52	93@2.5A	250 125	0.02	1.8	580-244
35 45 56	50 62	110@5A	500 250	0.05	5.5	580-245
50 65 82	74 90	135@10A	1200 600	0.25	3.5	580-246
150 200 240	216 264	395@25A	2500 1250	0.4	25.0	580-253
230 300 360	324 396	595@25A	2500 1250	0.4	35.0	580-259
250 320 390	351 429	650@10A	1200 600	0.25	17.0	580-261
250 320 390	351 429	650@100A	6500 4000	1.0	130.0	580-262
275 350 430	387 473	710@10A	1200 600	0.25	20.0	580-263
275 350 430	387 473	710@25A	2500 1200	0.4	45.0	580-264
275 350 430	387 473	710@50A	4500 2500	0.6	75.0	580-265
300 385 470	423 517	775@10A	1200 600	0.25	20.0	580-267
300 385 470	423 517	775@50A	4500 2500	0.6	80.0	580-268
420 560 680	612 748	1120@50A	4500 2500	0.6	90.0	580-269
460 615 750	675 825	1240@50A	4500 2500	0.6	100.0	580-271

CODE	TYPE	Voltage (V ac)	Energy Joules	Pack- age	T mm	PRICE
580-239	Metal Oxide Varistor	11V	0.8	B	3.9.....	£0.45
580-240	Metal Oxide Varistor	14V	0.9	B	3.6.....	£0.45
580-243	Metal Oxide Varistor	20V	4.4	B	4.4.....	£0.45
580-244	Metal Oxide Varistor	30V	1.8	B	3.9.....	£0.45
580-245	Metal Oxide Varistor	35V	5.5	C	4.6.....	£0.45
580-246	Metal Oxide Varistor	50V	3.5	B	3.3.....	£0.45
580-259	Metal Oxide Varistor	230V	35.0	C	4.9.....	£0.45
580-261	Metal Oxide Varistor	250V	17.0	B	4.5.....	£0.45
580-262	Metal Oxide Varistor	250V	130.0	E	5.6.....	£0.55
580-263	Metal Oxide Varistor	275V	20.0	B	4.7.....	£0.45
580-264	Metal Oxide Varistor	275V	45.0	C	5.2.....	£0.45
580-265	Metal Oxide Varistor	275V	75.0	D	5.3.....	£0.45
580-267	Metal Oxide Varistor	300V	20.0	B	4.9.....	£0.45
580-268	Metal Oxide Varistor	300V	80.0	D	5.5.....	£0.45

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HIGH CURRENT LOW PASS FILTER

HIGH CURRENT LOW PASS FILTER the 4206-001LF bushing filter is designed to suppress unwanted EMI/RFI noise in power circuits where high current ratings are applied. Pi-section for better filtering. 25A current rating, 1,000V working voltage. Applications include microwave and telecomms, datacomms, industrial sensors and control systems.



Technical specification

Current rating	25A
Operating temperature range	-55°C to +125°C
Capacitance Attenuation dB (500 system)	
Value	Voltage 85°C 10MHz 100MHz 1GHz
3000pF	1000V 10 55 70

CODE	TYPE	PRICE
13-0038	High Current Low Pass Filter 3000pF.....	£10.99

CHASSIS MOUNTING PI-SECTION FILTER

CHASSIS MOUNTING PI-SECTION FILTER the 4209LF series bushing filters combine ceramic capacitor and ferrite inductor technology to provide a chassis mount (pi) filter. Suppresses unwanted EMI/RFI in a wide range of applications where a high insertion loss is required. 5.1mm mounting, hex nut and locking washer. 350V DC working voltage. Applications include microwave and telecomms, datacomms, industrial sensors and control systems



Technical specification

Current rating	10A
Operating temperature range	-55°C to +125°C
Capacitance Attenuation dB (500 system)	
Value	Voltage 85°C 10MHz 100MHz 1GHz 10GHz
5,500pF	300V 5 45 70 70

CODE	TYPE	PRICE
13-0036	Chassis Mount PI-Section Filter 5500pF.....	£6.69

SUB-MINI CERAMIC FILTERS

M3 SUB-MINIATURE CERAMIC FILTERS the 4400LF series miniature bushing filters incorporate ceramic capacitor technology to provide a chassis-mount feed-through for low pass filtering applications where space is at a premium. 3.5mm mounting hole, hex nut and locking washer, M3 thread. 10A DC current rating, applications include microwave and telecomms, datacomms, industrial sensors and control systems.



Technical specification

Current rating	10A
Operating temperature range	-55°C to +125°C
Capacitance Attenuation dB (500 system)	
Value	Voltage 85°C 10MHz 100MHz 1GHz 10GHz
1,000pF	300V 5 20 35 45
4,700pF	150V 15 30 45 55

CODE	TYPE	PRICE
13-0032	M3 Subminiature Filter 1000pF.....	£5.99
13-0034	M3 Subminiature Filter 4700pF.....	£5.99

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CERAMIC FEED-THROUGH CAPACITORS

CERAMIC FEED-THROUGH CAPACITORS the 2499LF series bushing feed-throughs incorporate ceramic capacitors for low pass filtering where rugged chassis mounting and high current are required. Working voltages up to 500V DC, 20A current handling. Hex nut and locking washer, Industry standard size. Applications include power supplies, power amplifiers, control and process instrumentation.



Technical specification

Current rating 20A
Voltage rating 85°C 500V
Capacitance Attenuation dB (500 system)

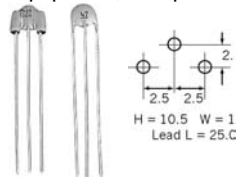
Value	10MHz	100MHz	1GHz	10GHz
100pF	-	5	20	28
1,000pF	3	20	35	40
10,000pF	20	35	50	55

CODE	TYPE	PRICE
13-0028	Ceramic Feed Through Capacitor 100pf.....	£4.65
13-0030	Ceramic Feed Through Capacitor 1000pf.....	£4.65

THREE TERMINAL CAPACITORS

THREE TERMINAL CAPACITORS conventional capacitors have a high residual inductance within the lead wires impeding the path of high frequency noise to ground. These three terminal capacitors form a T-filter providing high inductance in series with the line via two ferrite beads and low inductance to ground via the bypass capacitor. They therefore provide excellent attenuation with increased frequency over conventional capacitors. Applications include noise suppression in office equipment, computers and TV

Leads are in-line on a 2.5mm pitch.
Dimensions:-
50V type, H=7mm, W=6mm;
100V & 16V types
H=6mm, W=8mm.
Lead length 33mm.



Technical Specification

Capacitance pF	Tolerance	Effective Frequency Range (50 series 20dB min) Mhz.	Rated Voltage	Ferrite beads
270	±20%	400-1000	50	No
10000	+80 to -20%	8-1000	50	No
100	±20%	200-1050	100	Yes
220	±20%	110-1000	100	Yes
270	±20%	90-1000	100	Yes
470	±20%	70-1000	100	Yes
1000	±20%	20-1000	100	Yes
10000	±30%	7 to 1000	100	Yes

CODE	VOLTAGE	VALUE(pF)	PRICE
590-085	50V.....	270.....	£0.72
590-100	50V.....	10000.....	£0.72
590-115	100V.....	100.....	£0.72
590-120	100V.....	220.....	£0.72
590-125	100V.....	270.....	£0.72
590-130	100V.....	470.....	£0.72
590-135	100V.....	1000.....	£0.72
590-145	100V.....	10000.....	£0.72

PRODUCT CODES

PLEASE NOTE - IT IS VERY IMPORTANT TO USE THE CORRECT PRODUCT CODE FOR THE ITEMS YOU WISH TO ORDER

T-NETWORK VARISTOR

T-NETWORK VARISTOR a three terminal miniature T-network varistor comprising a capacitor linked to two internal ferrite bead inductors designed to eliminate noise and protect sensitive semi-conductors. Pins on 2.5mm pitch. Dimensions 8.0mm(w) x 10.5mm(h) x 2.54mm(d)
Sold individually.



Technical Specification

Varistor voltage	25V DC	Capacitance	220pF ±20%
Rated voltage	50V DC	Temperature range	-40° to +105°C
Rated current	6A	Peak pulse current	100A

CODE	TYPE	PRICE
590-155	T-network Varistor.....	£1.15

FERRITE BEADS

FERRITE BEADS a ferrite bead manufactured in A5 material for placing on insulated cables or formed wire leads to obtain a desired value of inductance. Dimensions 3.5mm diameter, 4.0mm long with centre hole 1.2mm diameter. Applications include high frequency suppression in low impedance circuits. Supplied in packs of 10.



CODE	TYPE	PRICE
590-165	Ferrite Beads Pack of 10.....	£0.79

FERRITE BEAD INDUCTORS

BEAD INDUCTORS ferrite bead inductors offered in both radial and axial lead versions offering noise suppression over a frequency range of 9-900MHz at 7A. Sold individually.



Technical specification

	Axial type	Radial type
Dimensions	5 x 6.3mm dia	8.4 x 15mm(h)
Lead Pitch	-	5.0 ±0.8
Effective frequency range(Z=50)	12MHz - 1GHz	20MHz - 1GHz
Current rating	7A	6A

CODE	TYPE	PRICE
590-170	Axial Inductor.....	£0.24
590-175	Radial Inductor.....	£0.36

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