OXLEY product information

emi FILTERS

RFI suppression filters for armament systems 0141 Series

This range of EMI/RFI Suppression Components has been designed for use in military applications where electrical transients, however generated, would cause equipment malfunction. The units are primarily intended for use in electrical ignition circuits for explosive components. All single line filters have been approved to the exacting requirements of the UK Ministry of Defence Specification WE772. Twin line filters comprise 2 discrete lines and are made in exactly the same manner as the single line devices. Whilst the WE772 specification does not accommodate twin line devices, such devices are widely accepted for use in Ministry projects where a twin line package is found desirable. WE772 requires that filters shall be able to continuously dissipate 2 watts of rf power without unacceptable degradation of the insertion loss. All devices in the 0141 Series have been shown to be capable of dissipation of 10 watts of rf power.

For advice on the use of filters, please contact the Application Engineering Department.

technical data

Rated voltage: 85 VDC plus switching transients to BS3G100

Operating temperature range:
-60°C to +150°C

Proof voltage: 250 VDC for 30 seconds

Shock: 1000gn (9800m/s²)

Random motion vibration: Up to 0.2g²/Hz
Band width 10 to 200Hz

Linear acceleration: 250gn (2452m/s²)

Relative humidity: Up to 95%

Air pressure:
54mm to 800mm Hz(72mbar to 1066mbar)

Finish: Electro tin flow brightened

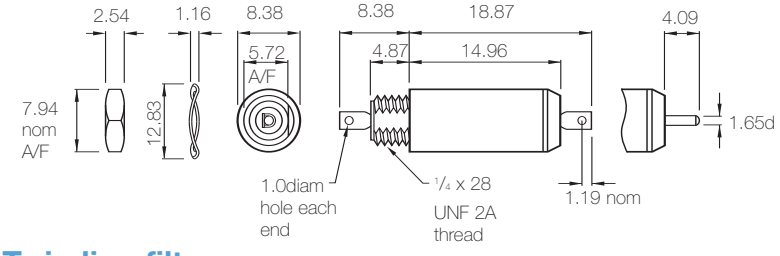
Weight *complete with nut and washer:*
Single Line: 5.25gmax.
Twin Line: 500(L) Series 21.5g; 600(P) Series 22.5g

Mounting torque:
Single Line: 1.7 - 2.8 N-m (15 - 25 lbf-in)
Twin Line: 2.8 - 3.9 N-m (25 - 34 lbf-in)

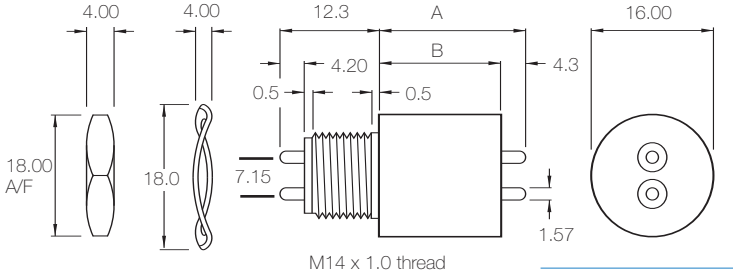
Insertion loss: See page 4

Single line filters

all dimensions are in millimetres and are maximum unless otherwise stated



Twin line filters

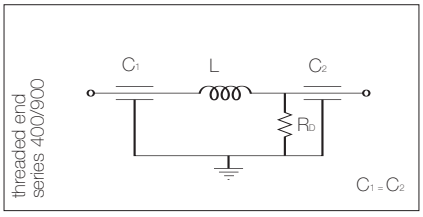


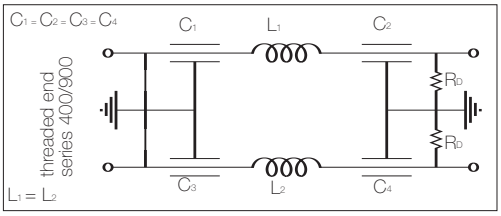
configuration	A	B
Pi	22.7	18.4
L	18.8	14.5

All ranges are available with tag or pin terminations.
If pin terminations are ordered, please add suffix 'P' to code (ie 0141 - 002P)

Single line Pi filters

type number	total capacitance µF min	inductance at 1kHz µH min	series resistance Ω	shunt resistance R_D MΩ	current amps	current pulse to WE772 amps 50ms	300ms	10s	60s
0141-002	0.2	80	0.06 max	10 ± 25%	4.0	-	17.0	-	10.0
0141-003	0.2	80	2.5 ± 15%	10 ± 25%	0.75	6.0	3.0	-	-
0141-004	0.2	80	5.2 ± 15%	10 ± 25%	0.50	6.0	3.0	-	-
0141-005	0.2	80	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-006	0.2	80	2.5 ± 15%	500 min.	0.75	6.0	3.0	-	-
0141-007	0.2	80	5.2 ± 15%	500min.	0.50	6.0	3.0	-	-
0141-008	0.2	80	0.4 + 0-30%	10 ± 25%	2.0	-	17.0	3.0	-
0141-009	0.2	80	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-
0141-012	0.2	80	0.06 max.	4.7 ± 25%	4.0	-	17.0	-	10.0
0141-013	0.2	80	2.5 ± 15%	4.7 ± 25%	0.75	6.0	3.0	-	-
0141-014	0.2	80	5.2 ± 15%	4.7 ± 25%	0.50	6.0	3.0	-	-
0141-018	0.2	80	0.4 + 0-30%	4.7 ± 25%	2.0	-	17.0	3.0	-
0141-023	0.04	2400	2.5 ± 15%	4.7 ± 25%	0.75	6.0	3.0	-	-
0141-024	0.04	2400	5.2 ± 15%	4.7 ± 25%	0.50	6.0	3.0	-	-
0141-026	0.04	2400	2.5 ± 15%	500 min.	0.75	6.0	3.0	-	-
0141-027	0.04	2400	5.2 ± 15%	500 min.	0.50	6.0	3.0	-	-
0141-028	0.04	2400	0.4 + 0-50%	4.7 ± 25%	2.0	-	17.0	3.0	-
0141-029	0.04	2400	0.4 + 0-50%	500 min.	2.0	-	17.0	3.0	-
0141-032	0.2	260	0.06 max.	4.7 ± 25%	4.0	-	17.0	-	10.0
0141-035	0.2	260	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-043	0.02	3700	2.5 ± 15%	4.7 ± 25%	0.75	6.0	3.0	-	-
0141-044	0.02	3700	5.2 ± 15%	4.7 ± 25%	0.5	6.0	3.0	-	-
0141-046	0.02	3700	2.5 ± 15%	500 min.	0.75	6.0	3.0	-	-
0141-047	0.02	3700	5.2 ± 15%	500 min.	0.5	6.0	3.0	-	-
0141-048	0.02	3700	0.4 + 3-0%	4.7 ± 25%	2.0	-	17.0	3.0	-
0141-049	0.02	3700	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-
0141-200	0.4	25	0.015 max.	10 ± 25%	10.0	-	-	-	-
0141-201	0.4	25	0.015 max.	500 min.	10.0	-	-	-	-
0141-210	0.4	25	0.015 max.	4.7 ± 25%	10.0	-	-	-	-





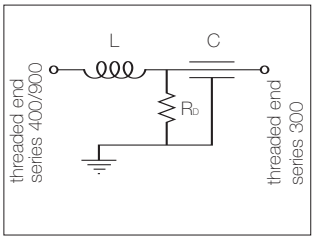
Twin line Pi filters

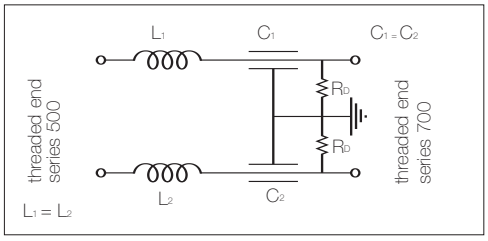
For each single line within the filter

type number	total capacitance µF min	inductance at 1kHz µH min	series resistance Ω	shunt resistance R_D MΩ	current amps	current pulse to WE772 amps 50ms	300ms	10s	60s
0141-602	0.2	80	0.06 max.	10 ± 25%	4.0	-	17.0	-	10.0
0141-603	0.2	80	2.5 ± 15%	10 ± 25%	0.75	6.0	3.0	-	-
0141-604	0.2	80	5.2 ± 15%	10 ± 25%	0.50	6.0	3.0	-	-
0141-605	0.2	80	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-606	0.2	80	2.5 ± 15%	500 min.	0.75	6.0	3.0	-	-
0141-607	0.2	80	5.2 ± 15%	500 min.	0.50	6.0	3.0	-	-
0141-608	0.2	80	0.4 + 0-30%	10 ±25%	2.0	-	17.0	3.0	-
0141-609	0.2	80	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-

Single Line L Filters

type number	total capacitance µF min	inductance at 1kHz µH min	series resistance Ω	shunt resistance R_D MΩ	current amps	current pulse to WE772 amps			
						50ms	300ms	10s	60s
0141-302/-402	0.2	450	0.06 max.	10 ± 25%	4.0	-	17.0	-	10.0
0141-303/-403	0.2	450	2.5 ± 15%	10 ± 25%	0.75	6.0	3.0	-	-
0141-304/-404	0.2	450	5.2 ± 15%	10 ± 25%	0.50	6.0	3.0	-	-
0141-305/-405	0.2	450	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-306/-406	0.2	450	2.5 ± 15%	500 min.	0.75	6.0	3.0	-	-
0141-307/-407	0.2	450	5.2 ± 15%	500 min.	0.50	6.0	3.0	-	-
0141-308/-408	0.2	450	0.4 + 0-30%	10 ± 25%	2.0	-	17.0	3.0	-
0141-309/-409	0.2	450	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-
0141-312/-412	0.2	450	0.06 max.	4.7 ± 25%	4.0	-	17.0	-	10.0
0141-313/-413	0.2	450	2.5 ± 15%	4.7 ± 25%	0.75	6.0	3.0	-	-
0141-314/-414	0.2	450	5.2 ± 15%	4.7 ± 25%	0.5	6.0	3.0	-	-
0141-318/-418	0.2	450	0.4 + 0-30%	4.7 ± 25%	2	-	17.0	3.0	-
0141-958	0.1	2000	0.4 + 0-30%	4.7 ± 25%	2.0	-	17.0	3.0	-
0141-959	0.1	2000	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-
0141-965	0.02	260	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-975	0.02	260	0.06 max.	4.7 ± 25%	4.0	-	17.0	-	10.0
0141-982	0.1	450	0.06 max.	4.7 ± 25%	4.0	-	17.0	-	10.0
0141-985	0.1	450	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-998	0.02	2000	0.4 + 0-30%	4.7 ± 25%	2.0	-	17.0	3.0	-
0141-999	0.02	2000	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-





Twin Line L Filters

for each single line within the filter

type number	total capacitance µF min	inductance at 1kHz µH min	series resistance Ω	shunt resistance R_D MΩ	current amps	current pulse to WE772 amps			
						50ms	300ms	10s	60s
0141-502/-702	0.2	450	0.06 max.	10 ± 25%	4.0	-	17.0	-	10.0
0141-503/-703	0.2	450	2.5 ± 15%	10 ± 25%	0.75	6.0	3.0	-	-
0141-504/-704	0.2	450	5.2 ± 15%	10 ± 25%	0.50	6.0	3.0	-	-
0141-505/-705	0.2	450	0.06 max.	500 min.	4.0	-	17.0	-	10.0
0141-506/-706	0.2	450	2.5 ± 15%	500 min.	0.75	5.0	3.0	-	-
0141-507/-707	0.2	450	5.2 ± 15%	500 min.	0.50	6.0	3.0	-	-
0141-508/-708	0.2	450	0.4 + 0-30%	10 ± 25%	2.0	-	17.0	3.0	-
0141-509/-709	0.2	450	0.4 + 0-30%	500 min.	2.0	-	17.0	3.0	-

Special requirements

Where the space available for the location of the filter is such that the size or the method of mounting prohibits the use of a standard range product, special metal work can be designed to facilitate the inclusion of the filter device within the system.

Whilst such devices are not encompassed by the WE772 specification, by utilising only those components which are employed in the approved ranges, through structural similarity and through the quality assurance disciplines being maintained to the same high level, these special devices are manufactured in accordance with WE772 requirement. Such devices are used in various Ministry of Defence contracts and fully satisfy the requirements of the relevant authorities.

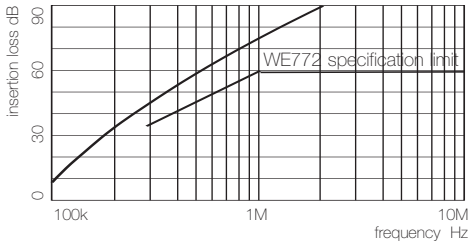
Product safety

Operation outside the stated ratings shown in this data sheet may result in premature failure or a safety hazard. Product Safety information is available on request.

OXLEY product information

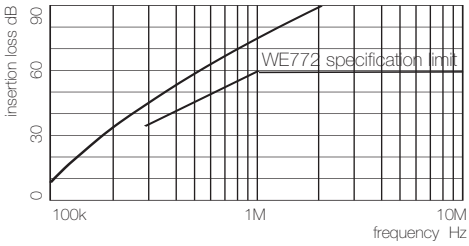
0141 000 & 600 series

Balanced termination impedance - 50Ω

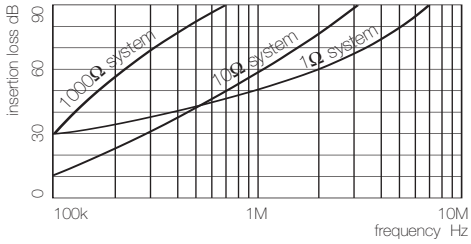


0141- 200 series

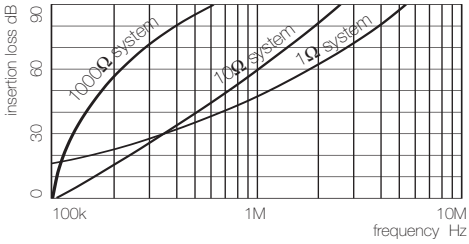
Balanced termination impedance - 50Ω



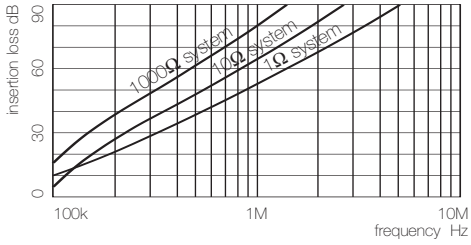
Balanced termination impedance



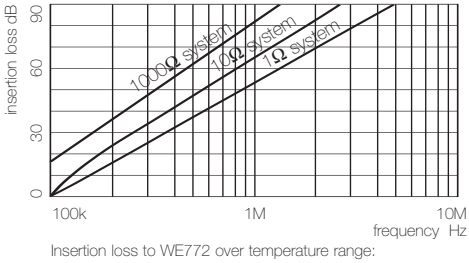
Balanced termination impedance



Unbalanced termination impedance



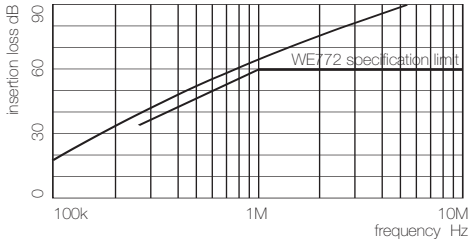
Unbalanced termination impedance



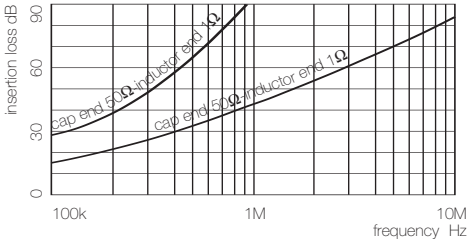
Insertion loss to WE772 over temperature range:
-40°C to +150°C

300, 400, 500, 700 & 900 series

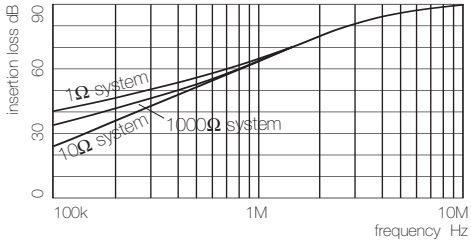
Balanced termination impedance - 50Ω



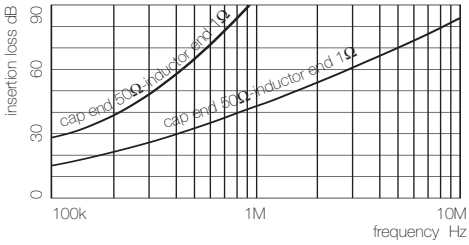
Unbalanced termination impedance



Balanced termination impedance



Unbalanced termination impedance



Typical 0141 Series insertion loss characteristics over temperature range -60°C to +150°C, unless otherwise stated

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