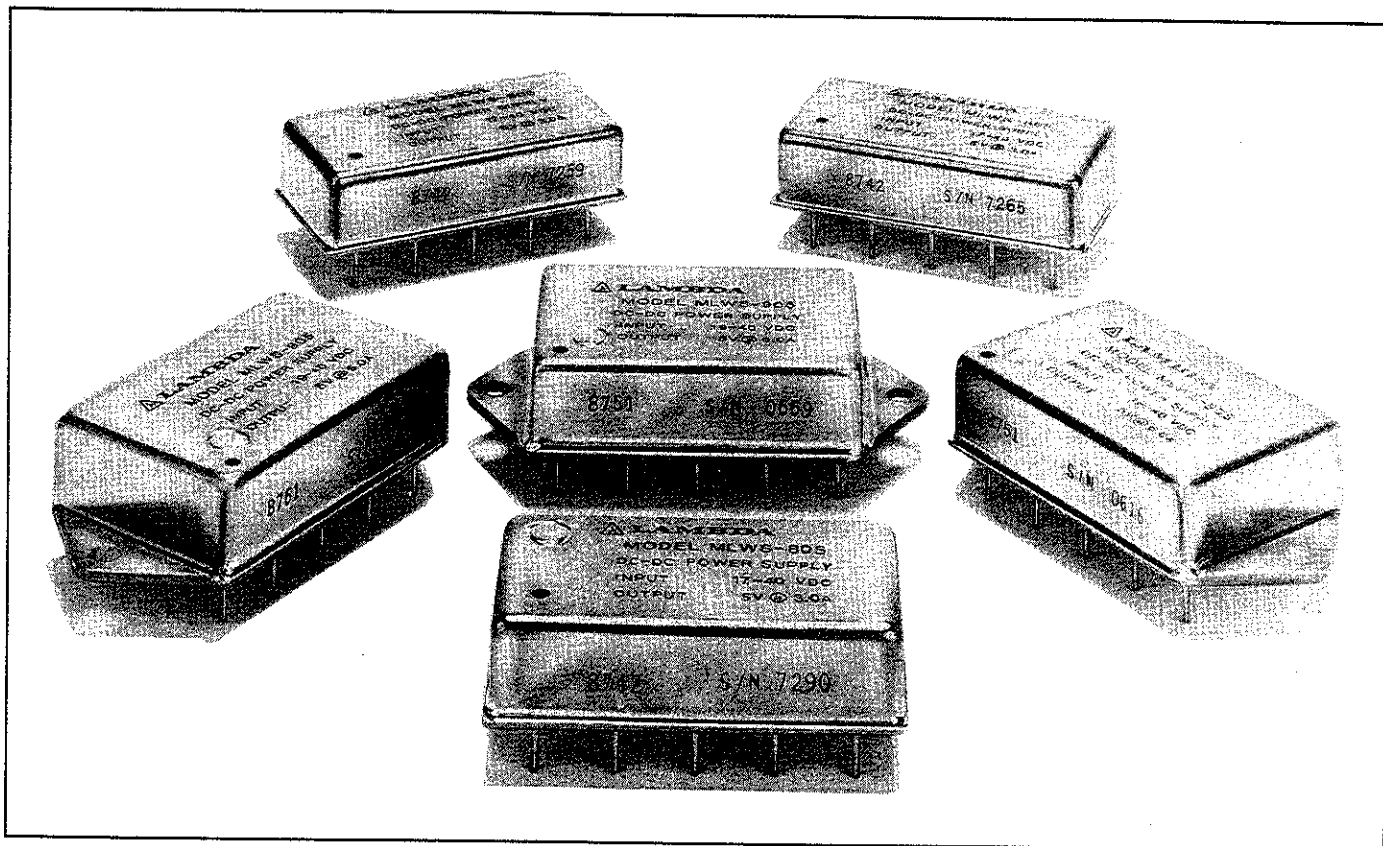


PART II — DC-TO-DC CONVERTERS

LAMBDA'S MIL-ENVIRONMENT MLW SERIES



HIGH DENSITY, HIGH RELIABILITY MILITARIZED DC-TO-DC CONVERTERS

Lambda has introduced many new models to the MLW Series of isolated DC-to-DC converters and filters for military and civilian aerospace applications:

The MLW-1000 single, dual and triple output models up to 60W; the MLWF-600 high power filters to complement the MLW-1000; the MLW-300 single and dual output models up to 120W feature full load operation at 125°C; the MLWF-300 & 704 filters for operation with baseplate temperatures as high as 125°C.

All models in the MLW Series feature inputs centered around 28VDC in compliance with MIL-STD-704D requirements. The use of thick film hybrid technology provides high density, high reliability and superior regulation without external components. Screening to MIL-STD-883 is available for the most rugged applications. The test methods are:

- | | |
|---|---|
| ☐ Pre Cap Internal Visual Inspection: Per method 2017 | ☐ Gross Leak: Per method 1014 |
| ☐ Stabilization Bake: 24 hours @ 125°C per method 1008 condition B | ☐ Fine Leak: Per method 1014, condition A |
| ☐ Temperature Cycle: 10 times, -55°C to 125°C per method 1010 | ☐ Burn-in: 96 hours @ 70°C ambient |
| ☐ Constant Acceleration: 500g per method 2001 | ☐ Final electrical test (25°C) |
| | ☐ Final Visual Inspection: Per method 2009 |

MIL-STD-883 is specifically associated with hybrid circuits. Due to the substrate mounting of the magnetics and MLC capacitors, the MLW's are not homogeneous hybrids. The constant acceleration is therefore limited to 500g's to avoid mounting damage and the burn-in is limited to 70°C ensuring maximum capacitor temperature remains below 120°C. All screened units are hermetically sealed and are guaranteed to have a maximum leakage rate of 1×10^{-3} ATM-cc/Sec. Due to the complex implementation of the screening there is a 25% additional charge per unit. Screened units are designated by the suffix "-E5" on the part number.

Lambda's MLWF filters allow the converters to meet conducted EMI limits per MIL-STD 461B CE03. In addition, these filter modules provide input voltage transient protection as required by MIL-STD 704B thru D. A fast reacting (1 pico second) transient suppressor clamps the input voltage at approximately 47VDC, protecting the converter from damage. MLWF filters also provide reverse voltage protection for the converter.

PART II — DC-TO-DC CONVERTERS

LAMBDA'S MIL-ENVIRONMENT MLW SERIES

DC OUTPUT

Output voltage range shown in tables.

REGULATED VOLTAGE

regulation, line	(low line to high line) 0.10% on MLWS-605, 815 MLWD-815, 915. 0.12% on MLWS-812 MLWD-812, 912. 0.14% on MLWS-1015. 0.17% on MLWS-1012 MLWD-1015. 0.20% on MLWS-705, 805, 915 and 5V output of MLWT-952, 955. 0.21% on MLWD-1012. 0.25% on MLWS-912. 0.33% on MLWS-615 MLWD-615. 0.40% on MLWS-905, 1005; $\pm 12V$ outputs of MLWT-952; $\pm 15V$ outputs of MLWT-955; $\pm 5V$ output of MLWT-1022, 1055. 0.42% on MLWS-612 MLWD-615. 1.40% on $\pm 15V$ output of MLWT-1055. 1.70% on $\pm 12V$ outputs of MLWT-1022. (50mA preload required on 5V output of all triple output models.)
regulation, load	0.10% on MLWS-605, 815 MLWD-815. 0.13% on MLWS-812, 915 MLWD-812, 912. 0.17% on MLWS-912, 1015. 0.21% on MLWS-1012. 0.33% on MLWS-615 MLWD-615 0.34% on MLWD-915, 1015. 0.40% on MLWS-705, 805, 905, 1005; MLWT-952, 955; 5V output of MLWT-1022, 1055. 0.42% on MLWS-612 MLWD-612, 912, 1012. 0.60% on MLWS-1003. 3.00% on $\pm 15V$ outputs of MLWT-1055. 5.00% on $\pm 12V$ outputs of MLWT-1022. (2MHz bandwidth, 25°C, 28VDC Input Voltage.) 30mV pk-pk on MLWS-1003; $\pm 12V$ outputs of MLWT-952; $\pm 15V$ outputs of MLWT-955. 50mV pk-pk on MLWS-905, 1005, 1012, 1015; MLWD-1012, 1015. 60mV pk-pk on MLWS-605, 612, 705, 805, 815; MLWD-612, 615. 65mV pk-pk on MLWS-912, 915. 80mV pk-pk on MLWS-805; 5V output of MLWT-952, 955. 85mV pk-pk on MLWT-1022, 1055.
ripple and noise	

INPUT VOLTAGE RANGE

MLWT-952, 955: 16VDC to 36VDC. MLWS-705: 16VDC to 40VDC. MLWS-605, 612, 805, 812, 815, MLWD-812, 815: 17VDC to 40VDC. MLWS-912, 915, MLWD-912, 915: 18VDC to 40VDC. MLWS-615, 905, 1003, 1005, 1012, 1015, MLWD-615, 1012, 1015, MLWT-1022, 1055: 19VDC to 40VDC.

SHORT CIRCUIT PROTECTION

Indefinite short circuit protection on all outputs.

INPUT VOLTAGE

28VDC Nominal.

EFFICIENCY

74% minimum on MLWS-605, 1003. 76% minimum on MLWS-615; MLWD-615, 812, 815; MLWT-952, 955. 78% minimum on all other models.

INPUT RIPPLE CURRENT

Measured over a 2MHz bandwidth, with 28VDC input at full load. Maximum 50mA pk-pk reflected input current, on all models.

INPUT VOLTAGE TRANSIENTS

50VDC transient for a maximum duration of 50mS on all models. All models will meet the voltage transient specifications for MIL-STD-704(A-D) and MIL-STD-1275 with appropriate MLWF filter.

INPUT REVERSE VOLTAGE PROTECTION

All models will meet with an appropriate MLWF filter.

OPERATING TEMPERATURE RANGE

-55°C to +85°C (baseplate temperature). Operation to 110°C for MLWS-605. Operation to +130°C for MLWS-605. Operation to +135°C for all other models. Consult derating curves for maximum output power available.

STORAGE TEMPERATURE RANGE

-55°C to +125°C (135°C for MLW-600 Series).

COOLING

All models are conduction cooled and require a suitable heatsink. Consult factory for heatsink information.

OUTPUT VOLTAGE ADJUST

All models have a fixed output voltage, $\pm 1\%$ of nominal value, at an input voltage of 28VDC, full load and 25°C ambient temperature. On MLWS-705 and 805 models, the output voltage can be increased by up to 5% by adding an external resistor, per the chart below, between pins 3 and 4.

Nominal Output Voltage Increase	Ohms (Ω)
+0%	Infinity
+1%	390k
+2%	145k
+3%	63k
+4%	22k
+5%	0k

REMOTE ON/OFF

Active low.

SYNCHRONOUS OPERATION

Available on the following models: MLWS-1005, 1012, 1015 MLWD-1012, 1015 MLWT-1022, 1055. Allows for power supply synchronization with system clock. Consult factory for additional technical data.

EMI

All models will meet MIL-STD-461B, CE03 with an appropriate Lambda MLWF filter.

MOUNTING

PCB mount. Flanges available on most models for additional structural support and thermal transfer.

PHYSICAL DATA

Package Model	Oz. Net	Oz. Ship	Size Inches
MLWS-605, 612, 615	1.3	2.3	1.25 x 1.45 x .325
MLWD-612, 615	1.3	2.3	1.25 x 1.45 x .325
MLWS-705	1.9	2.9	1.12 x 2.12 x .405
MLWS-705F	1.9	2.9	1.12 x 2.89 x .405
MLWS-805, 812, 815	1.9	2.9	1.12 x 2.12 x .495
MLWD-812, 815	1.9	2.9	1.12 x 2.12 x .495
MLWS-805F, 812F, 815F	1.9	2.9	1.12 x 2.89 x .495
MLWD-812F, 815F	1.9	2.9	1.12 x 2.89 x .495
MLWT-952, 955	1.9	2.9	1.35 x 1.95 x .500
MLWT-952F, 955F	1.9	2.9	1.35 x 2.70 x .500
MLWD-912, 915	1.9	2.9	1.35 x 2.70 x .500
MLWS-905, 912, 915	1.9	2.9	1.35 x 2.70 x .500
MLWD-1012, 1015	4.9	5.9	2.45 x 3.20 x .595
MLWT-1022, 1055	4.9	5.9	2.45 x 3.20 x .595
MLWS-1003, 1005, 1012, 1015	4.9	5.9	2.45 x 3.20 x .595

OPTIONS

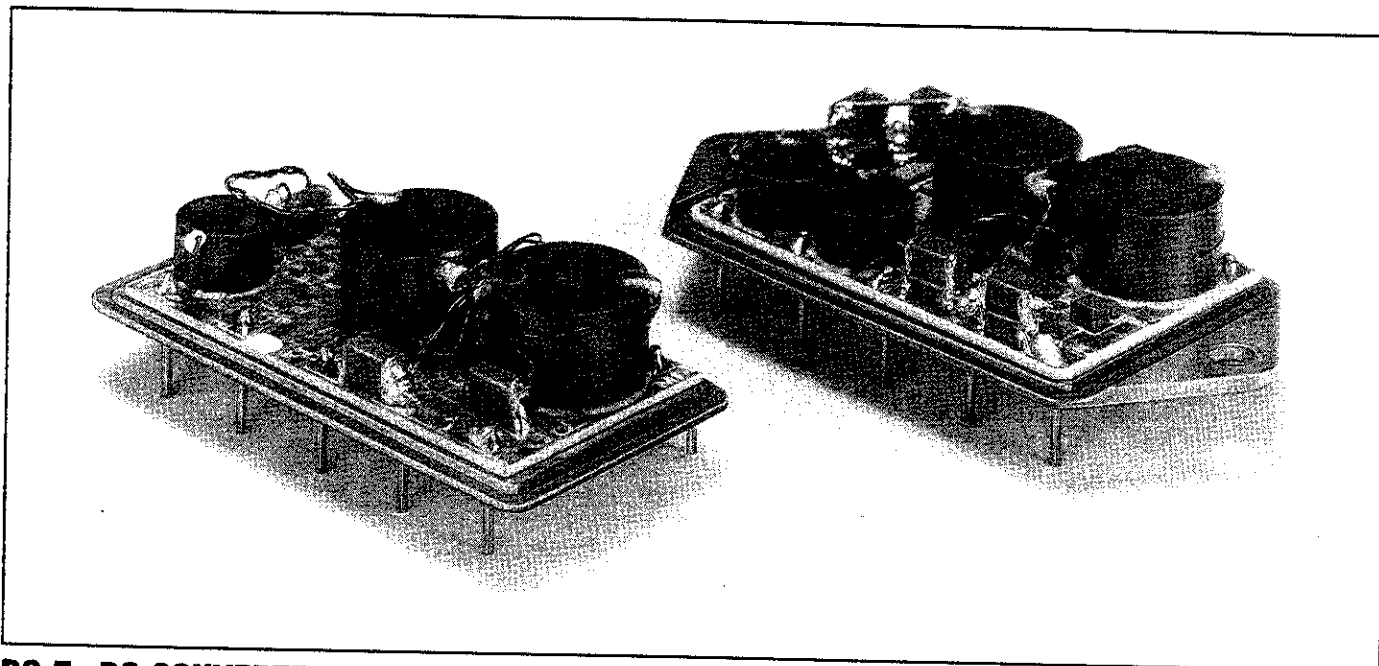
All MLW Series power supplies and MLWF Series filters are available with screening per MIL-STD-883. Consult factory for applicable MIL-STD-883 tests. To order optional screening, add the suffix "ES" to model number and 25% to unit price.

GUARANTEE

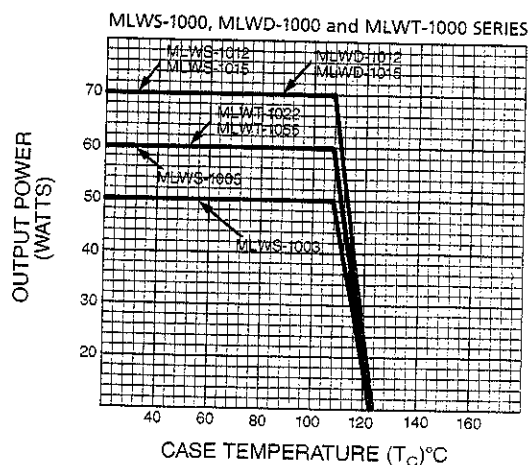
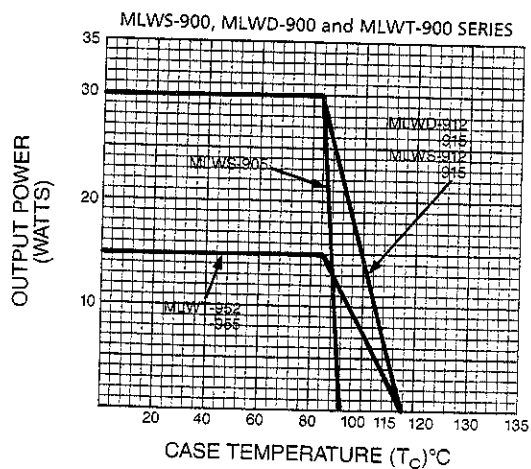
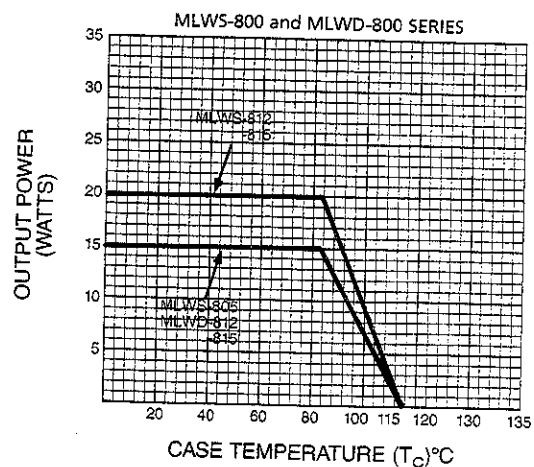
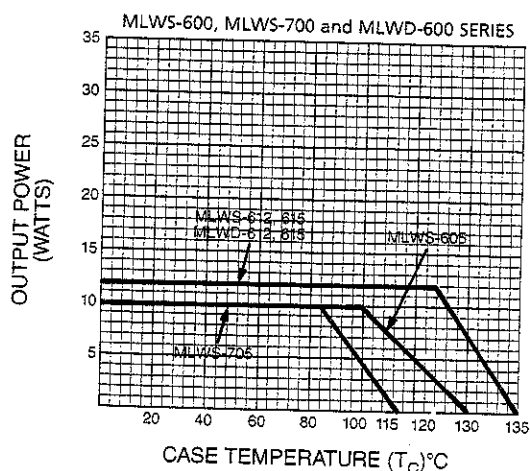
One year guarantee includes labor as well as parts on all MLW Series power supplies and MLWF Series filters.

PART II—DC-TO-DC CONVERTERS

LAMBDA'S MIL-ENVIRONMENT MLW SERIES



DC-TO-DC CONVERTER POWER DERATING CURVES*



*When designing these modules into an application, these power derating curves must be adhered to in order to provide reliable operation.

PART II—DC-TO-DC CONVERTERS

LAMBDA'S MIL-ENVIRONMENT MLW SERIES INPUT FILTERS

MLWF-200/400/600

PARAMETER	CONDITION	MLWF-200			MLWF-400			MLWF-600			UNITS
		MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	
Input Voltage note *1	Steady State	0	28	40	0	28	40	0	28	40	VDC
Input Current note *1	DC Ripple			1.75 0.67			3.8 1.0			5.0 1.2	Amps Amps RMS
Input Clamping Voltage	-55°C +25°C +85°C	38.9 42.3 44.9	43.2 47.0 49.9	47.5 51.7 54.8	38.9 42.3 44.9	43.2 47.0 49.9	47.5 51.7 54.8	38.9 42.3 44.9	43.2 47.0 49.9	47.5 51.7 54.8	VDC
Output Voltage note *2	Steady State	Vout = Vin - lin (Rdc)									VDC
Output Current note *1	Steady State			1.75			3.8			5.0	Amps
DC Resistance (Rdc)	Steady State		0.38	0.42	0.07	0.10	0.15	0.07	0.09	0.10	Ohms
Power Dissipation	Max. Current			1.3			1.6			2.5	Watts
Noise Reduction	15 kHz - 50 MHz		40			40			40		dB
Capacitance	Any Pin to Case	1900		2200	3700		4400	6450		8000	pF
Isolation	Any Pin to Case 500 VDC	100			100			100			MOhm
Operating Temp. note *1	Case Baseplate	-55		+85	-55		+85	-55		+85	°C
Storage Temp.	Case Baseplate	-55		+135	-55		+135	-55		+135	°C
Weight			36	38		39	42		40	43	Grams

MLWF-300

PARAMETER	CONDITION	MLWF-300			UNITS
		MIN	TYP	MAX	
Input Voltage note ⁶	Steady State	0	28	40	VDC
Input Current note ⁶	DC Ripple	—	—	1.75	Amps Amps RMS
Input Clamping Voltage	-55°C +25°C +125°C	40.8 44.7 44.7	45.1 47.0 49.5	49.4 49.4 54.2	VDC
Output Voltage note ⁶	Steady State	Vout = Vin - lin (Rdc)			VDC
Output Current note ⁶	Steady State	—	—	1.75	Amps
DC Resistance (Rdc)	Steady State	—	—	0.25	Ohms
Power Dissipation	Max. Current	—	—	1.3	Watts
Noise Reduction	200 kHz - 399 kHz 400 kHz - 50 MHz		40 60		dB
Capacitance	Any Pin to Case	—	—	0.032	μF
Isolation	Any Pin to Case 500 VDC	100	—	—	MOhm
Operating Temp. note ⁶	Case Baseplate	-55	—	+125	°C
Storage Temp.	Case Baseplate	-65	—	+150	°C
Weight		—	46	48	Grams

NOTES: 1: Above 85°C Case Temperature. Derate Current and Voltage. Ratings as Follows:
a) Input Voltage: Derate linearly to 33 VDC at +125°C Case Temp.
b) Input Ripple Current: Derate linearly to 270mA on MLWF-200, 400mA on MLWF-400 and 480mA on MLWF-600 at +125°C case temp.
c) DC Input & Output Current: Derate linearly to 750mA on MLWF-200 and 1.7 Amp on MLWF-400, 600 at +125°C case temp.
2: Typical Applications. Result in Vout Within 2% of Vin.
3: Meets MIL-STD-1275A (AT) 3.1.3.1 Surge, and MIL-STD-704A Figs 8 and 9. For these standards derate output linearly from 40 W at 105°C to 20 W at 125°C.
4: Meets MIL-STD-461C 10.2 CS06 limits.
5: Meets Panavia SP-P-90001, British Standard BS3G100, and Civil Aircraft D0160 Standards.
6: Above 125°C case temperature derate as follows:
a) Output Ripple Current: Derate linearly to zero at +135°C case temp.
b) DC Input and Output Current: Derate linearly to zero at 135°C case temp.

MLWF-704

T_{CASE} = -55°C to +125°C, V_{IN} = 28 VDC unless otherwise specified.

PARAMETER	CONDITION	MIN	TYP	MAX	UNITS
Input Voltage	Steady State No Load	0	28	40	VDC
	40 Watt Load	16	28	40	VDC
	Transient			450	VDC
Input Voltage Low Line Lockout		7		15	VDC
Input Current	No Load Inhibited			5 2	mA mA
Inhibit Input Voltage	Open Circuit			5.5	VDC
Inhibit Input Current	V _{inh} = 0 to 0.8V			-0.6	mA
Output Power	V _{in} = 16 to 40 VDC			40	W
Internal Power Dissipation	Peak	105°C 125°C		400 200	W W
				30 15	W W
	Continuous	105°C 125°C			
DC Resistance	V _{in} = 16 to 40 VDC 25°C			0.45	ohm
Output Clamp Voltage	40 Watt Load	40		50	VDC
Input Surge Limit	40 W Load, 100 V, 0.5 Ohm Imp ³	0		60	msec
Input Spike Limit	40 W Load, 600V, 50 Ohm Imp ⁴	0		20	μsec
	40 W Load, 400V 0.5 Ohm Imp ⁵	0		20	μsec
Noise Reduction	200 kHz-50 MHz 100 kHz	50	60 30		dB
Capacitance	Pin to Case		10,000		pF
Isolation	Pin to Case, 500 VDC	100			meg- ohm
Operating Temp ¹	Baseplate	-55		+125	°C
Storage Temp		-55		+150	°C
Weight			40		Grams

PART II — DC-TO-DC CONVERTERS

MIL-ENVIRONMENT CONVERTER SELECTOR GUIDE

MLW Series. Conduction Cooled. Single Output. PC Mount.

MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
5V ±1% FIXED									
2.00	97	184	1.125 × 1.455 × .325	\$390	\$370	\$355	\$325	\$300	MLWS-605
2.00	97	184	1.12 × 2.12 × .405	430	410	395	353	336	MLWS-705 ⁽²⁾
3.00	97	184	1.12 × 2.12 × .495	430	410	395	353	336	MLWS-805 ⁽²⁾
12V ±1% FIXED									
1.00	97	184	1.125 × 1.455 × .325	390	370	355	325	300	MLWS-612
1.67	97	184	1.12 × 2.12 × .495	467	444	429	383	365	MLWS-812
15V ±1% FIXED									
0.80	97	184	1.125 × 1.455 × .325	390	370	355	325	300	MLWS-615
1.33	97	184	1.12 × 2.12 × .495	467	444	429	383	365	MLWS-815

Dual Output. PC Mount.

MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
±12V ±1% FIXED									
.500 ⁽³⁾	97	184	1.125 × 1.455 × .325	\$425	\$405	\$385	\$355	\$330	MLWD-612
.625	97	184	1.12 × 2.12 × .495	469	447	431	385	364	MLWD-812
±15V ±1% FIXED									
.400 ⁽⁴⁾	97	184	1.125 × 1.455 × .325	425	405	385	355	330	MLWD-615
.500	97	184	1.12 × 2.12 × .495	469	447	431	385	364	MLWD-815

Triple Output. PC Mount.

V _{OUT} (Volts)	MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
5V ±1% FIXED, ±12V ±1% FIXED										
5	2.00	97	184	1.35 × 1.95 × .500	\$623	\$593	\$573	\$511	\$487	MLWT-952 ⁽⁶⁾
±12	.208									
5V ±1% FIXED, ±15V ±1% FIXED										
5	2.00	97	184	1.35 × 1.95 × .500	623	593	573	511	487	MLWT-955 ⁽⁶⁾
±15	.167									

NOTES:

(1) Baseplate temperature of 85°C.

(2) On these models, the output voltage can be increased by adding a resistor between pin 3 and pin 4. Reference specifications for additional information.

(3) On MLWD-900 Series, up to 27W are available from either output, providing that the total package power does not exceed 30W.

(4) On MLWD-1000 Series, up to 66.5W are available from either output, providing that the total package power does not exceed 70W.

(5) On MLWT-1000 Series, up to 50W are available from any single output, providing that the total package power does not exceed 60W.

(6) Minimum preload of 50mA required on 5V output.

PART II — DC-TO-DC CONVERTERS

MIL-ENVIRONMENT CONVERTER SELECTOR GUIDE

MLW Series. Conduction Cooled. Single Output. Flange Mount.

MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
3.5V ± 1% FIXED									
14.30	97	184	2.45 × 3.20 × .595	\$908	\$865	\$835	\$745	\$710	MLWS-1003
5V ± 1% FIXED									
2.00	97	184	1.12 × 2.89 × .405	448	427	412	367	351	MLWS-705F ⁽²⁾
3.00	97	184	1.12 × 2.89 × .495	448	427	412	367	351	MLWS-805F ⁽²⁾
6.00	97	184	1.35 × 2.70 × .500	641	610	589	526	501	MLWS-905
12.00	97	184	2.45 × 3.20 × .595	908	865	835	745	710	MLWS-1005
12V ± 1% FIXED									
1.67	97	184	1.12 × 2.89 × .495	484	460	444	397	378	MLWS-812F
2.50	97	184	1.35 × 2.70 × .500	641	610	589	526	501	MLWS-912
5.83	97	184	2.45 × 3.20 × .595	908	865	835	745	710	MLWS-1012
15V ± 1% FIXED									
1.33	97	184	1.12 × 2.89 × .495	484	460	444	397	378	MLWS-815F
2.00	97	184	1.35 × 2.70 × .500	641	610	589	526	501	MLWS-915
4.67	97	184	2.45 × 3.20 × .595	908	865	835	745	710	MLWS-1015

Dual Output. Flange Mount.

MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
± 12V ± 1% FIXED									
.625	97	184	1.12 × 2.89 × .495	\$486	\$463	\$447	\$399	\$380	MLWD-812F
1.25	97	184	1.35 × 2.70 × .500	693	660	633	569	542	MLWD-912 ⁽³⁾
2.92	97	184	2.45 × 3.20 × .595	980	934	901	804	766	MLWD-1012 ⁽⁴⁾
± 15V ± 1% FIXED									
.500	97	184	1.12 × 2.89 × .495	486	463	447	399	380	MLWD-815F
1.00	97	184	1.35 × 2.70 × .500	693	660	633	569	542	MLWD-915 ⁽³⁾
2.33	97	184	2.45 × 3.20 × .595	980	934	901	804	766	MLWD-1015 ⁽⁴⁾

Triple Output. Flange Mount.

V _{OUT} (Volts)	MAX CURRENT (Amps) ⁽¹⁾	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
5V ± 1% FIXED, ± 12V ± 1% FIXED										
5	2.00	97	184	1.35 × 2.70 × .500	\$ 641	\$610	\$589	\$511	\$487	MLWT-952F ⁽⁶⁾
± 12	.208									
5	4.00	97	184	2.45 × 3.20 × .595	1025	976	943	841	801	MLWT-1022 ^(5,6)
± 12	1.67									
5V ± 1% FIXED, ± 15V ± 1% FIXED										
5	2.00	97	184	1.35 × 2.70 × .500	641	610	589	511	487	MLWT-955F ⁽⁶⁾
± 15	1.67									
5	4.00	97	184	2.45 × 3.20 × .595	1025	976	943	841	801	MLWT-1055 ^(5,6)
± 15	1.33									

NOTES:

(1) Baseplate temperature of 85°C.

(2) On these models, the output voltage can be increased by adding a resistor between pin 3 and pin 4. Reference specifications for additional information.

(3) On MLWD-900 Series, up to 27W are available from either output, providing that the total package power does not exceed 30W.

(4) On MLWD-1000 Series, up to 66.5W are available from either output, providing that the total package power does not exceed 70W.

(5) On MLWT-1000 Series, up to 50W are available from any single output, providing that the total package power does not exceed 60W.

(6) Minimum preload of 50mA required on 5V output.

PART II—DC-TO-DC CONVERTERS

MIL-ENVIRONMENT CONVERTER SELECTOR GUIDE

MLWF Series. DC Input Filters. PC Mount.

MAX CURRENT (Amps)	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIFFERENTIAL MODE REJECTION (dB)	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
1.75	99	184	40	1.12 × 2.12 × .405	\$145	\$138	\$133	\$118	\$113	MLWF-200
1.75	99	184	40	1.12 × 2.11 × .400	335	310	295	270	250	MLWF-300
3.80	99	184	40	1.12 × 2.12 × .495	178	170	164	147	139	MLWF-400
5.00	99	184	40	1.12 × 2.12 × .495	200	191	184	164	156	MLWF-600

Input Filters, Flange Mount.

MAX CURRENT (Amps)	COMPLETE ELEC. SPEC. PG.	COMPLETE MECH. SPEC. PG.	DIFFERENTIAL MODE REJECTION (dB)	DIMENSIONS (inches)	QTY. 1	QTY. 10	QTY. 25	PRICE QTY. 50	QTY. 100	MODEL
1.75	99	184	40	1.13 × 2.89 × .405	\$164	\$156	\$151	\$134	\$128	MLWF-200F
1.75	99	184	40	1.12 × 2.89 × 0.40	350	325	310	285	265	MLWF-300F
3.80	99	184	40	1.13 × 2.89 × .495	195	186	179	160	153	MLWF-400F
5.00	99	184	40	1.13 × 2.89 × .495	220	210	202	180	172	MLWF-600F
2.50	99	184	50	1.13 × 2.89 × .405	550	524	506	451	430	MLWF-704

NOTES:

1. MLWF-300 and MLWF-300F have 60dB rejection between 400kHz and 50MHz.

Lambda's MLWF Series of high density, high reliability DC input filters provide transient and reverse voltage protection, and EMI filtering for Lambda's MLW Series DC-to-DC converters. With input voltages centered around 28VDC, the MLW and MLWF Series are ideal for worldwide airborne applications. In addition, the MLWF Series provides key MIL-STD-704 (A-D) transient protection and filtering to simplify overall system design. Simply call your local Lambda sales engineer or our factory to discuss your application.

How To Select An Input EMI Filter

Example: For An MLWS-805

1. DETERMINE INPUT AND OUTPUT PARAMETERS:

Efficiency = 76% Minimum
 Minimum Input Voltage = 17 VDC
 Output Voltage = 5 VDC
 Maximum Load Current = 3.0A

2. CALCULATE INPUT CURRENT

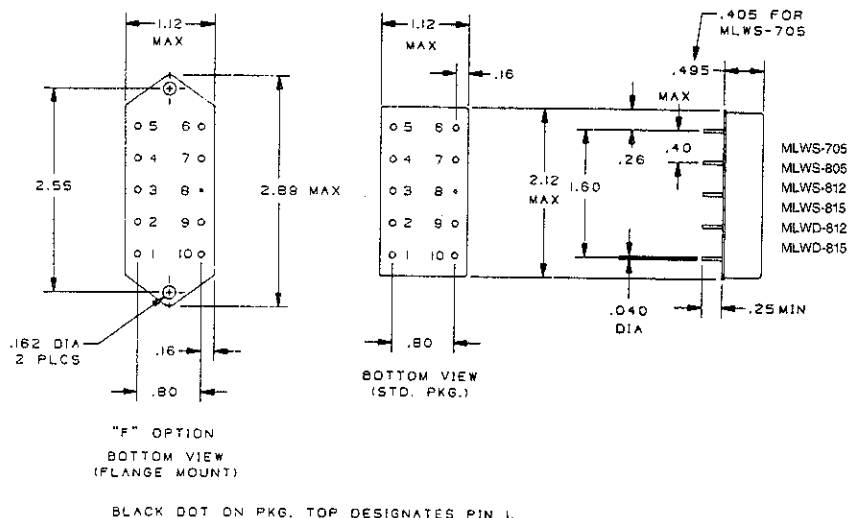
$$I_{\text{INPUT}} = \frac{P_{\text{OUT}}}{\text{Efficiency} \times V_{\text{INPUT}}} = \frac{15W}{(0.76) \times (17)} = 1.16A$$

3. Therefore, the MLWF-200 with an input current of 1.75 Amps is suitable for the application.

4. For multiple converter applications add up all input currents to determine which filter must be used.

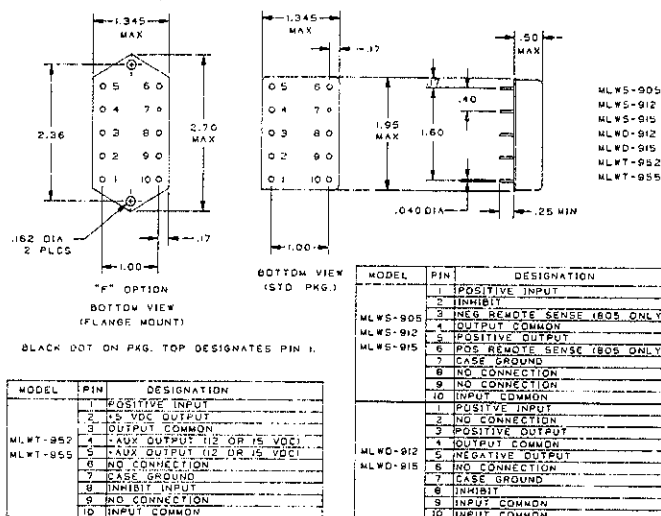
MLW SERIES AND MLWF SERIES FILTERS

MLWS-705
MLWS-805
MLWS-812
MLWS-815

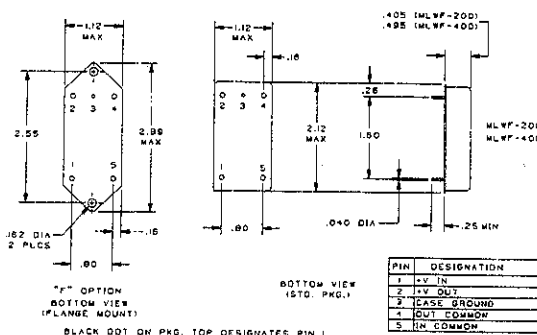


MODEL	PIN	DESIGNATION
MLWS-705 MLWS-805 MLWS-812 MLWS-815 MLWD-812 MLWD-815	1	POSITIVE INPUT
	2	INHIBIT INPUT
	3	OUTPUT ADJUST
	4	OUTPUT COMMON
	5	POSITIVE OUTPUT
	6	NO CONNECTION
	8	CASE GROUND
	9	NO CONNECTION
	10	INPUT COMMON
MLWD-812 MLWD-815	1	POSITIVE INPUT
	2	INHIBIT INPUT
	3	POSITIVE OUTPUT
	4	OUTPUT COMMON
	5	NEGATIVE OUTPUT
	6	NO CONNECTION
	8	CASE GROUND
	9	NO CONNECTION
	10	INPUT COMMON

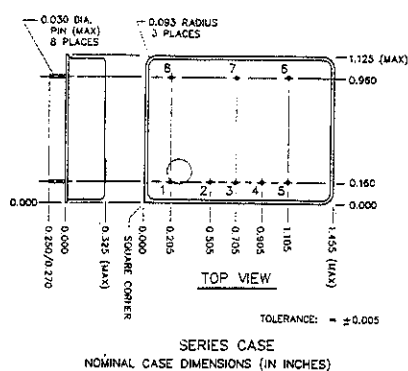
MLWS-905
MLWS-912
MLWS-915
MLWD-812
MLWD-815
MLWD-912
MLWD-915
MLWT-952
MLWT-955



MLWF-200
MLWF-400

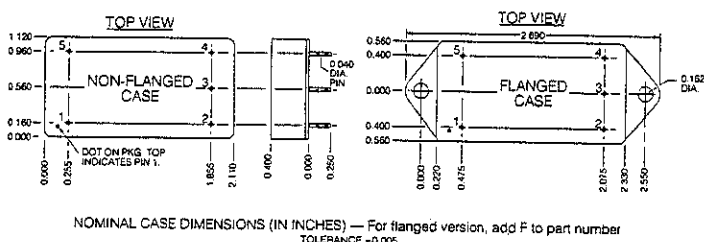


MLWS-600
MLWD-600



DESIGNATION	MLWS-600	MLWD-600
	PIN NO.	PIN NO.
Inhibit input	1	1
Output enable	3	3
Positive output	4	2
No connection	5	5
Case ground	6	6
Input common	7	7
Positive input	8	8
Negative output	N/A	4

MLWF-300
MLWF-300F



DESIGNATION	PIN
+V _{IN}	1
+V _{OUT}	2
Case Ground	3
Out Common	4
In Common	5