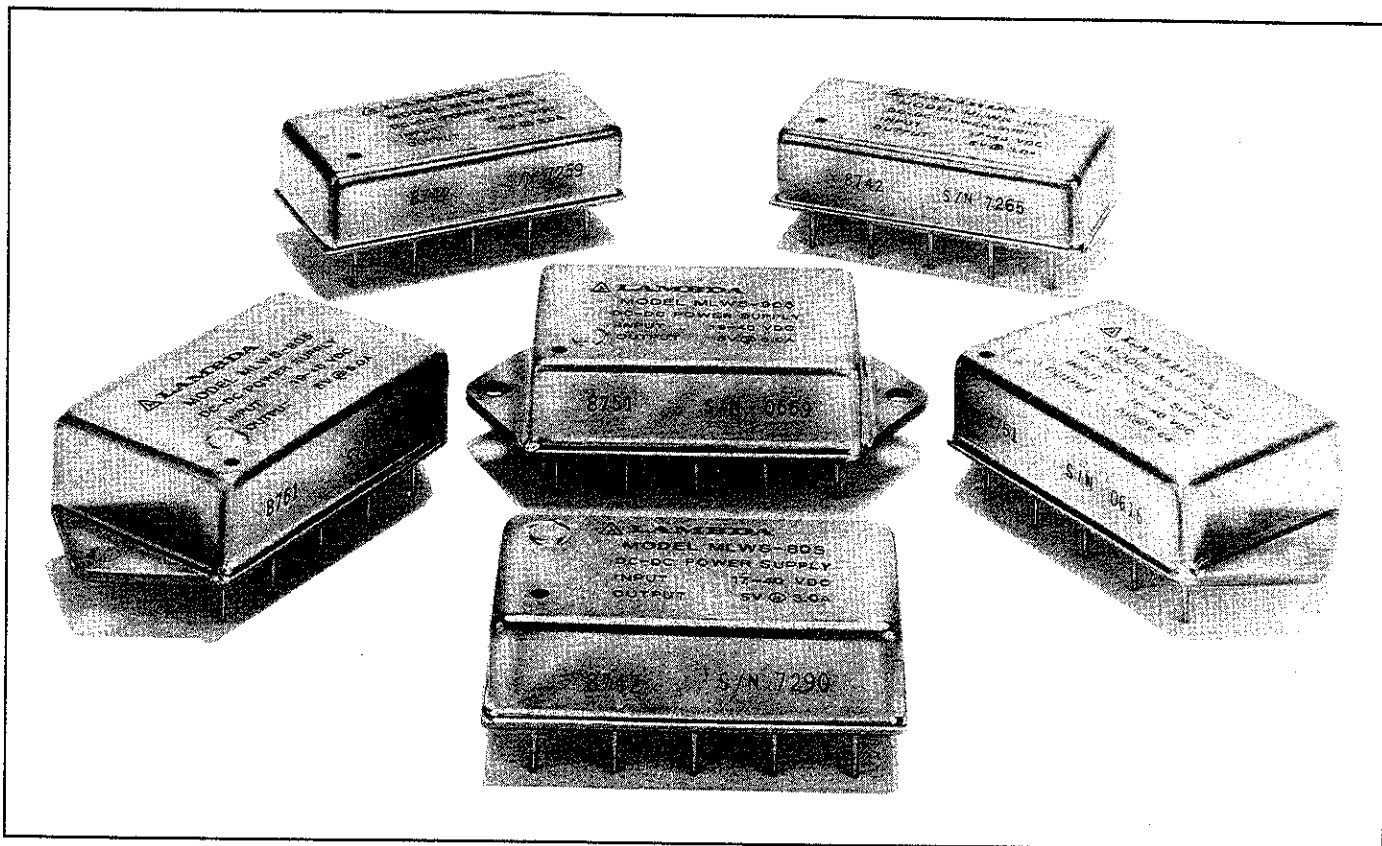


## PART II — DC-TO-DC CONVERTERS

### 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
- Stabilization Bake: 24 hours @ 125°C per method 1008 condition B
- Temperature Cycle: 10 times, -55°C to 125°C per method 1010
- Constant Acceleration: 500g per method 2001
- Gross Leak: Per method 1014
- Fine Leak: Per method 1014, condition A
- Burn-in: 96 hours @ 70°C ambient
- 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  $1 \times 10^{-3}$  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.