Filter Module

MTF50

- Wide Input Voltage Range 10–50 VDC
- Active Surge Protection
- Max Output Power 50 W
- Wide Temperature Range –55 °C to 100 °C
- MIL–STD–461 and DEF–STAN 59–411
- MIL–STD–1275 and DEF–STAN 61–5
- 3 Year Warranty

Specification

Input

Input Voltage Range	• 15.5-40 VDC
Input Transient	• 10-50 V for 10 s 600 V for 10 µs 50 Ω source resistance per MIL-STD-704A, 100 V for 50 ms 0.5 Ω source resistance per MIL-STD-1275A, ±250 V for 100 µs as per MIL-STD-1275A

Output

Output Voltage	• Clamped <50 VDC
Output Power	• 50 W maximum
Inhibit	• Off = TTL Low or short circuit On = TTL High or open circuit

General

Efficiency	• 97% typical
Resistance	• 0.25 Ω input to output <0.1 Ω case to case pin at 10A
Inhibited Power Dissipation	• 0.1 W
Inrush Current	• 25 A at 28 Vin
Fusing	• External fusing required
MTBF	• 846 kHrs to MIL-HDBK-217F at +40 °C, GF

Environmental

Operating Temperature	• -40 °C to +85 °C ambient -40 °C to +100 °C case Extended Temperature Range: (option -LT) -55 °C to +85 °C ambient -55 °C to +100 °C case
Storage Temperature	• -55 °C to +125 °C
Operating Altitude	• Tested to 70000 ft (21336 m)
Operating Humidity	• 88% relative humidity 240h MIL-STD-810D Method 507.2
Shock	• 100 g MIL-STD-810D Method 516.3
Vibration	• 5 to 500 Hz MIL-STD-810D Method 514.3
Bump	• 2000 Bumps in each axis 40 g MIL-STD-810D Method 516.3
Salt Atmosphere	• 48 hours MIL-STD-810E Method 509.1

EMC

Conducted Emissions	• EN55022 conducted level B. MIL-STD-461E/F/G, CE101 & CE102 DEF-STAN 59-411 DCE01/DCE02
Immunity	• MIL-STD-704E, MIL-STD 704A & MIL-STD-1275A-E DEF-STAN 61-5 part 6 issue 5
Conducted Susceptibility	• MIL-STD-461E/F/G, CS101, CS114, CS115 & CS116

Safety

Safety Approvals	• CE & UKCA meets all applicable directives & legislation

EMC standards are met when used in conjuction with the MTC series of DC/DC converters

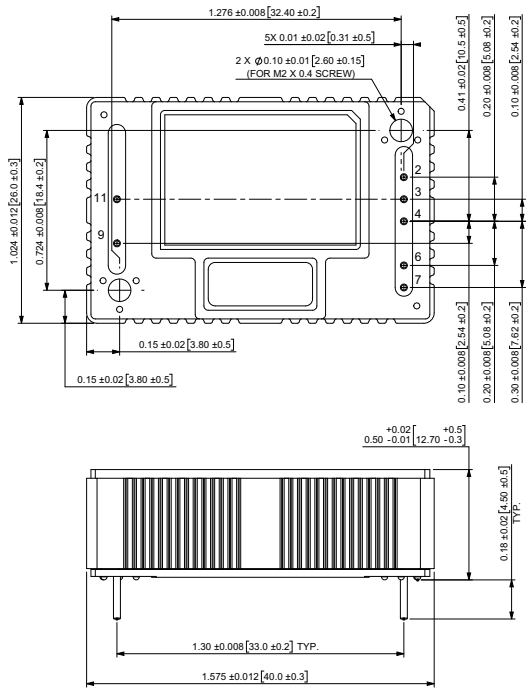
Models & Ratings

Output Voltage	Input Voltage	Efficiency	Model Number
50 VDC max	15.5-40 VDC	97%	MTF50

Notes

1. Add suffix '-LT' to the part number for extended temperature range version (-55 °C).
2. Add suffix '-ESS' to the part number for extended environmental stress screening.

Mechanical Details



Pin	Function
1	No Pin
2	Case
3	Y-cap
4	-Vin
5	No Pin
6	+Vin
7	INH
8	No Pin
9	+Vout
10	No Pin
11	-Vout
12	No Pin
13	No Pin
14	No Pin

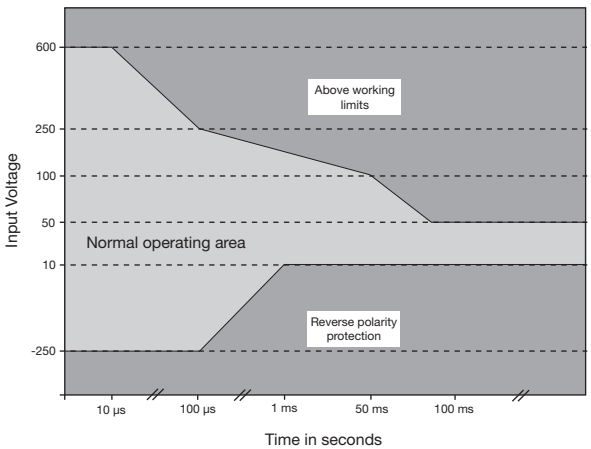
Notes

1. Dimensions are in inches (mm)
2. Tolerance: ±0.02 (±0.5) except where indicated
3. Weight: 0.06 lbs (25 g)
4. Materials & Finish:

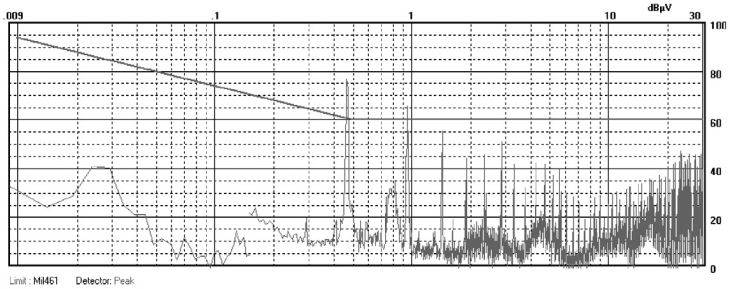
Pin -	Diameter: 0.032 (0.8)
	Material: Cu Zn30 2.5 µm Ni
	Finish: 0.2-0.5 µm AU (HV 170-200)
Mounting Hole -	Diameter: 0.102 (2.6)
Case -	Material: Aluminium (Al Mg Si 0.5)
	Finish: Chromated
Nameplate -	Non-conductive plastic

Application Notes

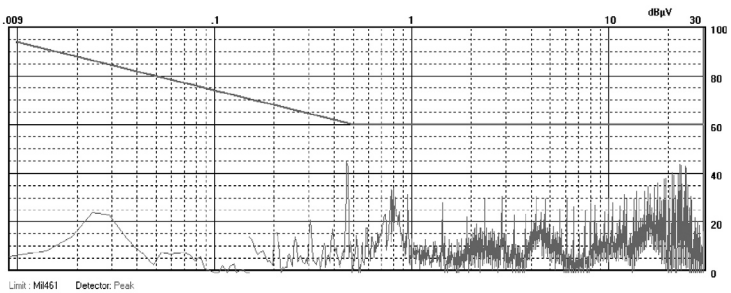
Safe Operating Area



Conducted Emissions



MTC0528S12 without MTF50 filter



MTC0528S12 with MTF50 filter

EMC Connection Diagram