

## 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

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### Input

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|---------------------|---|
| Input Voltage Range | • 15.5-40VDC  |
| Input Transient     | • 10-50 V for 10 s<br>600 V for 10 $\mu$ s 50 $\Omega$ source resistance per MIL-STD-704A, 100 V for 50 ms 0.5 $\Omega$ source resistance per MIL-STD-1275A, $\pm$ 250 V for 100 $\mu$ s as per MIL-STD-1275A |

### Output

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

### General

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|-----------------------------|--|
| Efficiency                  | • 97% typical  |
| Resistance                  | • 0.25 $\Omega$ input to output<br><0.1 $\Omega$ 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

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|-----------------------|--|
| Operating Temperature | • –40 °C to +85 °C ambient<br>–40 °C to +100 °C case<br>Extended Temperature Range: (option -LT)<br>–55 °C to +85 °C ambient<br>–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<br>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<br>40 g MIL-STD-810D Method 516.3  |
| Salt Atmosphere       | • 48 hours MIL-STD-810E Method 509.1   |

### EMC

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

### Safety

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

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

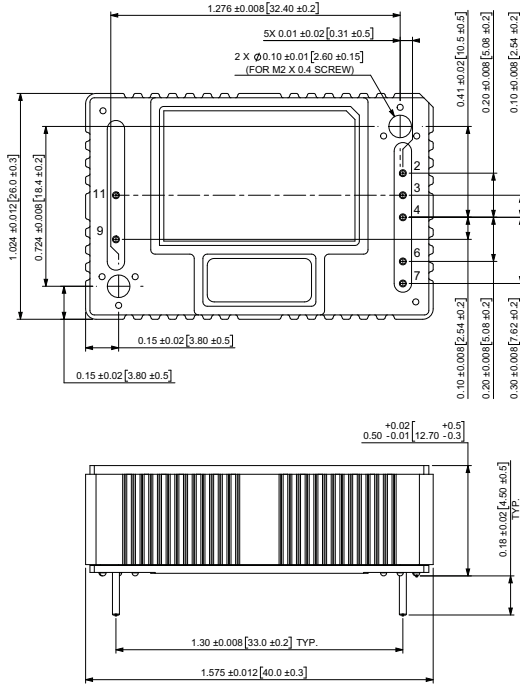
**Models & Ratings**

Output Voltage	Input Voltage	Efficiency	Model Number
50VDC max	15.5-40VDC	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**



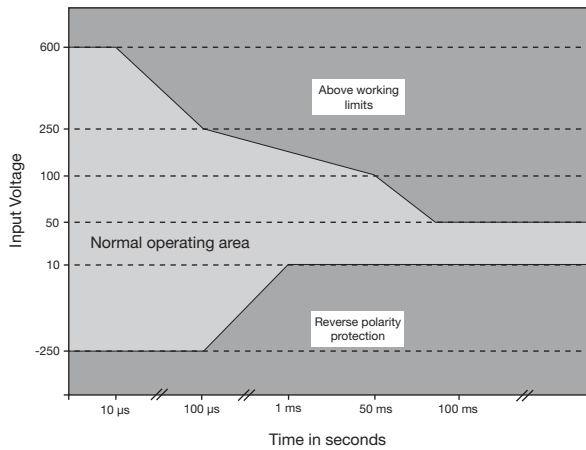
Pin	Function
1	No Pin
2	Case
3	Y-cap
4	-Vin
5	No Pin
6	+Vin
7	INH
8	No Pin
9	+Vout
10	No Pin
11	-Vout
12	No Pin
13	No Pin
14	No Pin

**Notes**

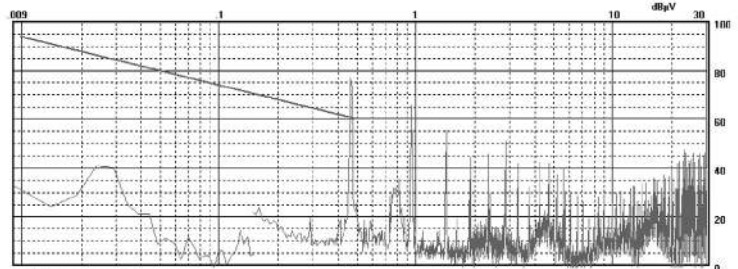
1. Dimensions are in inches (mm)
2. Tolerance: ±0.02 (±0.5) except where indicated
3. Weight: 0.06 lbs (25 g)
4. Materials & Finish:
  - Pin - Diameter: 0.032 (0.8)  
Material: Cu Zn30 2.5 µm Ni  
Finish: 0.2-0.5 µm AU (HV 170-200)
  - Mounting Hole - Diameter: 0.102 (2.6)
  - Case - Material: Aluminium (Al Mg Si 0.5)  
Finish: Chromated
  - Nameplate - Non-conductive plastic

**Application Notes**

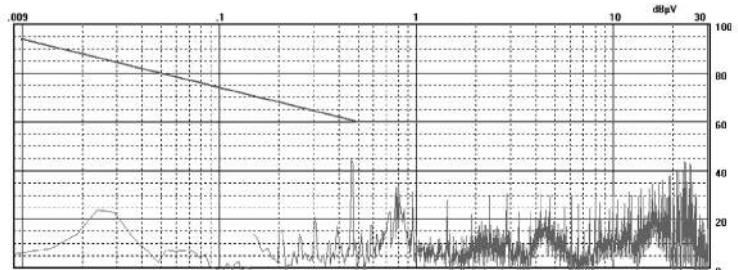
**Safe Operating Area**



**Conducted Emissions**



MTC0528S12 without MTF50 filter



MTC0528S12 with MTF50 filter

**EMC Connection Diagram**

