

MPF 080 SERIES

NON-ISOLATED DC/DC CONVERTER

Description

This railway standards compliant halogen lamp lighting converter (non-isolated DC/DC converter) is for use inside train vans and locomotive cabins. The input voltage is available in either 72 V or 110 VDC and the output voltage is available in 12 VDC 80 W. It has natural convection and is railway standards compliant EN 50155 and EN 50121-3-2.

Input Specifications

Product reference	MPF 080 1K01	MPF 080 1I01
Nominal input voltage	72 VDC	110 VDC
Input voltage range	50 to 90 VDC	77 to 137,5 VDC
Input transients voltage	43 VDC, 101 VDC during 100 ms	66 VDC, 154 VDC during 100 ms
Reverse input voltage protection	Yes, by reverse diode	
Inrush current limitation	< 10 I _n	

Output Specifications

Product reference	MPF 080 1K01 & MPF 080 1I01
Nominal output voltage	12 VDC
Output voltage ripple p-p (WB 0 to 30 MHz)	250 mV
Nominal output current	7A
Crossed regulation (load + line)	± 2%
Nominal output power	84 W
Efficiency	85%
Long term stability during 8 hours (after 1/2 hour operating)	< 0.3%
Switching frequency	> 40 kHz, fixed
Output current limitation	> 8.2 A
Overvoltage protection	Yes, by Transil 1.5 KE
Permanent short circuit protection	Yes

Environmental Details

Product reference	MPF 080 1K01 & MPF 080 1I01
Operating temperature range	-25°C to +85°C
Derating	Without derating
Storage temperature range	-40°C to +70°C
Temperature coefficient	< 2.10 ⁻⁴ /°C
Relative humidity at 40°C	Up to 95% non-condensing
Cooling	Natural convection
Insulation resistance	> 100MΩ under 500V between Input + output and ground
Dielectric strength	1500 VAC between primary + secondary and ground
MTBF (according to "MIL HDBK.217F")	GM 40°C: 100 000 h
Coating	PCB coated with varnish
Protection index	IP 20

Applicable Norms

Item	Reference	Level	Compliance
Railway rolling stocks applications	EN 50 155		X
EMC	EN 50121-3-2		X
Electrostatic discharges	EN 61000-4-2		X
Radiated immunity. Magnetic field	EN 61000-4-3	10 V/m	X
Fast transients	EN 61000-4-4	2 kVCM	X
Burst common mode and differential mode	EN 61000-4-5		X
Radiated immunity, inductive magnetic field	EN 61000-4-6		X

Mechanical Characteristics

Product reference	MPF 080 1K01 & MPF 080 1I01
Box material	Aluminium and inox steel
Potting	No
Dimension	130 x 40 x 130 mm
Weight	465 g
Fixing	Using the box profil
Input connector	6,35 Faston
Output connector	6,35 Faston

Technical Drawing

