

Make-Ps®

DC/DC CONVERTER

Single Output DC/DC Converter

FEATURES:

- RoHS Compliant
- 3 Pin SIP Package
- Non-Isolated
- Low ripple and noise
- Operating temperature -40°C to +85°C
- Very high efficiency up to 96%
- Pin compatible to multiple manufacturers
- Regulated Outputs

Series MS-78-NZ
Up to 7.5Watt



Models Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Efficiency Vin Max (%)	Efficiency Vin Min (%)
MS-783.3-NZ	4.75-28	3.3	500	90	80
MS-785.0-NZ	6.5-32	5	500	93	84
MS-786.5-NZ	8-32	6.5	500	94	87
MS-789.0-NZ	11-32	9	500	95	91
MS-7812-NZ	15-32	12	500	95	92
MS-7815-NZ	18-32	15	500	96	93

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See the table above			VDC
Filter	Capacitor			
Quiescent current	Vin=(LL-HL) at 0% load		7	mA
Short circuit consumption			0.8	W

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	100% load	±3		%
Short Circuit protection	Continuous			
Short circuit restart	Auto recovery			
Output current limit			2	A
Thermal shutdown	Internal IC junction	150		°C
Dynamic load stability	10-100% load		±100	mV
Line voltage regulation	Vin=(LL-HL) at full load	±0.4		%
Load voltage regulation	10-100% load	±0.6		%
Temperature coefficient	-40°C to +85°C ambient	±0.02		%/°C
Ripple & Noise	20MHz Bandwidth	35		mV p-p
Maximum capacitive load			1000	uF

General Specifications

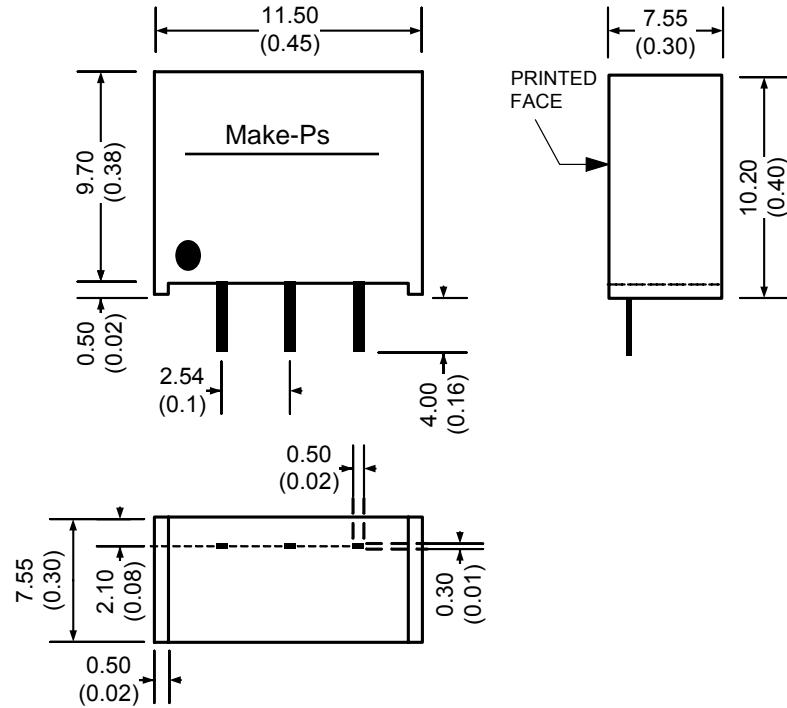
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	330		KHz
Operating temperature	With derating above 71 °C	-40 to +85		°C
Storage temperature		-55 to +125		°C
Max Case temperature			100	°C
Cooling	Free air convection			
Humidity			95	%
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		2		g
Dimensions (L x W x H)		0.45 x 0.30 x 0.40 inches	11.50 x 7.60 x 10.20 mm	
MTBF		> 2 000 000 hrs (MIL-HDBK-217F, Ground Benign, t=+25°C)		
Soldering Temperature	1.5 mm from case for 10 sec		300	°C

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Pin Out Specifications

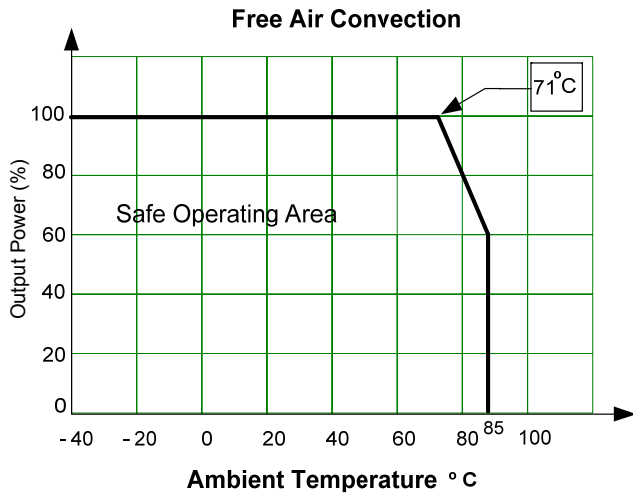
Pin	Single
1	+V Input
2	Ground
3	+V Output

Dimensions

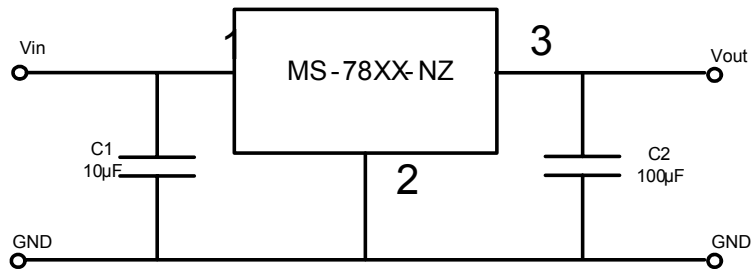


Dimensions are in mm (inch)
 Pin Tolerance: ±0.16 mm (0,004 inch)
 Case Tolerance: ±0.25 mm (0.01 inch)

Derating



Standard Application Circuit



C1: A low ESR capacitor is required to keep the noise of the converter to a minimum. Ceramic capacitors are recommended, but tantalum or electrolytic may be used. Typical value is 10 μ F / 50V.
C2: Installation of C2 is recommended but optional. Typical recommended value is 100 μ F / 25V electrolytic.
NOTE: This part is not designed for parallel operation