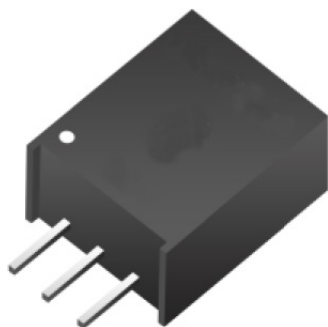


**RoHS
Compliant**



Features

- 3PIN SIP package
- Efficiency up to 93%, Non isolated, no need for heatsinks
- Customized solutions available
- UL94V-0 package material
- Operating temperature from -40°C to +85°C
- Short circuit protection
- No-load input current as low as 1.5mA
- UL/cUL/IEC/EN 62368-1 approved, CB-Report
- EMC Standard of EMI EN55032:2015 Approved
- EMC Standard of EMS EN55035:2017 Approved

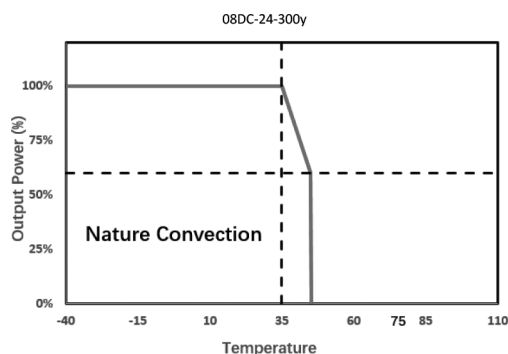
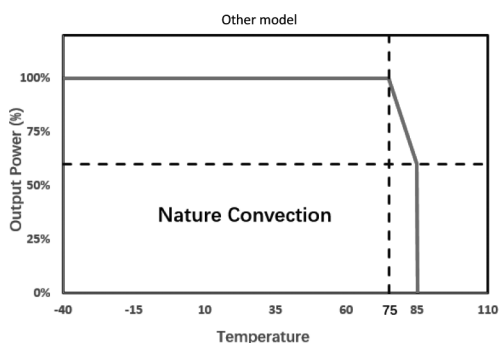
Specification Table

Typical @ T_A=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Input Range	Output Voltage	Output Current	Efficiency (%)		Capacitive Load
	V DC	V DC	mA	Min. Vin	Max. Vin	μF max
MP016999	9-90	5	500	87	75	100
MP017000	14-90	9		91	80	
MP017001	18-90	12			83	
MP017002	20-90	15		93	84	
MP017003	36-90	24	300	93	85	
MP017004	9-90	3.3	500	82	69	
MP017005		6.5		91	78	

Note: (L) Add a suffix to bend the feet 90°, e.g, 08DC-05-500L

Temperature Derating Graph



Dimensions : Millimetres

Non Isolated DC DC Converter

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Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	3.3V output		3	±4	%
	Others			3	
Short Circuit Protection	Continuous, automatic recovery				
Line Regulation	3.3V to 6.5V			1.5	%
	9V to 24V			2.5	
Load Regulation	(10% To 100% F.L)			2	
Ripple & Noise (without Output Capacitor)	BW=DC To 20MHz			80	mVp-p
Transient response setting time	50% load step change		250		us

Electromagnetic Compatibility (EMC)

EMI	CE	CISPR32/EN55032 Class B (see Fig. 1 for recommended circuit)		
	RE	CISPR32/EN55032 Class B (see Fig. 1 for recommended circuit)		
EMS	ESD	IEC/EN61000-4-2	Contact ±4kV	perf. Criteria B
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	1000KHz ±1kV	perf. Criteria B
	Surge	IEC/EN 61000-4-5	line to line ±1kV	perf. Criteria B
	CS	IEC/EN 61000-4-6	3Vr.m.s	perf. Criteria B

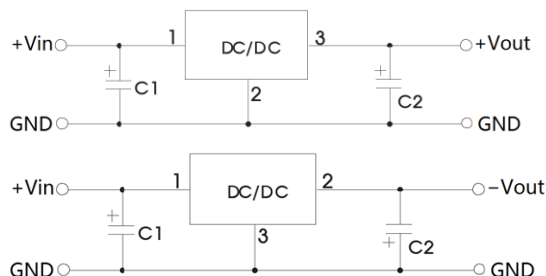
General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Switching Frequency			440		KHz
Operating Temperature		-40		85	°C
Storage Temperature		-55		125	
Humidity	Non Condensing			95	%
Cooling	Free air Convection (20LFM)				
Case material	Non-Conductive Black Plastic				
Weight			4		g
Dimensions			11.5 × 8.5 × 17.5		mm
MTBF(+25°)	using MIL-HDBK 217F		5000 × 10 ³		hours
MTBF(+71°)			1000 × 10 ³		

Non Isolated DC DC Converter

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Recommended Test Circuit



Vout	C1	C2
3.3	10 μ F/100V	22 μ F/10V
5		22 μ F/16V
6.5		
9		22 μ F/25V
12		10 μ F/50V
24		

EMC (Class B) Compliance Circuit

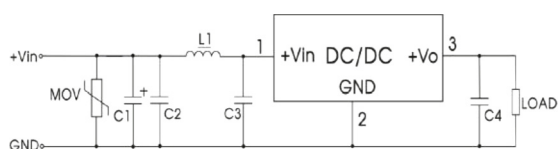
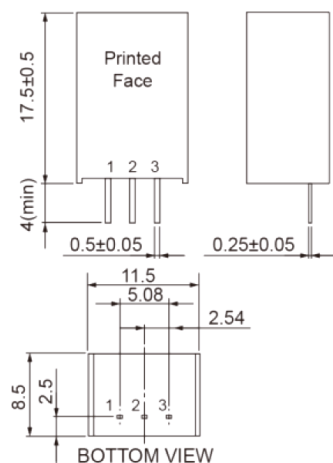


Fig.1

FUSE	Select fuse value according to actual input current
MOV	S20K30
L1	120 μ H
C1	680 μ F /100V
C2, C3	4.7 μ F /100V
C4	10 μ F /50V

Markings and Dimensions



PIN Connection

PIN	1	2	3
Function	+Vin	GND -Vout	+Vout GND

Part Number Table

Description	Part Number
DC to DC Converter, Non Isolated, 500mA, 5V	MP016999
DC to DC Converter, Non Isolated, 500mA, 9V	MP017000
DC to DC Converter, Non Isolated, 500mA, 12V	MP017001
DC to DC Converter, Non Isolated, 500mA, 15V	MP017002
DC to DC Converter, Non Isolated, 300mA, 24V	MP017003
DC to DC Converter, Non Isolated, 500mA, 3.3V	MP017004
DC To DC Converter, Non Isolated, 500mA, 6.5V	MP017005

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