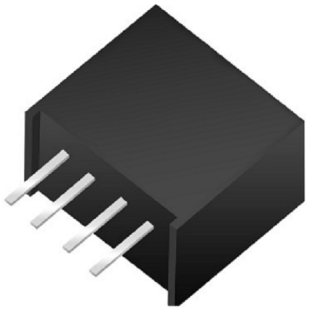
Isolated DC DC Converter

RoHS Compliant



Features

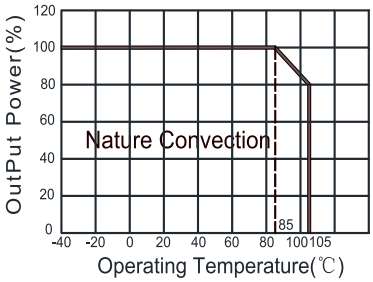
- 4PIN SIP and 8PIN DIL Package
- No-load input current as low as 5mA
- Continuous short-circuit protection
- High Efficiency up to 89%
- Unregulated Output Types
- 1.5KVDC & 3KVDC Isolation
- Operating Temperature:-40°C to +105°C
- Industry Standard Pinout

Specification Table

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

Part Number	Output Voltage	Output Current	Efficiency	Capacitive Load µF
	V DC	mA	%TYP	Max.
MP13DC-05S05N2P2	5	400	84	2400
MP13DC-05S15N2P2	15	133	86	220
MP13DC-12S05N2P2	5	400	85	2400
MP13DC-12S12N2P2	12	167	87	470
MP13DC-24S05N2P2	5	400	85	2400
MP13DC-24S24N2P2	24	84	89	100

Temperature Derating Graph



Input Specifications

Parameters	Conditions	Typ	Units
Voltage Range	Vo,Io Nom	±10	%
Filter	Capacitor		

Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load	-	-	±5	%
Short Circuit Protection	Continuous				
Line Regulation	For 1.0% OF Vin	-	1.2		%
Load Regulation	3.3V (10% to 100% F.L)		15	20	
	5V (10% to 100% F.L)		8	15	
	9V (10% to 100% F.L)		6	10	
	12V (10% to 100% F.L)		5	10	
	15V (10% to 100% F.L)		4	10	
	24V (10% to 100% F.L)		3	10	
Ripple & Noise	BW=DC to 20MHz @Vo:3.3V, 5V, 9V, 12V,15V		75	150	mVp-p

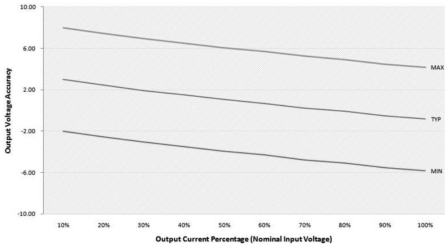
General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500V DC	1000			MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V		20		pF
Switching Frequency	Full load, nominal input @ 5V Vin		215		KHz
	Full load, nominal input @other Vin		250		
Operating Temperature		-40		+105	°C
Storage Temperature		-55		+125	
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25°C	3500000			Hours
Weight	Package 2/3		1.5/1.5		g
Dimensions	Package 2		11.5 × 6 × 10		mm
	Package 3		12.7 × 10.16 × 6.8		

Electromagnetic Compatibility (EMC)

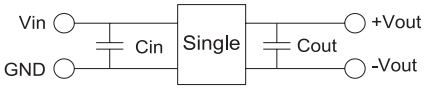
EMI	CE	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
	RE Max.	CISPR32/EN55032 CLASS B (see Fig. 1 for recommended circuit)
EMS	ESD	IEC/EN61000-4-2 Air ±8kV , Contact ±6kV perf. Criteria B

Tolerance Envelope Graph



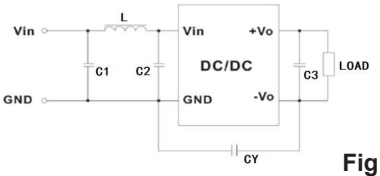
Isolated DC DC Converter

Recommended Test Circuit



Vin	Cin	Single Vout	Cout
5V DC	4.7μF/25V	5V DC	10μF/16V
12V DC	2.2μF/25V	9V DC	2.2μF/16V
15V DC	2.2μF/25V	12V DC	2.2μF/25V
24V DC	1μF/50V	15V DC	1μF/25V
- -	- -	24V DC	1μF/50V

EMC (CLASS B) compliance circuit



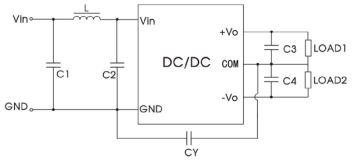
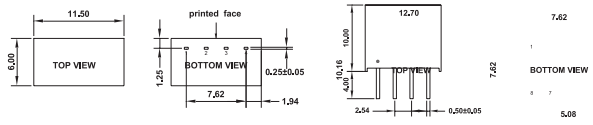


Fig 1

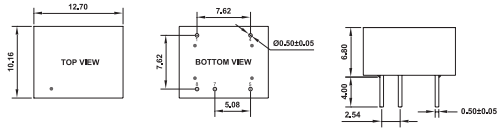
EMC recommended circuit value table		
EMI	C1	4.7μF /50V
	C2	4.7μF /50V
	CY	1nF/4kV
	C3, C4	Recommended Test Circuit
	L	6.8μH

Markings and Dimensions

2



3



PIN Connection							
PIN	1	2	3	4	5	7	8
4Pin	-Vin	+Vin	-Vout	+Vout			

Part Number Table

Description	Part Number
DC to DC Converter, Isolated, 2W, 400mA, 5Vin, 5Vout	MP13DC-05S05N2P2
DC to DC Converter, Isolated, 2W, 133mA, 5Vin, 15Vout	MP13DC-05S15N2P2
DC to DC Converter, Isolated, 2W, 400mA, 12Vin, 5Vout	MP13DC-12S05N2P2
DC to DC Converter, Isolated, 2W, 167mA, 12Vin, 12Vout	MP13DC-12S12N2P2
DC to DC Converter, Isolated, 2W, 400mA, 24Vin, 5Vout	MP13DC-24S05N2P2
DC to DC Converter, Isolated, 2W, 84mA, 24Vin, 24Vout	MP13DC-24S24N2P2

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