



DC/DC Converters

MDC 05 Series, 6 Watt

Features

- ◆ Wide 2 :1 Input Range
- ◆ Full SMD -Design
- ◆ High Efficiency up to 86 %
- ◆ Extended Operating Temperature
- ◆ Range - 40 °C to 85°C
- ◆ I/O - isolation 1' 500 VDC
- ◆ Indefinite short- Circuit Protection
- ◆ Input Filter meets EN 55022, Class A and
- ◆ FCC, Level A without external Components
- ◆ Shielded Metal Case with insulated
- ◆ Baseplate
- ◆ 24 - pin DIP with Industry Standard Pinout
- ◆ High Reliability, MTBF >1Mio.h
- ◆ 3 Year Product Warranty



The TEN 5 Series is a range of DC/DC - converter modules with wide input range of 2:1. State of the art SMD - technology guarantees a product with very high Reliability and good cost/performance ratio. High efficiency allows an operating temperature range of - 40 °C to + 85 °C. I/O - isolation of 1' 500 VDC together with conducted noise compliance to EN 55022 - A and FCC, level A makes these converters ideal for a wide range of applications in communications, mobile battery powered equipments and industrial systems.

Models				
Ordercode	Input voltage range	Output voltage	Output current max.	Efficiency typ.
MDC 5-0510	4.5 - 7 VDC	3.3 VDC	1200 mA	75%
MDC 5-0511		5 VDC	1000mA	79%
MDC5-0512		12 VDC	500mA	82%
MDC 5-0513		15 VDC	400mA	82%
MDC 5-0521		± 5 VDC	± 500 mA	79%
MDC 5-0522		± 12 VDC	± 250 mA	82%
MDC 5-0523		± 15 VDC	± 200 mA	82%
MDC 5-1210	9 - 18 VDC	3.3 VDC	1200 mA	77%
MDC 5-1211		5 VDC	1000 mA	81%
MDC 5-1212		12 VDC	500 mA	84%
MDC 5-1213		15 VDC	400 mA	84%
MDC 5-1221		± 5 VDC	± 500 mA	81%
MDC 5-1222		± 12 VDC	± 250 mA	84%
MDC 5-1223		± 15 VDC	± 200 mA	84%
MDC 5-2410	18 - 36 VDC	3.3 VDC	1200 mA	79%
MDC 5-2411		5 VDC	1000 mA	83%
MDC 5-2412		12 VDC	500 mA	86%
MDC5-2413		15 VDC	400 mA	86%
MDC 5-2421		± 5 VDC	± 500 mA	83%
MDC 5-2422		± 12 VDC	± 250 mA	86%
MDC 5-2423		± 15 VDC	± 200 mA	86%
MDC 5-4810	36 - 75 VDC	3.3 VDC	1200 mA	79%
MDC 5-4811		5 VDC	1000 mA	83%
MDC 5-4812		12 VDC	500 mA	86%
MDC 5-4813		15 VDC	400 mA	86%
MDC 5-4821		± 5 VDC	± 500 mA	83%
MDC 5-4822		± 12 VDC	± 250 mA	86%
MDC 5-4823		± 15 VDC	± 200 mA	86%



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Input Specifications		
Input current no load /full load	5 Vin models:	50mA / 1460 mA typ.
	12 Vin models:	20mA / 590 mA typ.
	24 Vin models:	5mA / 290 mA typ.
	48 Vin models:	3mA / 145 mA typ.
Start-up voltage / under voltage shut down	5 Vin models:	4.4VDC / 4.0 VDC
	12 Vin models:	8.0VDC / 8.0 VDC
	24 Vin models:	16.0VDC / 16.0 VDC
	48 Vin models:	32.0VDC / 32.0 VDC
Surge voltage (1 sec.max.)	5 Vin models:	10 V max.
	12 Vin models:	25 V max.
	24 Vin models:	50 V max.
	48 Vin models:	100 V max.
Reverse voltage protection		1.0A max.
Conducted noise (input)		EN 55022 level A, FCC part 15, level A

Output Specifications		
Voltage set accuracy		1.0%
Regulation	- Input variation Vin min.to Vin max.	0.3% max.
	- Load variation 20 – 100%	
	single output models:	1.0% max.
	dual output models balanced load:	2.0% max.
	dual output models unbalanced load:	5.0% max.
Ripple and noise (20 Mh z Bandwidth)		50 mVpk-pk max.
Temperature coefficient		± 0.02% /K
Output current limitation		>120% of lout max., constant current
Short-circuit protection		indefinite (automatic recovery)
Capacitive load	single output models:	6800 µ F max.
	dual output models:	1000 µ F max. (Each output)

General Specifications		
Temperature ranges	- Operating	- 40 °C...+ 85 °C
	- Case temperature	+ 100 °C max.
	- Storage	- 55 °C...+125 °C
Derating		3.5%/K above 70 °C
Humidity (non condensing)		95% rel H max.
Reliability,calculated MTBF (MIL-HDBK-217E ground benign)		>1 Mio.h @ + 25 °C
Isolation voltage (60 sec)	- Input/Output	1' 500 VDC
Isolation capacity	- Input/Output	380 pF typ.
Isolation resistance	- Input/Output	> 1' 000 M Ohm (500 VDC)
Switching frequency		300 kHz typ. (Pulse frequency modulation PFM)
Safety standards		UL 60950-1,IEC 60950-1,EN 60950-1
Safety approval		CSA File No.226037

All specifications valid at nominal input voltage,full load and after warm-up time unless otherwise stated

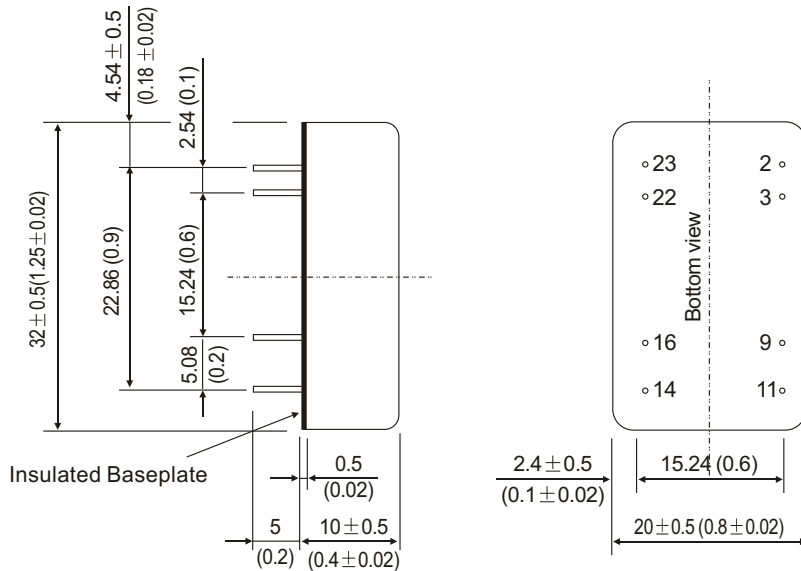


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Physical Specifications	
Case material	steel,nickel plated
Baseplate material	non conductive Fr4
Potting material	epoxy (UL 94V-0 rated)
Weight	14g (0.55 oz)
Soldering temperature	max. 265 °C / 10 sec.

Outline Dimensions mm (inches)



Pin diameter $\phi 0.5 \pm 0.05$ (0.02 ± 0.002)
Tolerances $\pm 0.5(0.02)$

Pin-Out		
Pin	Single	Dual
2	-Vin (GND)	-Vin (GND)
3	-Vin (GND)	-Vin (GND)
9	No pin	Common
11	No com.	-Vout
14	+Vout	+Vout
16	-Vout	Common
22	+Vin (Vcc)	+Vin (Vcc)
23	+Vin (Vcc)	+Vin (Vcc)

Specifications can be changed any time without notice