CMDSC Series
DC-DC Converter

FEATURES :

- 14PIN SMD Package
- No-load input current as low as 5mA
- Continuous short-circuit protection
- High Efficiency up to 87%
- Unregulated Output Types
- 1.5KVDC~ 3KVDC Isolation
- Operating Temperature:-40℃ TO +105℃
- Industry Standard Pinout
- Design refer to IEC62368, UL62368, EN62368

1Watt 1.5KV ~ 3KV Isolated

Single Output SMD14

Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

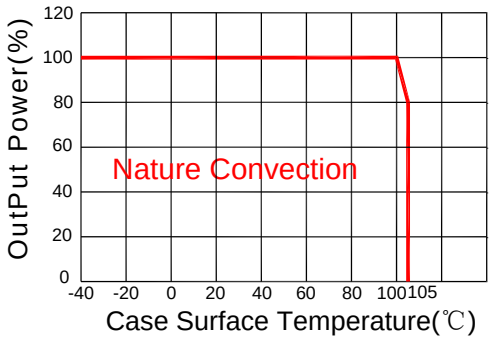
Part Number	Output Voltage	Output Current	Efficiency	Capacitive Load(μF)	Package Style
	Vdc	mA	%TYP	Max.	
CMDSC-05S03NY(P)(H3)	3.3	303	76	2400	1/2/3
CMDSC-05S05NY(P)(H3)	5	200	82	2400	1/2/3
CMDSC-05S09NY(P)(H3)	9	112	83	1000	1/2/3
CMDSC-05S12NY(P)(H3)	12	84	84	470	1/2/3
CMDSC-05S15NY(P)(H3)	15	67	84	330	1/2/3
CMDSC-05S24N3(P)(H3)	24	42	85	100	3
CMDSC-XXS03NYP(H3)	3.3	303	78	2400	1/2/3
CMDSC-XXS05NYP(H3)	5	200	82	2400	1/2/3
CMDSC-XXS09NYP(H3)	9	112	85	1000	1/2/3
CMDSC-XXS12NYP(H3)	12	84	85	680	1/2/3
CMDSC-XXS15NYP(H3)	15	67	87	330	1/2/3
CMDSC-XXS24N3P(H3)	24	42	85	220	3

Note: 1:No suffix is standard isolation (1.5KVDC) e.g, CMDSC -15S05NP ,
*add suffix "H3" for 3KVDC isolation, e.g, CMDSC-12S09NPH3, CMDSC-12S12NPH3,
Y = 1 or 2 or 3 for package, No suffix Y package1, When Y=2, package2, and so on,
e.g,CMDSC-15S05N2P, CMDSC-24S12N3PH3
When the I / O is equal to 24 V, package 1 and 2 disable

2: No suffix P is No short circuit protection , e.g, CMDSC-05S05N ,
*add suffix "P" for short circuit protection,
e.g, CMDSC -05S05N2P, CSMDSC-05S12N3PH3

3: "XX" Is Input Voltage : 12=12Vdc,15=15Vdc, 24=24Vdc
e.g, CMDSC-12S05N3P, CMDSC-15S12NPH3, CMDSC-24S15N2P

Temperature Derating Graph



CMDSC Series
DC-DC Converter

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Range	Vo,Io Nom@Vin:5V		±10		%
	Vo,Io Nom@ Vin:12V,15V,24V		±20		%
Filter	Capacitor				

Output Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	100% full load			±5	%
Short Circuit Protection	without suffix "P"			1	Sec
	With Suffix "P"		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)		10	15	%
	9V (10% To 100% F.L)		8	10	%
	12V (10% To 100% F.L)		7	10	%
	15V (10% To 100% F.L)		6	10	%
	24V (10% To 100% F.L)		5	10	%
Ripple & Noise	BW=DC To 20MHz @Vo:3.3V,5V,9V,12V,15V		30	75	mVp-p
	BW=DC To 20MHz @ Vo:24V		50	100	mVp-p

General Specifications

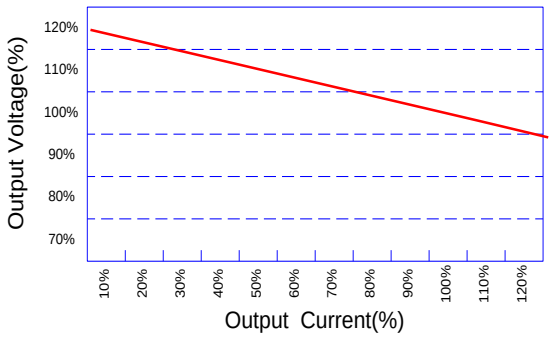
Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Isolation Capacitance	Input-output, 100KHz/0.1V		20		pF
Switching Frequency	Full load, nominal input @5V Vin		370		KHz
	Full load, nominal input @other Vin		250		KHz
Operation Temperature		-40		+105	℃
Storage Temperature		-55		+125	℃
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material	DAP				
MTBF	MIL-HDBK-217F@25℃	3500000			Hours
Weight	Package 1/2/3		1.2/1.2/1.28		g
Dimensions	Package 1		12.7x7.6x6.25		mm
	Package 2		12.7x7.6x6.25		mm
	Package 3		12.8x10.8x6.9		mm

Part Number

CMDSC	-	12	S	05	N	3	P	H3
A		B	C	D	E	F	G	H

A:Series
B:Input Voltage
C:Single Output
D:Output Voltage
E:Unregulated(N)
F:Packge
G:Protection
H:Isolation Voltage

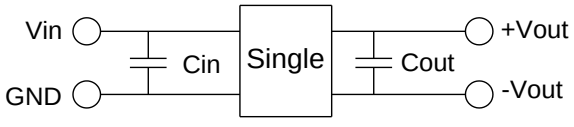
Tolerance Envelope Graph



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 Air ±8kV , Contact ±4kV perf. Criteria B

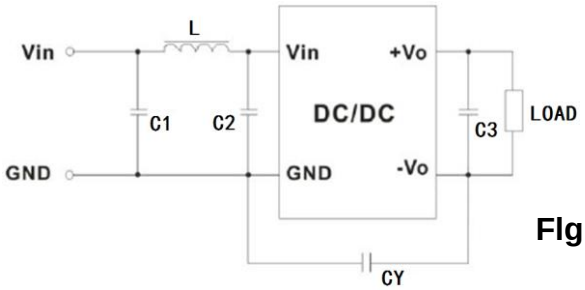
Recommended Test Circuit



Vin	Cin	Single Vout	Cout
5Vdc	4.7μF/25V	3.3Vdc	10μF/16V
12Vdc	2.2μF/25V	5Vdc	10μF/16V
15Vdc	2.2μF/25V	9Vdc	2.2μF/16V
24Vdc	1μF/50V	12Vdc	2.2μF/25V
- -	- -	15Vdc	1μF/25V
- -	- -	24Vdc	1μF/50V

CMDSC Series
DC-DC Converter

EMC (CLASS B) compliance circuit

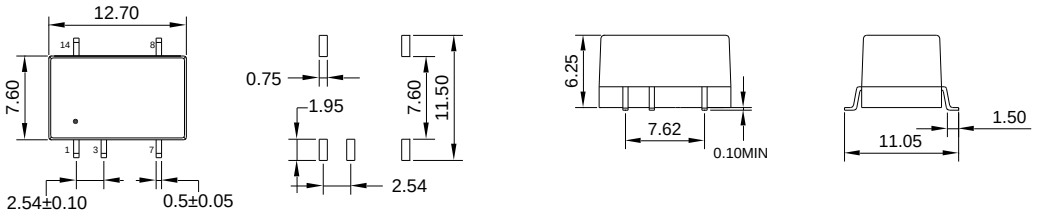


Flg.1

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

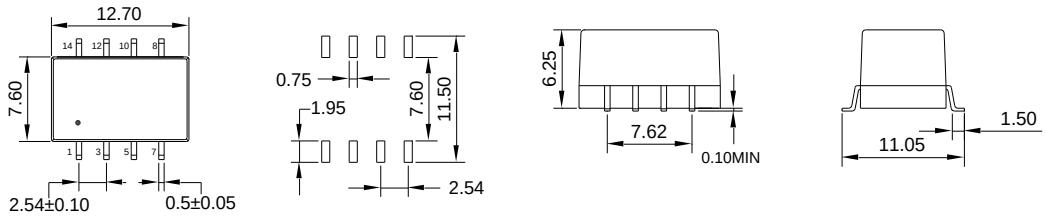
Markings and Dimensions

1



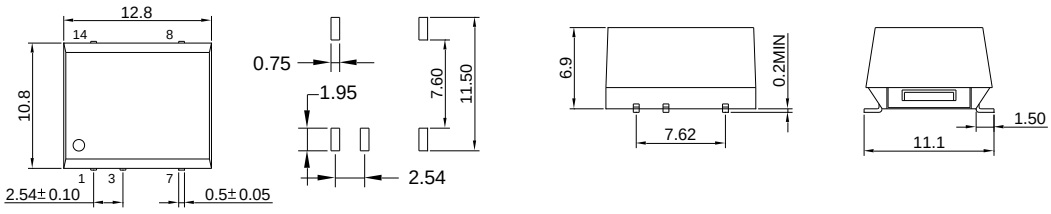
SUGGESTED PAD LAYOUT

2



SUGGESTED PAD LAYOUT

3



SUGGESTED PAD LAYOUT

UNIT:mm Unless otherwise specified,all tolerances are ±0.25

PIN Connection

PIN	1	3	7	8	14	Other
Package 1/3	-Vin	+Vin	-Vout	+Vout	NC	NO PIN
Package 2	-Vin	+Vin	-Vout	+Vout	NC	NC