

CS03DA(B - Package Serie

3W 1.5KVDC Isolated Wide Range Input Voltage DC/DC Converters



The rated output power of CS03DA (B packaging)converters is 3W, the voltage range is 4.5V-9V,9V-18V,18V-36V,36V-72V. It can be widely used in telecommunications, railway transportation, instrument and etc.



FEATURES

3W output power	2:1 wide input voltage range	Continuous short circuit protection
31.8mm*20.3mm*10mm package	1.5KVDC isolation	MTTF>1000Khrs
plastic shell packaging	RoHS compliant	Low ripple &noise

SELECTION GUIDE

Part Number	Input			output			Efficiency(Typ) %
	voltage (VDC)			voltage (VDC)	current (mA)		
	rated	range	Max.		Min.	Max.	
CS03DA05D05B	5(2:1)	4.5-9	10	±5	±30	±300	75
CS03DA05D09B	5(2:1)	4.5-9	10	±9	±17	±167	76
CS03DA05D12B	5(2:1)	4.5-9	10	±12	±13	±125	76
CS03DA05D15B	5(2:1)	4.5-9	10	±15	±10	±100	78
CS03DA05D24B	5(2:1)	4.5-9	10	±24	±6	±63	79
CS03DA05S05B	5(2:1)	4.5-9	10	5	60	600	76
CS03DA05S09B	5(2:1)	4.5-9	10	9	33	333	78
CS03DA05S12B	5(2:1)	4.5-9	10	12	25	250	81
CS03DA05S15B	5(2:1)	4.5-9	10	15	20	200	80
CS03DA05S24B	5(2:1)	4.5-9	10	24	13	125	81
CS03DA12D05B	12(2:1)	9-18	20	±5	±30	±300	74
CS03DA12D09B	12(2:1)	9-18	20	±9	±17	±167	76
CS03DA12D12B	12(2:1)	9-18	20	±12	±13	±125	85
CS03DA12D15B	12(2:1)	9-18	20	±15	±10	±100	84
CS03DA12D24B	12(2:1)	9-18	20	±24	±6	±63	84
CS03DA12S05B	12(2:1)	9-18	20	5	60	600	76
CS03DA12S09B	12(2:1)	9-18	20	9	33	333	79
CS03DA12S12B	12(2:1)	9-18	20	12	25	250	83
CS03DA12S15B	12(2:1)	9-18	20	15	20	200	83
CS03DA12S24B	12(2:1)	9-18	20	24	13	125	84
CS03DA24D05B	24(2:1)	18-36	40	±5	±30	±300	80
CS03DA24D09B	24(2:1)	18-36	40	±9	±17	±167	78
CS03DA24D12B	24(2:1)	18-36	40	±12	±13	±125	82
CS03DA24D15B	24(2:1)	18-36	40	±15	±10	±100	84
CS03DA24D24B	24(2:1)	18-36	40	±24	±6	±63	84
CS03DA24S05B	24(2:1)	18-36	40	5	60	600	80
CS03DA24S09B	24(2:1)	18-36	40	9	33	333	78
CS03DA24S12B	24(2:1)	18-36	40	12	25	250	79
CS03DA24S15B	24(2:1)	18-36	40	15	20	200	84
CS03DA24S24B	24(2:1)	18-36	40	24	13	125	85
CS03DA48D05B	48(2:1)	36-72	75	±5	±30	±300	83
CS03DA48D09B	48(2:1)	36-72	75	±9	±17	±167	82
CS03DA48D12B	48(2:1)	36-72	75	±12	±13	±125	83
CS03DA48D15B	48(2:1)	36-72	75	±15	±10	±100	84
CS03DA48D24B	48(2:1)	36-72	75	±24	±6	±63	84
CS03DA48S05B	48(2:1)	36-72	75	5	60	600	78
CS03DA48S09B	48(2:1)	36-72	75	9	33	333	79
CS03DA48S12B	48(2:1)	36-72	75	12	25	250	82
CS03DA48S15B	48(2:1)	36-72	75	15	20	200	82
CS03DA48S24B	48(2:1)	36-72	75	24	13	125	84

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

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GENERAL CHARACTERISTICS

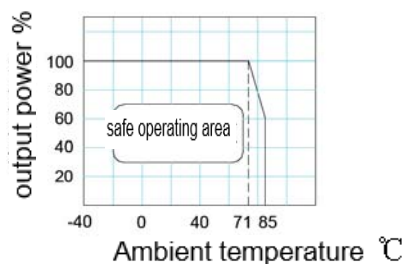
parameter	Test conditions	Min	Typ	Max	Units
Isolated voltage	I/P-O/P, test 1 minute, leakage current <1mA	1500			VDC
Isolated resistance	500VDC	1000			MΩ
Storage Humidity	Non condensing	5		95	%
Operating Temperature		-40		85	°C
Storage Temperature		-55		125	°C
Max. Case Temperature	Operating Temperature curve range		25	35	°C
Lead Temperature	1.5mm from case for 10 seconds			300	°C
Output short circuit protection		Continuous,Auto recovery			
MTBF		100			10khrs
weight			13		g
Cooling	Free air convection				
Case materials	plastic (metal optional)				

OUTPUT CHARACTERISTICS

parameter	Test conditions	Min	Typ	Max	Units
Voltage accuracy		0.3		3	W
Main voltage accuracy			±1.0	±2.0	%
Auxiliary voltage accuracy			±2.0	±3.0	%
Line regulation	Rated load, Input voltage variation ± 1%		±0.2	±0.5	%
Load regulation	Nominal input, main load from 10% to100%		±0.5	±2.0	%
Temperature coefficient	Rated load			±0.03	%/°C
Ripple and noise	20MHz bandwidth, Using parallel line method		50	100	mVp-p
Switch frequency	Rated input voltage	100			KHz

- Case temperature under shall not exceed the maximum case temperature level.

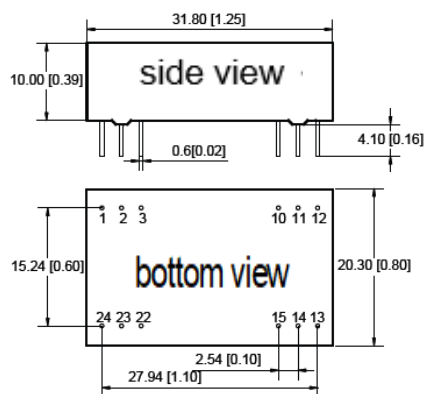
DERATING CURVE



MECHANICAL DIMENSIONS

PIN CONNECTIONS

DIP (B packaging)



units: mm

pin diameters: 0.6mm

pin diameters tolerance: ±0.10mm other tolerance: ±0.5mm

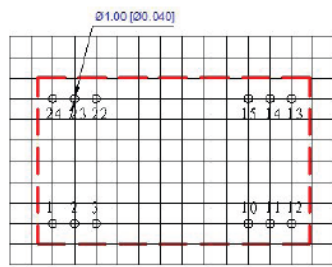
PIN	single	dual
1, 24	Vin	Vin
2, 23	NO PIN	-Vo
3, 22	NO PIN	0V
10, 15	0V	0V
11, 14	+Vo	+Vo
12, 13	GND	GND

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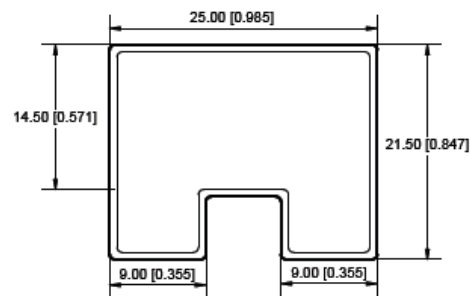


REMMENDED FOOTPRINT DETAILS

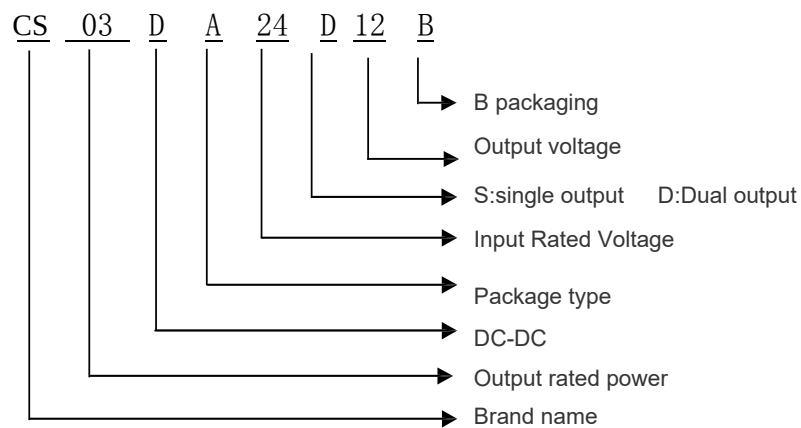


Grid spacing: 2.54mm

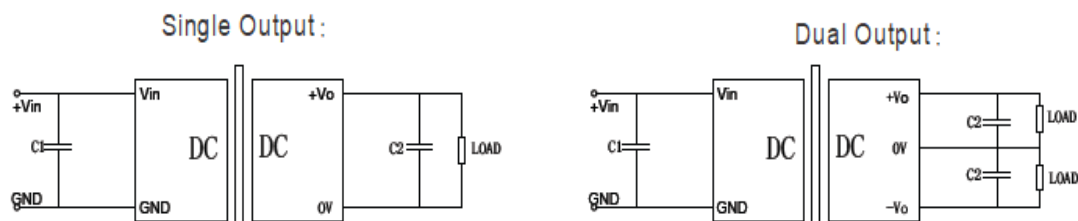
TUBE OUTLINE DIMENSIONS



MODEL SELECTION



TYPICAL APPLICATION RECOMMEND CIRCUIT



C1, C2 selection reference					
Input voltage	External C1	Single output	External C2	Dual output	External C2
5VDC	100uF	5VDC	330uF	±5VDC	220uF
12VDC	47uF	9VDC	330uF	±9VDC	220uF
24VDC	47uF	12/15VDC	100uF	±12±15VDC	47uF
48VDC	10uF	24VDC	47uF	±24VDC	22uF

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USING ATTENTIONS

1. Try to avoid no-load use: When the load power consumption is less than 10% of the module's rated output power, it is recommended to connect a dummy load to the output end or choose a module with a smaller rated power. The dummy load (resistance) can be calculated based on 5-10% of the module's rated power, and the resistance value is $U^2/(10\% \times 3W)$;
2. Avoid excessive output external capacitance: The capacitance value of the output terminal external capacitance C2 should not be too large, otherwise it may cause overcurrent or poor startup of the module. The specific selection should be based on the capacitance external connection table;
3. For situations with high requirements for ripple noise, an external LC filter circuit should be connected. The resonant frequency of the LC filter should be much lower than the switching frequency of the DC/DC module to prevent mutual interference, resulting in increased output ripple or module damage, , see pictures :

