CS & CD SERIES
3Watt Wide Input Range

FEATURES

- 3W DIL PACKAGE
- 9-36V,18-72V WIDE INPUT RANGE
- 100% BURN IN
- HIGH EFFICIENCY
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY

OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy		
Single/Dual		+/-2% max.
		2% max.
		5% max.
		2% max.
		5% max.
Temperature Coefficient		+/-0.05%/°C
Ripple & Noise(20MHz BW)[1]		100mVp-p max.
Line Regulation[2]		
Single/Dual		+/-1% max.
Load Regulation[4]		
Single/Dual		+/-0.5% max
	Output：3.3V	+/-1% max
Minimum Load		20% of Full Load
Short Circuit Protection		Continuous.
Short Circuit Restart		Automatic.
Over Load Protection	3W	110%~180%
Transient Response[6]		200uS max.
Capacitive Load		5V:1000uF max.
		12V:470uF max.
		15V: 330uF max.
		Other Output: ±220uF max.

INPUT SPECIFICATIONS

Input Voltage Range		2:1 or 4:1 Input Range
Input Filter		Pi Network
Protection		Fuse Recommended
Remote ON/OFF Control		Table 1
Start up Time(Nominal Input)		50mS max.

GENERAL SPECIFICATIONS

Efficiency		70% min.
Isolation Voltage[3]		
Single		1500VDC or 3000VDC min.
Dual Separate	In to Out	1500VDC min.
	Out1 to Out2	500VDC min.
Isolation Resistance		10^9 ohms min.
Isolation Capacitance		40pF max.
Switching Frequency		50KHz min.
MTBF[5]		>900,000 Hours
Weight		17.5g typ.
Case Material		Five-Side Shielded Case
Case Size(DIL)		31.8mm*20.3mm*12.2mm
Potting Material(DIL)		Epoxy(UL94V-0)
Potting Material(SMD)		Non potting
Radiated Emissions		EN55032 Class B

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40°C to +71°C
Storage Temperature	-55°C to +125°C
Case Temperature	+105°C max.
Humidity	95% max.
Cooling	Free-Air Convection

[1] Measured with 1uF ceramic capacitor connect to the output pins.
[2] High Line to Low Line.
[3] 1500VDC for 10 seconds
[4] Load Regulation is for output load current change from 20% to 100%.
[5] MIL-HDBK-217F @25°C , Ground Benign.
[6] 25% Step Load Change.

4:1 3W OUTPUT 1500VDC ISOLATION

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT[9] CURRENT(mA)		EFF (%)[10]	ISOLATION (VDC)
				FULL LOAD	NO LOAD		
CS-1203.3(ABC)3TM	9-36	3.3	700	260	20	74	1500
CS-1205(ABC)3TM	9-36	5	600	338	18	74	1500
CS-1212(ABC)3TM	9-36	12	250	321	18	78	1500
CS-1215(ABC)3TM	9-36	15	200	321	18	78	1500
CS-1224(ABC)3TM	9-36	24	125	321	20	78	1500
CD-1205(ABC)3TM	9-36	+/-5	+/-300	333	18	75	1500
CD-1212(ABC)3TM	9-36	+/-12	+/-125	320	18	78	1500
CD-1215(ABC)3TM	9-36	+/-15	+/-100	320	18	78	1500
CS-2403.3(ABC)3TM	18-72	3.3	700	136	10	71	1500
CS-2405(ABC)3TM	18-72	5	600	169	10	74	1500
CS-2412(ABC)3TM	18-72	12	250	160	10	78	1500
CS-2415(ABC)3TM	18-72	15	200	156	10	80	1500
CS-2424(ABC)3TM	18-72	24	125	160	10	78	1500
CD-2405(ABC)3TM	18-72	+/-5	+/-300	169	10	74	1500
CD-2409(ABC)3TM	18-72	+/-9	+/-167	158	10	79	1500
CD-2412(ABC)3TM	18-72	+/-12	+/-125	160	10	78	1500
CD- 2415(ABC)3TM	18-72	+/-15	+/-100	160	15	78	1500

Note: Other input to output voltages may be available. Please contact factory.

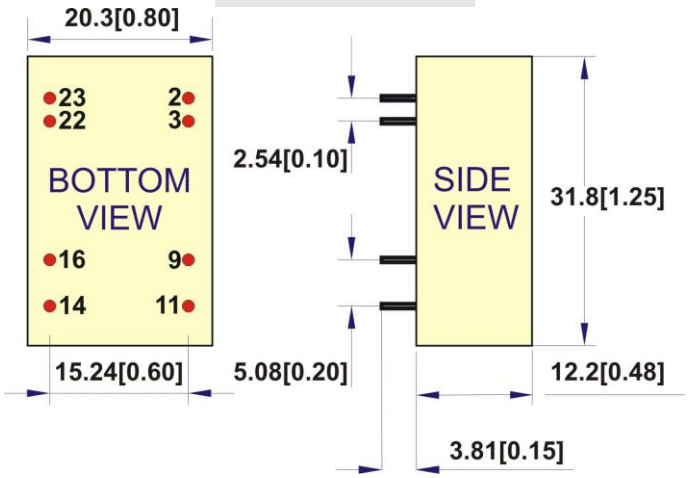
ORDERING INFORMATION:

FOR EXAMPLE: CS-1205A3TM (A PACKAGE 3W SINGLE OUTPUT)

CD-2405B3TM (B PACKAGE 3W DUAL OUTPUT)

MECHANICAL DIMENSIONS

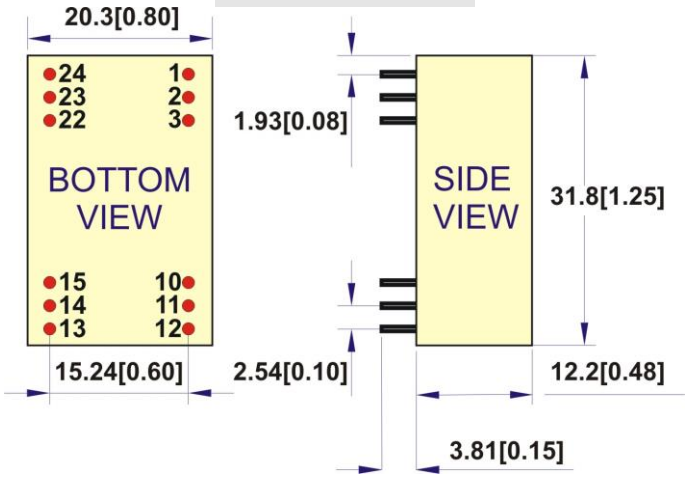
PACKAGE "A"



PIN	SINGLE	DUAL
2 & 3	-Vin	-Vin
9	NC	Common
11	NC	-Vout
14	+Vout	+Vout
16	-Vout	Common
22 & 23	+Vin	+Vin

NOTE:Pin Size is Tolerance 0.6Φ ±0.05mm
All dimensions are in mm(Inches)
Tolerance .X or .XX= ±0.5mm

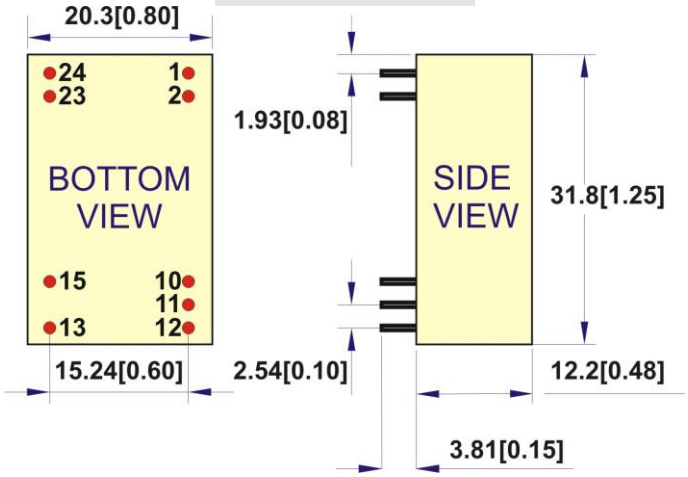
PACKAGE "B"



PIN	SINGLE	DUAL
1 & 24	+Vin	+Vin
2 & 23	NP	-Vout
3 & 22	NP	Common
10 & 15	-Vout	Common
11 & 14	+Vout	+Vout
12 & 13	-Vin	-Vin

NOTE:Pin Size is Tolerance 0.6Φ ±0.05mm
All dimensions are in mm(Inches)
Tolerance .X or .XX= ±0.5mm

PACKAGE "C"



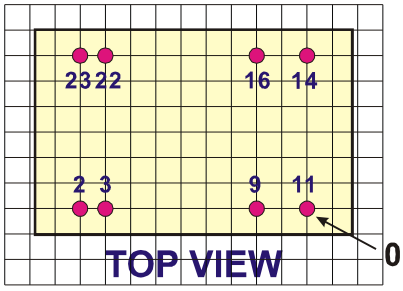
PIN	SINGLE	DUAL
1 & 2	+Vin	+Vin
10 & 11	NC	Common
12	-Vout	NC
13	+Vout	-Vout
15	NC	+Vout
23 & 24	-Vin	-Vin

NOTE:Pin Size is Tolerance 0.6Φ ±0.05mm
All dimensions are in mm(inches)
Tolerance .X or .XX= ±0.5mm

RECOMMENDED FOOTPRINT DETAILS

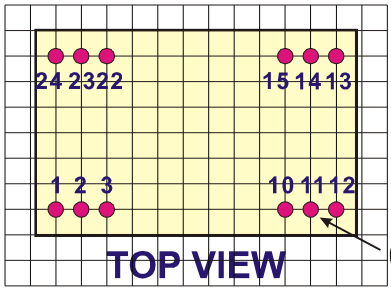
PACKAGE "A"

GRID:2.54 mm



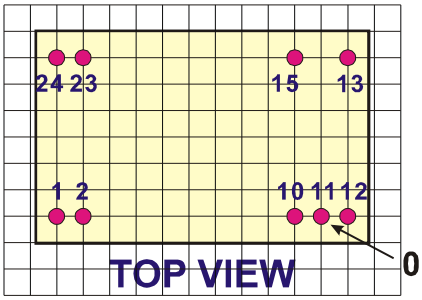
PACKAGE "B"

GRID:2.54 mm

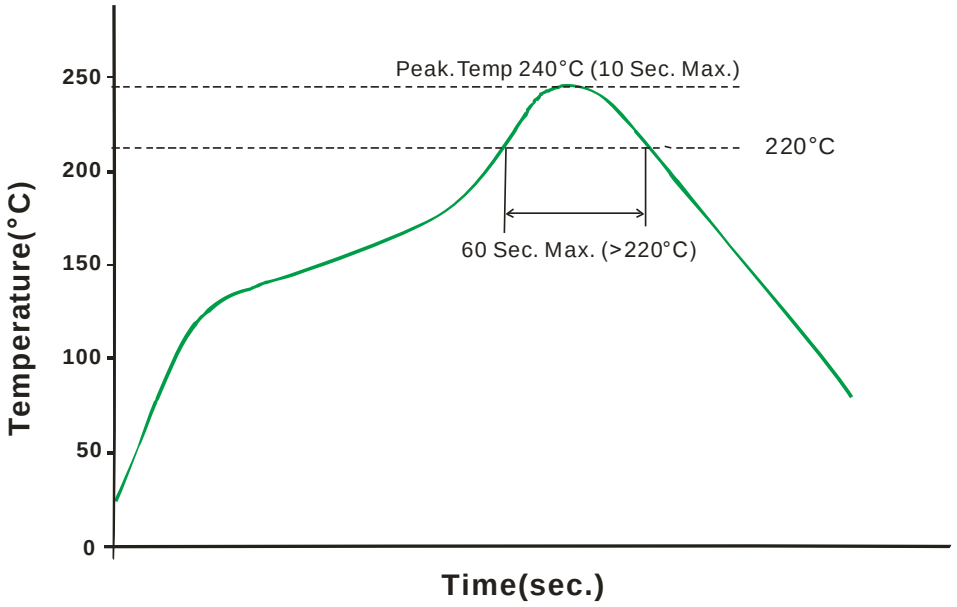


PACKAGE "C"

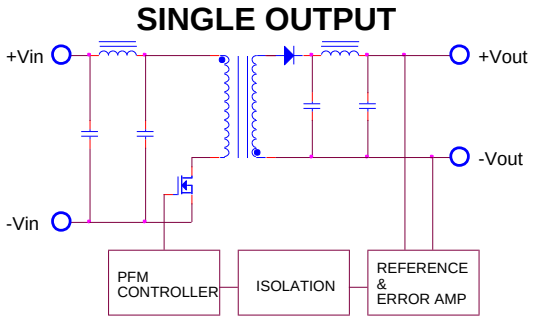
GRID:2.54 mm

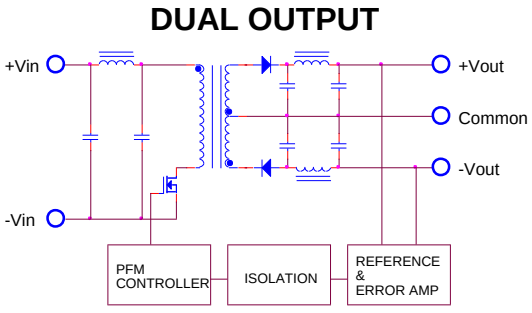


RECOMMENDED REFLOW SOLDERING PROFILE



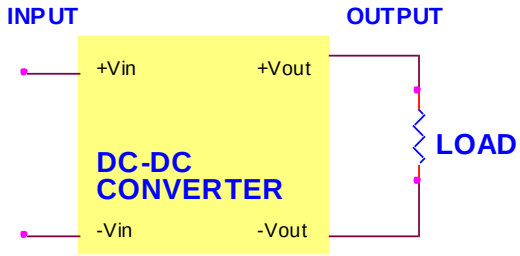
SIMPLIFIED SCHEMATIC



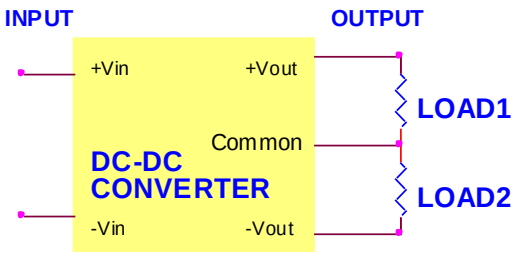


TYPICAL APPLICATIONS

SINGLE OUTPUT



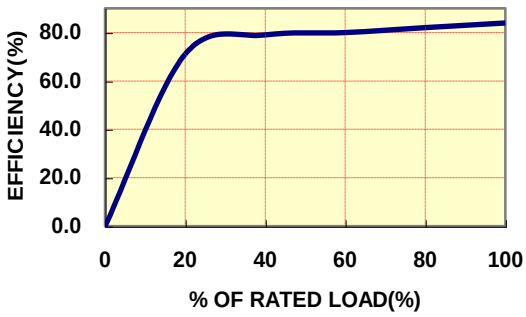
DUAL OUTPUT



TYPICAL PERFORMANCE CURVES

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

OUTPUT LOAD VS EFFICIENCY



TEMPERATURE DERATING

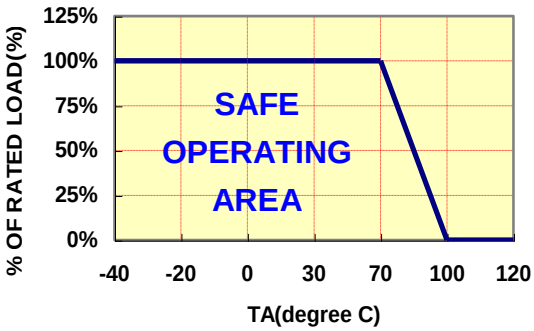
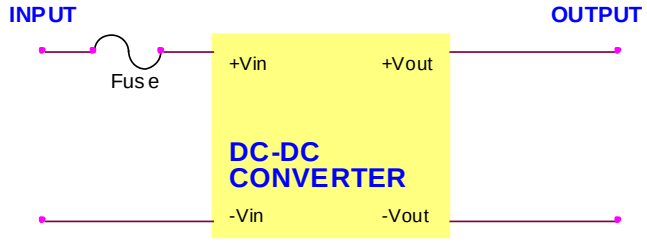


Table1 (Remote On/Off Control)

Remote On/Off Control		
Parameter	**Min**	**Max**
Supply On	Under 1 VDC or Open Circuit	
Supply Off	4VDC	
Standby Input Current		0.2mA
Control Input Current(On)		-0.5mA
Control Input Current(Off)		5mA
Control Common	Referenced to -Vin	

● INPUT FUSE SELECTION GUIDE

	9-36V INPUT VOLTAGE(VDC)	18-72 INPUT VOLTAGE(VDC)	
	1500mA Slow-Blow Type	800mA Slow-Blow Type	



Note: Certain applications may require the installation of external fuse in front of the input.

APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

No external capacitance is required for operation of the series.

To meet the reflected ripple requirements of the converter, an input impedance of less than 0.5 ohm from DC to 100KHz is required.

External output capacitance is not required for operation, however it is recommended that 10uF tantalum and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 1000uF.

We Can Offer EMC-Filter According To EN55032 Class B.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting –OUT as the negative output.