

interpoint

DCR SERIES DC-DC CONVERTERS

10301 Willows Road

P.O. Box 97005

Redmond, WA 98073-9705

TEL: (206) 882-3100

TEL: (800) 822-8782

FAX: (206) 882-1990



- Up to 4.0 watts output power
- 100 Megohm minimum isolation at 500 Vdc
- Small size — 0.875" x 1.75" x 0.375"
- Thick film hybrid technology
- 4 input voltage ranges — 5, 12, 28, 48 Vdc
- ± 12V and ± 15V regulated outputs

Interpoint DCR dc-dc converters provide a unique combination of high power and efficiency at a low cost. Small in size, and high in reliability, Interpoint converters can be used in virtually any application where additional on-card power requirements are needed.

Thick-film microcircuit techniques are used throughout the circuit and the end product is provided in a solid epoxy module with sturdy pins for increased mechanical stability.

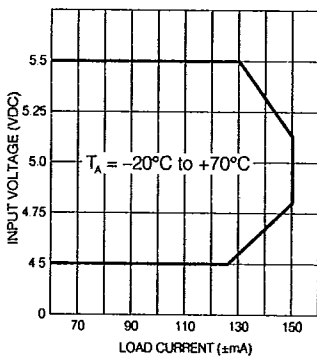
A copper heat spreader in close thermal contact with all heat dissipating elements is used on all DCR series power converters. The tab at the base of the unit, which is part of the heat spreader, is electrically neutral and can be attached to a copper area on a

P.C. board or to an alternate thermal sink. The temperature on this tab must not be allowed to exceed 100°C for safe operation of the converter.

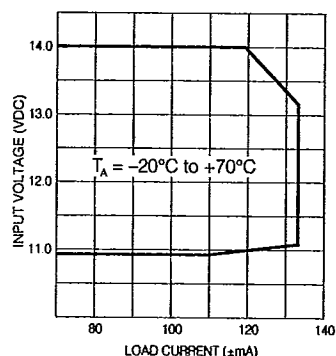
All DCR series devices utilize a non-saturating core converter operating typically at 100 kHz to 150 kHz. They also employ π type input filters to reduce reflected input line ripple. The isolation transformer uses a completely enclosed magnetic circuit which reduces the effect of radiated fields.

The DCR's dual tracking output regulator is provided with foldback current limiters which return to normal operation when the overload is removed. Indefinite short-circuit protection is provided.

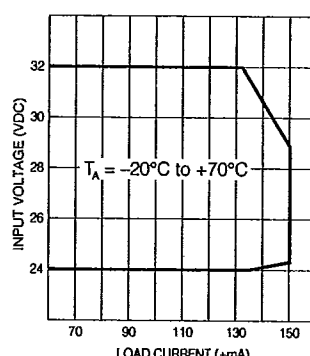
TYPICAL OPERATING LIMITS:



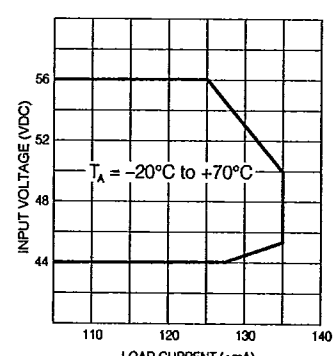
DCR0512DT
PERMISSIBLE OPERATING AREA
Figure 1



DCR1215DT
PERMISSIBLE OPERATING AREA
Figure 2



DCR2812DT
PERMISSIBLE OPERATING AREA
Figure 3



DCR4815DT
PERMISSIBLE OPERATING AREA
Figure 4

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TYPICAL CHARACTERISTICS: $T_A = 25^\circ\text{C}$ and $V_{IN} = \text{nominal}$ unless specified otherwise.

INPUT VOLTAGE RANGE: 5V models - 4.5 to 5.5 Vdc;
 12V models - 10.8 to 14.0 Vdc;
 28V models - 24.0 to 32.0 Vdc;
 48V models - 44.0 to 56.0 Vdc

OUTPUT VOLTAGE TOLERANCE: $\pm 1\%$ at full load

LOAD REGULATION: 0.03% maximum, no load to full load

LINE REGULATION: 0.05% maximum, low line to high line

ISOLATION: 100 megohm minimum at 500 Vdc.

CONVERTER FREQUENCY: 100 to 150 kHz

OUTPUT VOLTAGE TEMPERATURE COEFFICIENT:
 $\pm 0.015\%/^\circ\text{C}$ maximum

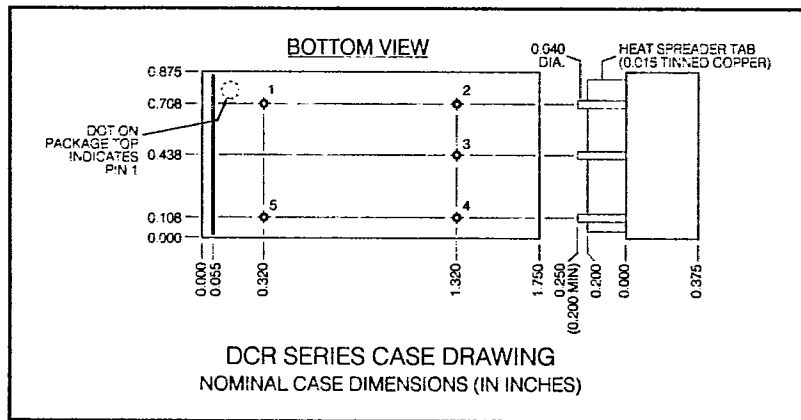
OPERATING TEMPERATURE: -20°C to $+70^\circ\text{C}$ ambient

STORAGE TEMPERATURE: -40°C to $+125^\circ\text{C}$

MODEL NUMBER	INPUT VOLTAGE	OUTPUT VOLTAGE	MAXIMUM LOAD ¹ $T_A = -20^\circ\text{C}$ TO $+70^\circ\text{C}$	MAXIMUM POWER ¹ $T_A = -20^\circ\text{C}$ TO $+70^\circ\text{C}$	EFFICIENCY (FULL LOAD)	INPUT CURRENT (NO LOAD)	INPUT RIPPLE CURRENT (FULL LOAD)	OUTPUT RIPPLE
	Vdc	Vdc	mA	WATTS	%	mA	mApp	mVpp
DCR0512DT	5	± 12	± 150	3.6	50	200	15	5.0
DCR0515DT	5	± 15	± 125	3.75	50	200	15	5.0
DCR1212DT	12	± 12	± 150	3.6	52	150	10	5.0
DCR1215DT	12	± 15	± 133	4.0	52	150	10	5.0
DCR2812DT	28	± 12	± 150	3.6	55	60	5	5.0
DCR2815DT	28	± 15	± 125	3.75	55	60	5	5.0
DCR4812DT	48	± 12	± 167	4.0	55	30	3	5.0
DCR4815DT	48	± 15	± 133	4.0	55	30	3	5.0

¹ See Figures 1 through 4 on this data sheet for operating ranges.

CASE DRAWING



DESIGNATION	PIN
+V _{IN}	1
+V _{OUT}	2
Output common	3
-V _{OUT}	4
Input common	5