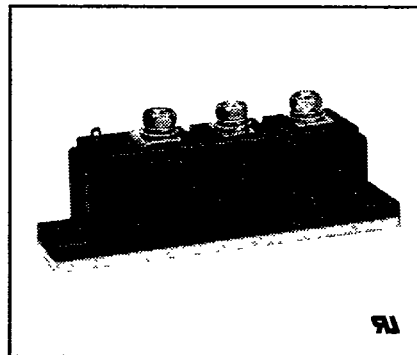
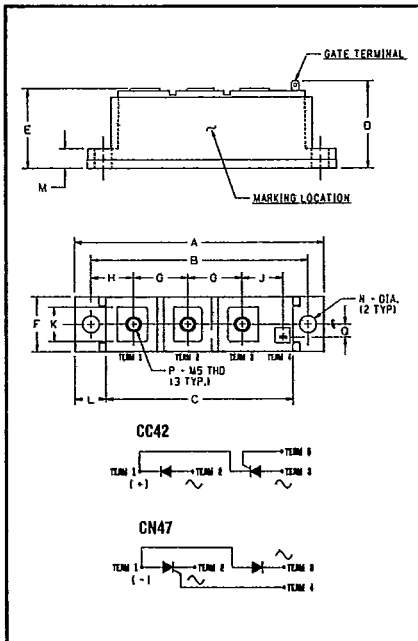




CC42 — — **40**
CN47 — — **40**

Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
 Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 72.75.15

**SCR/Diode Center Tap
 POW-R-BLOK™ Modules
 40 Amperes/400-1400 Volts**



CC42 — — **40**, **CN47** — — **40**
**SCR/Diode Center Tap
 POW-R-BLOK™ Modules**
 40 Amperes/400-1400 Volts

**400-1400 Volts, CC42 — — 40,
 CN47 — — 40 Outline Drawing**

Dimension	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	3.602	3.640	91.49	92.45
B	3.146	3.154	79.91	80.11
C	2.705	2.735	68.71	69.47
D	1.24	1.28	31.50	32.51
E	1.125	1.165	28.58	29.59
F	.795	.805	20.19	20.45
G	.788	.798	19.76	20.27
H	.608	.628	15.44	15.95
J	.585	.605	14.86	15.36
K	.480	.520	12.19	13.21
L	.43	.47	10.92	11.94
M	.265	.285	6.73	7.24
N0	.245	.255	6.22	6.48
P	—	—	M5 x 0.8	
Q	.180	.200	4.44	4.96

Description

Powerex SCR/Diode Center Tap POW-R-BLOK™ Modules are designed for use in applications requiring common anode or common cathode connections. The modules are isolated for easy mounting with other components on common heat-sinks. POW-R-BLOK™ has been tested and recognized by Underwriters Laboratories (QQX2 Power Switching Semiconductors).

Features:

- Isolated Mounting
- Glass Passivated Chips
- Metal Baseplate
- Low Thermal Impedance
- Quick Connect Gate Terminals
- UL Recognized

Applications:

- Battery Supplies
- Center Tap Circuits

Ordering Information

Example: Select the complete eight digit rating module part number you desire from the table — i.e. CC421240 is a 1200 Volt, 40 Ampere Common Cathode SCR/Diode Center Tap POW-R-BLOK™ Module.

Type	V _{ARM} Volts (x100)	Current Rating Amperes (40)
CC42	04	40
CN47	08	
	10	
	12	
	14	



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CC42 ___ 40, CN47 ___ 40

SCR/Diode

Center Tap POW-R-BLOK™ Modules

40 Amperes/400-1400 Volts

Absolute Maximum Ratings

Characteristics	Symbol	CC420440	CC420840	CC421040	CC421240	CC421440	Units
		CN470440	CN470840	CN471040	CN471240	CN471440	
Peak Forward Blocking Voltage	V_{DRM}	400	800	1000	1200	1400	Volts
DC Forward Blocking Voltage	$V_{D(DC)}$	320	640	800	960	1120	Volts
Peak Reverse Blocking Voltage	V_{RRM}	400	800	1000	1200	1400	Volts
Transient Peak Reverse Blocking Voltage (Non-Repetitive) $t < 5$ ms	V_{RSM}	500	950	1200	1450	1700	Volts
DC Reverse Blocking Voltage	$V_{R(DC)}$	320	640	800	960	1120	Volts
CC42 ___ 40 CN47 ___ 40							
RMS On-State Current	$I_{T(RMS)}, I_{F(RMS)}$			63			Amperes
Average On-State Current	$I_{T(AV)}, I_{F(AV)}$			40			Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	I_{TSM}, I_{FSM}			1200			Amperes
Peak Three-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	I_{TSM}, I_{FSM}			950			Amperes
Peak Ten-Cycle Surge (Non-Repetitive) On-State Current (60Hz)	I_{TSM}, I_{FSM}			800			Amperes
Peak One-Cycle Surge (Non-Repetitive) On-State Current (50Hz)	I_{TSM}, I_{FSM}			1095			Amperes
I^2t (for Fusing), 8.3 milliseconds	I^2t			6000			A ² sec
Critical Rate-of-Rise of On-State Current $\text{\textcircled{1}}$ (Non-Repetitive)	di/dt			800			Amperes/ μ s
Peak Gate Power Dissipation	P_{GM}			16			Watts
Average Gate Power Dissipation	$P_{G(AV)}$			3.0			Watts
Peak Forward Gate Voltage	V_{GFM}			10			Volts
Peak Reverse Gate Voltage	V_{GRM}			5.0			Volts
Peak Forward Gate Current	I_{GFM}			4.0			Amperes
Storage Temperature	T_{STG}			-40 to 150			°C
Operating Temperature	T_J			-40 to 125			°C
Maximum Mounting Torque M6 Mounting Screw	—			50			in.-lb.
Maximum Terminal Torque M5 Terminal Screw	—			35			in.-lb.
Module Weight (Typical)	—			142			Grams
V Isolation	V_{RMS}			2500			Volts

$\text{\textcircled{1}}$ Per JEDEC STD RS-397.5.2.2.8



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CC42 — — 40, CN47 — — 40

SCR/Diode

Center Tap POW-R-BLOK™ Modules

40 Amperes/400-1400 Volts

Electrical and Thermal Characteristics, $T_J = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Test Conditions	CC42 — — 40	CN47 — — 40	Units
Blocking State Maximums					
Forward Leakage Current, Peak	I_{DRM}	$T_J = 125^\circ\text{C}$, $V_{DRM} = \text{rated}$	15		mA
Reverse Leakage Current, Peak	I_{RRM}	$T_J = 125^\circ\text{C}$, $V_{RRM} = \text{rated}$	15		mA
Conducting State Maximums					
Peak On-State Voltage	V_{TM}	$I_{TM} = 250\text{A}$	2.6		Volts
Peak On-State Voltage	V_{FM}	$I_{FM} = 250\text{A}$	1.3		Volts
Switching Minimums					
Critical Rate of Rise of Off-State Voltage	dv/dt	$T_J = 125^\circ\text{C}$ Exponential to V_{DRM}	300		Volts/ μsec
Typical Turn-Off Time	t_q	$T_J = 125^\circ\text{C}$, $di_R/dt = 5\text{A}/\mu\text{s}$, reapplied dv/dt = $20\text{V}/\mu\text{s}$ linear to $0.8 V_{DRM}$	100		μsec
Typical Turn-On Time	t_{on}	$I_{TM} = 100\text{A}$	4		μsec
Thermal Maximums					
Thermal Resistance, Junction to Case	$R_{\theta JC}$	Per Device	0.28		$^\circ\text{C}/\text{Watt}$
Thermal Resistance, Case to Sink Lubricated	$R_{\theta CS}$	Per Device	0.2		$^\circ\text{C}/\text{Watt}$
Gate Parameters Maximums					
Gate Current to Trigger	I_{GT}	$V_D = 12\text{V}$	100		mA
Gate Voltage to Trigger	V_{GT}	$V_D = 12\text{V}$	3.0		Volts
Non-Triggering Gate Voltage	V_{GDM}	$T_J = 125^\circ\text{C}$, $V_D = V_{DRM}$	0.15		Volts

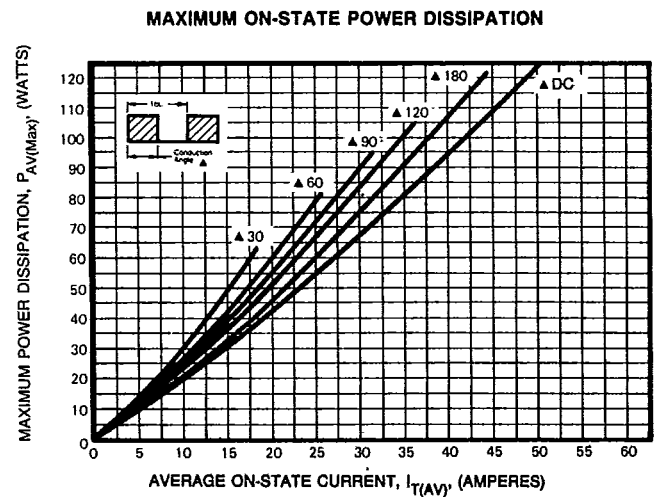
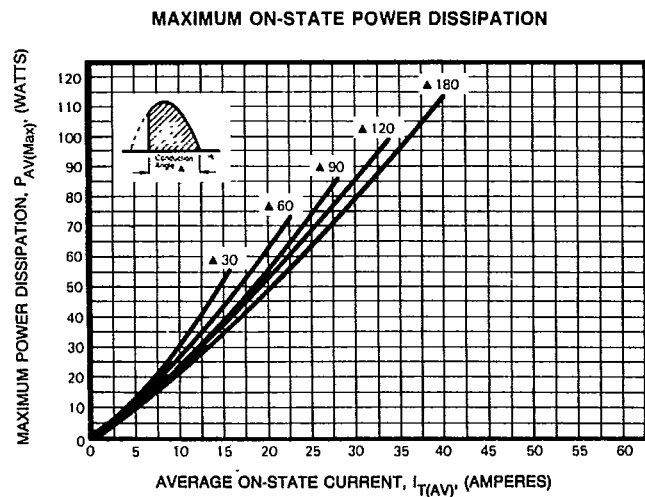
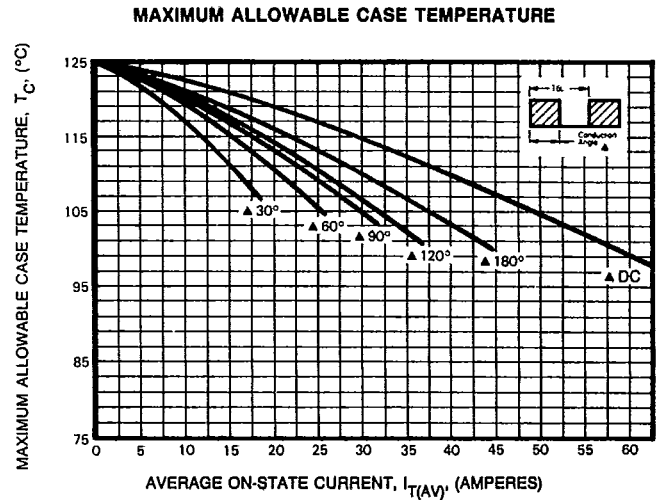
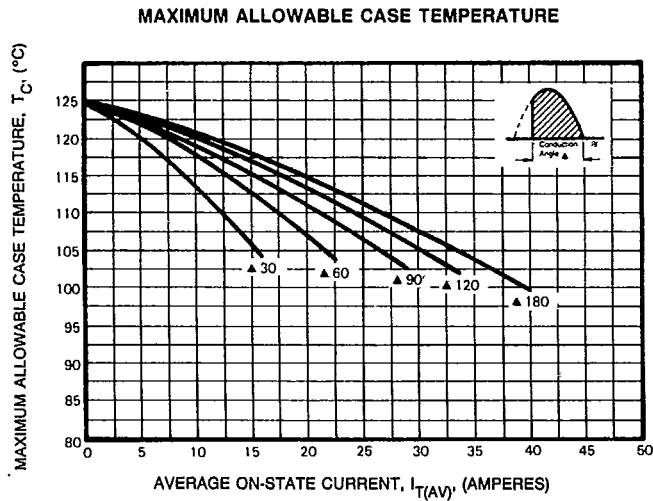
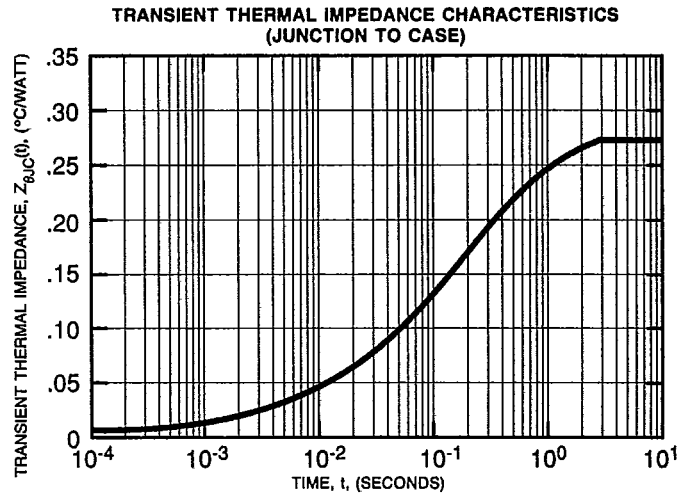
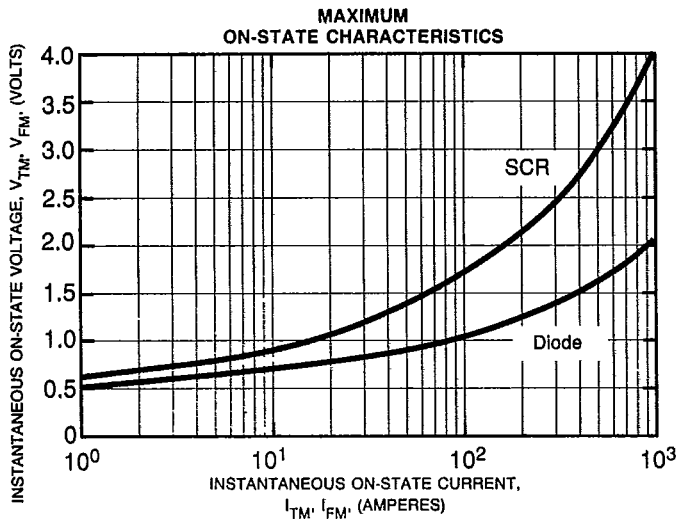
WARNING:

Internal insulation used is Beryllium Oxide. User should avoid grinding, crushing or abrading these portions. Care must be exercised in properly disposing of unwanted modules.



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 SCR/Diode
 Center Tap POW-R-BLOK™ Modules
 40 Amperes/400-1400 Volts





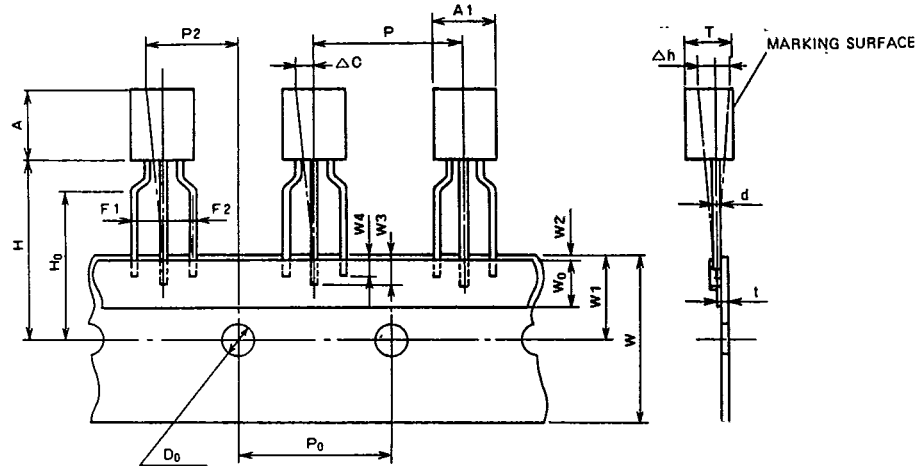
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Taping

STANDARD SPECIFICATIONS FOR TAPING OF MOLDED PACKAGE THYRISTORS AND TRIACS

TO-92 Package

Thyristor
CR02AM, CR03AM, CR04AM
Triac
BCR1AM



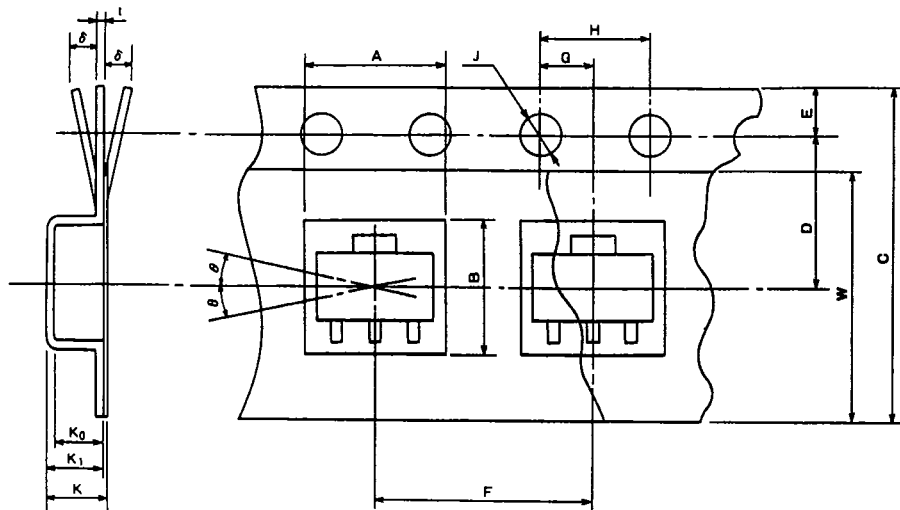
Taping dimensions

Description of symbol	Symbol	Dimensions (Unit:mm)	Remark
Product width	A1	5.0 MAX	
Product height	A	5.0 MAX	
Product thickness	T	3.7 MAX	
Lead wire diameter	d	0.6 MAX	
Sticker lead wire length (1)	W3	2.5 MIN	
Sticker lead wire length (2)	W4	2.0 MIN	
Pitch between products	P	12.7 ± 1.0	
Feed hole pitch	P ₀	12.7 ± 0.3	The cumulative pitch error is ± 1mm per 20 pitches.
Feed hole deviation (1)	P2	6.35 ± 1.3	
Distance between lead wires	F1, F2	2.5 ± 0.4	
Defective product (1)	Δh	0 ± 2.0	
Tape width	W	18.0 ± ^{1.0} / _{0.5}	
Sticker tape width	W ₀	6.0 ± 0.5	
Feed hole deviation (2)	W1	9.0 ± 0.5	
Sticker tape deviation	W2	0.5 MAX	
Position of product bottom surface	H	17.5 MIN	
Lynch height of lead wire	H ₀	16.0 ± 0.5	
Feed hole diameter	D ₀	4.0 ± 0.2	
Tape thickness	t	0.7 ± 0.2	
Defective product (2)	ΔC	0 ± 1.0	



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Powerex Semiconductor Data Book
 Taping



SOT-89 Package

Thyristor
 CR08AS

Taping dimensions

Description of symbol		Symbol	Dimensions/angles Unit:mm	Remark
Parts Insertion	Height	A	5.0 ± 0.1	Cross-section of the surface 0.5mm above the Inner bottom
	Width	B	4.6 ± 0.1	Cross-section of the surface 0.5mm above the inner bottom
Concave square hole	Depth	K ₀	1.8 ± 0.1	Inner space
	Pitch	F	8.0 ± 0.1	Cumulative error +0.1/-0.3 MAX/10 pitches
Round feed hole	Diameter	J	$\phi 1.5 \pm 0.05$	
	Pitch	H	4.0 ± 0.1	Cumulative error +0.1/-0.3 MAX/10 pitches
	Position	E	1.5 ± 0.1	Distance between the tape edge and the hole center
Distance between center lines	Vertical	G	2.0 ± 0.5	Center line of concave square hole and round feed hole
	Horizontal	D	5.65 ± 0.05	Center line of concave square hole and round feed hole
Cover tape	Width	W	$9.5 + 0.3/-0$	Thickness: 0.1 MAX
Carrier tape	Width	C	12 ± 0.2	Warp ± 0.3 MAX
	Thickness	t	0.3 ± 0.05	
	Package hole depth	K ₁	2.1 ± 0.1	
Device	Package dimensions	—	—	As shown in (e)
	Inclination	θ	30° MAX.	
Total Thickness		K	2.3 ± 0.1	Total thickness including cover and carrier tapes