

# Reverse Conducting Thyristors (Note 1)

$I_T(AV)$ $I_R(AV)$ Tc=65°C Note 2 (Amps)	$I_{TSM}/I_{RSM}$ (Amps × 10 <sup>3</sup> ) 50 Hz 60 Hz		$I_T^2/I_{R^2}$ @ 8.3 ms (A <sup>2</sup> sec × 10 <sup>3</sup> )	$I_{DRM}$ @ T <sub>J(Max)</sub> V <sub>DRM(Max)</sub> (mA)	V <sub>DRM</sub> Range (Volts)	V <sub>RM</sub> @ T <sub>J(Max)</sub> I <sub>RM</sub> V <sub>RM</sub> (Amps) (Volts)	V <sub>TM</sub> @ T <sub>J(Max)</sub> I <sub>TM</sub> V <sub>TM</sub> (Amps) (Volts)	t <sub>q</sub> (Max) @ T <sub>J(Max)</sub> (μsec)	Max d <sub>i</sub> /d <sub>t</sub> @ T <sub>J(Max)</sub> (A/μsec)	Min d <sub>v</sub> /d <sub>t</sub> @ T <sub>J(Max)</sub> (V/μsec)
60 @ 81°C	1.09	1.2	6							
60 @ 85°C	1.09	1.2	6	15	200-600	190 2.45	190 2	20	200	300
150 @ 77°C	2.7	3	38							
60 @ 81°C	1.09	1.2	6	15	600-1200	190 2.05	470 1.8	30	200	300
150 @ 77°C	2.7	3	38							
60 @ 81°C	1.09	1.2	6	15	200-800	190 2.05	470 1.8	20	200	300
150 @ 82°C	2.7	3	38							
60 @ 88°C	1.09	1.2	6	15	600-1200	190 2.05	470 1.8	30	200	300
150 @ 82°C	2.7	3	38							
60 @ 88°C	1.09	1.2	6	15	200-800	190 2.05	470 1.8	20	200	300
250 @ 83°C	4.6	5	110							
100 @ 85°C	1.8	2	17	30	600-1200	310 2.05	780 1.75	30	200	300
250 @ 83°C	4.6	5	110							
100 @ 85°C	1.8	2	17	30	200-800	310 2.05	780 1.75	20	200	300
250 @ 83°C	4.6	5	110							
100 @ 85°C	1.8	2	17	30	600-1200	310 2.05	780 1.75	30	200	300
250 @ 83°C	4.6	5	110							
100 @ 85°C	1.8	2	17	30	200-800	310 2.05	780 1.75	20	200	300
400 @ 77°C	6.4	7	200							
150 @ 103°C	3.2	3.5	50	50	600-1200	1250 2.2	1250 2.2	30	200	300
400 @ 77°C	6.4	7	200							
150 @ 103°C	3.2	3.5	50	50	200-800	1250 2.2	1250 2.2	20	200	300
400 @ 89°C	6.4	7	200							
150 @ 102°C	3.2	3.5	51	80	2500	1200 4	600 2	35	300	700
400 @ 81°C	6.4	7	200							
150 @ 102°C	3.2	3.5	51	80	2500	1200 4	600 2	50	300	700
1000 @ 60°C	12.8	14	820							
400 @ 59°C	6.4	7	200	150	2500	2400 4.5	1000 2.1	35	300	700
1000 @ 47°C	12.8	14	820							
400 @ 59°C	6.4	7	200	150	2500	2400 4.5	1000 2.1	50	300	700

Note 1: Junction Temperature Range = -40 to 125°C  
 Note 2: Current Rating at 60 Hz, 180° Conduction, Half Sine

Gate Trigger Voltage and Current, T <sub>J</sub> =25°C		PACKAGE INFORMATION				STYLE	Outline	TYPE NO.
		SCR °C/W	Rejc Diode °C/W	Max Mounting Force or Torque				
V <sub>gr</sub> (Volts)	I <sub>gr</sub> (mA)							
3	150	.35	.40	<u>210 lb-in</u> 180 kg-cm	M12 x 1.5 Stud	Metric	RCR70BY	
3	200	.17	.35	<u>420 lb-in</u> 360 kg-cm	M20 x 1.5 Stud	Metric	RCR150BX	
3	200	.17	.35	<u>420 lb-in</u> 360 kg-cm	M20 x 1.5 Stud	Metric	RCR150BY	
3	200	.15	.30	<u>1580 lbs</u> 7.1 KN	Press Pak	14.5 x 43 mm	FR150DX	
3	200	.15	.30	<u>1580 lbs</u> 7.1 KN	Press Pak	14.5 x 43 mm	FR150DY	
3	250	.10	.20	<u>700 lb-in</u> 600 kg-cm	M24 x 1.5 Stud	Metric	RCR300BX	
3	250	.10	.20	<u>700 lb-in</u> 600 kg-cm	M24 x 1.5 Stud	Metric	RCR300BY	
3	250	.10	.20	<u>2420 lbs</u> 10.8 KN	Press Pak	14.5 x 50 mm	FR300DX	
3	250	.10	.20	<u>2420 lbs</u> 10.8 KN	Press Pak	14.5 x 50 mm	FR300DY	
4	350	.05	.10	<u>3960 lbs</u> 17.7 KN	Press Pak	18 x 85 mm	FR500AX	
4	350	.05	.10	<u>3960 lbs</u> 17.7 KN	Press Pak	18 x 85 mm	FR500AY	
4	350	.035	.10	<u>6600 lbs</u> 30 KN	Press Pak	21 x 92 mm	FR600AX	
4	350	.035	.10	<u>6600 lbs</u> 30 KN	Press Pak	21 x 92 mm	FR600AW	
4	350	.022	.07	<u>7920 lbs</u> 35.6 KN	Press Pak	21 x 102 mm	FR1000BX	
4	350	.022	.07	<u>7920 lbs</u> 35.6 KN	Press Pak	21 x 102 mm	FR1000BW	



T-91-01

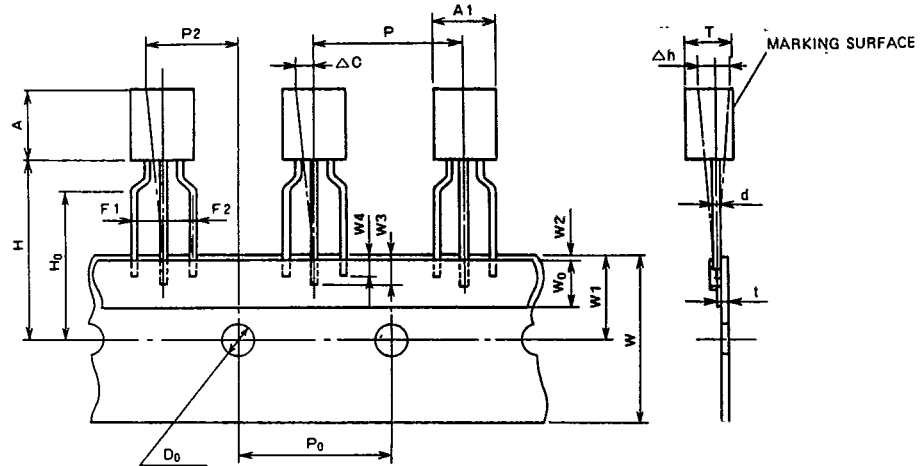
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272  
 Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

## Taping

### STANDARD SPECIFICATIONS FOR TAPING OF MOLDED PACKAGE THYRISTORS AND TRIACS

#### TO-92 Package

Thyristor  
CR02AM, CR03AM, CR04AM  
Triac  
BCR1AM



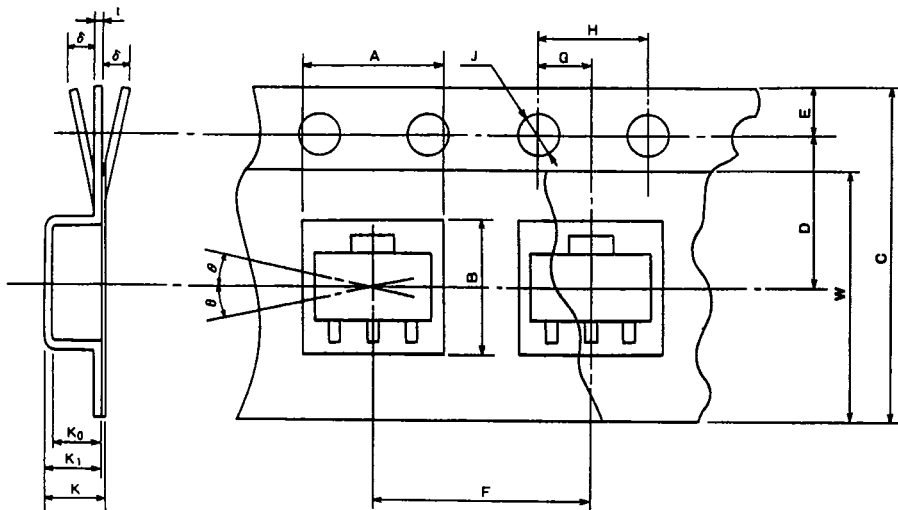
Taping dimensions

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 <sub>0</sub>	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 ± <sup>1.0</sup> / <sub>0.5</sub>	
Sticker tape width	W <sub>0</sub>	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 <sub>0</sub>	16.0 ± 0.5	
Feed hole diameter	D <sub>0</sub>	4.0 ± 0.2	
Tape thickness	t	0.7 ± 0.2	
Defective product (2)	ΔC	0 ± 1.0	



Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272  
 Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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