Phase Control Thyristors (SCRs)

$I_{T(AV)}$ T_C=65° C 50% Duty Cycle, Half Sine (Amps)	I_{TSM} (Amps) 50 Hz	60 Hz	I_{DRM}/I_{RRM} @ Rated V_{DRM}/V_{RRM} and $T_{J(Max)}$ (mA)	I^2t for Fusing @ 8.3 ms (A^2sec)	V_{DRM}/V_{RRM} Range (Volts)	V_{TM} @ I_{TM} and T_C=25°C I_{TM} (Amps)	V_{TM} (Volts)	Chip Size (mm)	Junction Temp. Range (°C)	$R_{\Theta JC}$ (°C/W)	Typical t_q @ $T_{J(Max)}$ (µsec)
6 @ 101°C	170	200	2	166	400	20	1.4	—	-40 to 125	1.8	—
6 @ 85°C	78	90	2	33.6	400-600	20	1.7	—	-40 to 125	3	—
6.4	82	90	.5	33.6	25-600	20	1.95	—	-40 to 100	2 to 3	—
6.4	82	90	.5	33.6	25-600	20	1.95	—	-40 to 100	2	—
6.5	113	125	3 to 22.5	65	25-500	10	1.6	—	-40 to 100	1.3	50
6.5	113	125	6	65	500-700	50	2.9	—	-40 to 125	2.5	50
8 @ 88°C	104	120	2	60	400-600	20	1.4×	—	-40 to 125	3	—
10	113	125	4 to 13	65	25-800	30	2.25	—	-40 to 105	1.5	—
10 @ 92°C	113	125	3 to 22.5	65	25-500	10	1.6	—	-40 to 125	1.3	50
11	136	150	1.5 to 6.5	93.4	50-1200	31.4	2.3	—	-40 to 125	1.5	75
13	218	240	5	239	50-600	239	1.7	—	-40 to 100	1.6	—
14.5	226	250	1.5 to 6.5	259	50-1200	50	2.3	—	-40 to 125	1.5	75
16	226	250	1	259	25-600	100	1.9	—	-40 to 100	1.0	—
16	226	250	1	259	25-600	100	1.9	—	-40 to 100	1.0	—
16	226	250	1	259	25-600	100	1.9	—	-40 to 100	1.0	—
16	226	250	1	259	25-600	100	1.9	—	-40 to 100	1.0	—
16	136	150	4 to 13	93.4	25-800	50	2	—	-65 to 125	1.7	—
16	205	225	4.5 to 13	210	25-700	50	2	—	-65 to 150	1.7	75
18	327	360	1.5 to 6.5	538	50-1200	69	2.3	—	-40 to 125	1.5	75
21	226	250	1	259	100-600	69	1.85	—	-40 to 100	1.0	—
21	226	250	1	259	100-600	69	1.85	—	-40 to 100	1.0	—

* = Typical Value
° = Other Packages Available, Contact Factory
× = Rating @ $T_{J(Max.)}$

Typical t_{on} (μsec)	Min di/dt @ $T_{J(Max)}$ Repetitive on-state (A/μsec)	Min dv/dt @ $T_{J(Max)}$ (V/μsec)	Max V_{GT} (V)	Max I_{GT} (mA)	PACKAGE INFORMATION: Max Mounting Force or Torque	STYLE	Outline	TYPE NO.
—	—	—	1.5	30	—	Flat Pak	TO-220	CR6AM
—	—	—	1.3	20	—	Flat Pak	TO-220	CR6CM
—	50-100	50*	2	40	25 lb-in / 29 kg-cm	Non-isolated Stud	—	°C220
—	50-100	50*	2	40	800 lb / 3.6 KN	Press Fit	—	C222
—	10	—	3.5	150	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	C36
—	—	—	1.75	30	—	Flat Pak	TO-220	CR8AM
—	20	—	3.5	150	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	C37
3	25	50*	3.5	80 @25°C	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	2N1842-1850
3	25	100	3.5	80 @25°C	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	2N1842A-1850A
—	150	50	3	40-80	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	T400__ __10
—	40-60	200	2.5	75	800 lb / 3.6 KN	Press Fit/Stud	—	2N5164-5171
—	100	100	3	40-80	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	T400__ __16
—	40-100	200*	2	40	25 lb-in / 29 kg-cm	Non-isolated Stud	—	°C230
—	40-100	200*	2	40	800 lb / 3.6 KN	Press Fit	—	C232
—	40-100	200*	2	20	25 lb-in / 29 kg-cm	Non-isolated Stud	—	°C231
—	40-100	200*	2	20	800 lb / 3.6 KN	Press Fit	—	C233
—	10	50*	3	80	30 lb-in / 35 kg-cm	Non-isolated Stud	—	2N681-692
—	150	50	3	40-80	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	T400__ __22
—	15-100	10-25	3	80	30 lb-in / 35 kg-cm	¼-28 Stud	TO-48	C35
—	150	50	3	80	800 lb / 3.6 KN	Press Fit	—	2N3870-3873
—	150	50	3	80	25 lb-in / 29 kg-cm	Non-isolated Stud	—	2N3896-3899

Modified TO-65

JEDEC TO-83

POWEREX

T-91-01

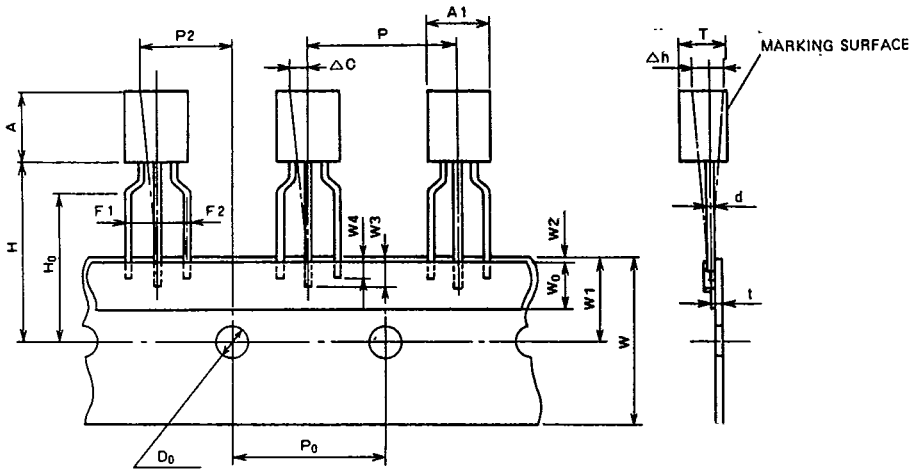
Powerex, Inc., Hillis Street, Youngwood, Pennsylvania 15697 (412) 925-7272
Powerex Europe, S.A., 428 Avenue G. Durand, BP107, 72003 Le Mans, France (43) 41.14.14

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_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	$18.0 \pm^{1.0}_{0.5}$	
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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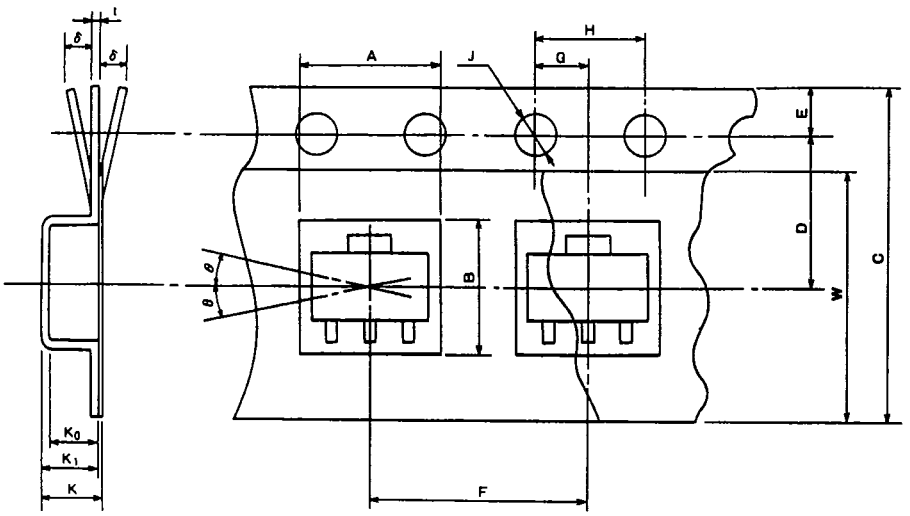
Powerex Semiconductor Data Book
Taping



SOT-89 Package

Thyristor
CR08AS

Taping dimensions

Description of symbol		Symbol	Dimensions/angles Unit:mm	Remark
Parts insertion Concave square hole	Height	A	$5.0 \pm^{0.1}_{0.1}$	Cross-section of the surface 0.5mm above the inner bottom
	Width	B	$4.6 \pm^{0.1}_{0.1}$	Cross-section of the surface 0.5mm above the inner bottom
	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	$\phi 1.5 \pm^{0.1}_{0.05}$	
	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 δ0.3 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