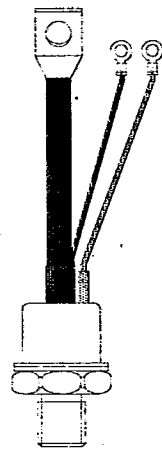


Phase Control Thyristors

280 TO 520 AMPS RMS

International Rectifier

T-25-01

Part number	V _{RRM} V _{DRM} (V)	I _{T(RMS)} (A)	I _{T(AV)} (A)	T _C (°C)	I _{TSM} (1)		V _{GT} (2) (V)	I _{GT} (2) (mA)	V _{TM} (3) (V)	dv/dt (4) (V/μs)	R _{thJC} DC (°C/W)	Case Outline Number	Notes	Case style																																				
					50Hz (A)	60Hz (A)																																												
ST180S02P ST180S04P ST180S06P ST180S08P ST180S10P ST180S12P ST180S14P ST180S16P	200 400 600 800 1000 1200 1400 1600	280	180	90	4260	4460	3.0	150	1.72	400	0.12	T9 A	(5)	TO-209AB (TO-93)																																				
ST200S02P ST200S04P ST200S06P ST200S08P ST200S10P ST200S12P ST200S14P ST200S16P	200 400 600 800 1000 1200 1400 1600											T10 A																																						
ST230S02P ST230S04P ST230S06P ST230S08P ST230S10P ST230S12P ST230S14P ST230S16P	200 400 600 800 1000 1200 1400 1600											360			230	85	4890	5120	3.0	150	1.50	400	0.12	T9 A	(5)																									
S23DG2A0 S23DG2B0 S23DG4A0 S23DG4B0 S23DG6A0 S23DG6B0 S23DG8A0 S23DG8B0 S23DG8B0 S23D10A0 S23D10B0 S23D12A0 S23D12B0 S23D14A0 S23D14B0 S23D16A0 S23D16B0 S23D18A0 S23D18B0 S23D20A0	200 200 400 400 600 600 800 800 1000 1000 1000 1200 1200 1400 1400 1600 1600 1800 1800 2000																							370			235 215 235 215 215 200 215 200 200 190 200 190 190 180 190 180 180 180 180	85	6600 6100 6600 6100 6100 5350 6100 5350 5350 4950 4950 4950 4950 4600 4950 4600 4600 4600 4600	6900 6400 6900 6400 6400 5600 6400 5600 5600 5200 5200 5200 5200 4800 5200 4800 4800 4800 4800	2.5	150	1.22 1.30 1.22 1.30 1.30 1.38 1.30 1.38 1.30 1.44 1.38 1.44 1.44 1.53 1.44 1.53 1.53 1.53	500	0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14 0.14	T9 B	(6) (7) (13)													
ST260S02P ST260S04P ST260S06P ST260S08P ST260S10P ST260S12P ST260S14P ST260S16P	200 400 600 800 1000 1200 1400 1600																																			T10 B														
ST280S02P ST280S04P ST280S06P ST280S08P	200 400 600 800																																			410		260	75	6320	6620	3.0	200	1.90	400	0.11	T9 A	(5)	TO-209AE (TO-118)	
ST300S02P ST300S04P ST300S06P ST300S08P ST300S10P ST300S12P ST300S14P ST300S16P	200 400 600 800 1000 1200 1400 1600																																														T12 A			
ST330S02P ST330S04P ST330S06P ST330S08P ST330S10P ST330S12P ST330S14P ST330S16P	200 400 600 800 1000 1200 1400 1600																																														471			300
ST280S02P ST280S04P ST280S06P ST280S08P	200 400 600 800	T9 A																																																
ST280S02P ST280S04P ST280S06P ST280S08P	200 400 600 800	440	280	85	6160	6450	3.0	150	1.28	400	0.12		T9 A	(5)																																				
ST300S02P ST300S04P ST300S06P ST300S08P ST300S10P ST300S12P ST300S14P ST300S16P	200 400 600 800 1000 1200 1400 1600											T12 A																																						
ST330S02P ST330S04P ST330S06P ST330S08P ST330S10P ST330S12P ST330S14P ST330S16P	200 400 600 800 1000 1200 1400 1600											520	330		75	7900	8270	3.0	200	1.50	400	0.11	T12 A	(5)																										
ST280S02P ST280S04P ST280S06P ST280S08P	200 400 600 800																						T9 A																											

(1) 100% V_{RRM} reapplied T_J = 125°C.

(2) T_J = 25 °C.

(3) π x I_{T(AV)} @ T_J = 25°C

(4) Linear to 0.8 V_{DRM}; T_J = 125 °C.

(5) Available with metric stud; change "P" to "M" at end of part number: ST180S10M.

(6) Max. T_J = 125 °C for standard types. High temperature types available with max. T_J = 150 °C for V_{RRM} ≤ 1200V. To specify insert "H" before voltage code: S23DGH2A0.

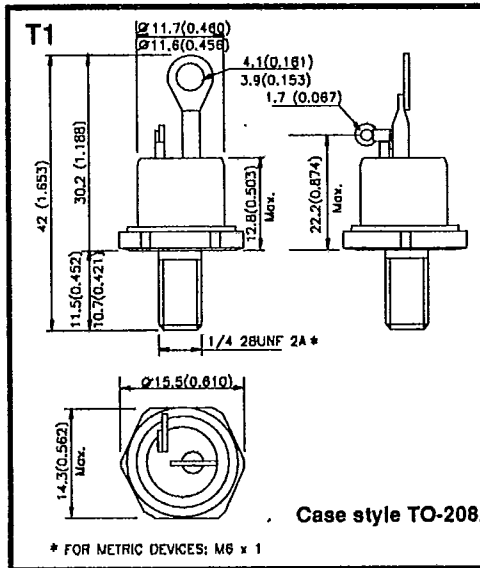
(7) Available with flat base: To specify add "F" to the end of part number: S23D20A0F.

(8) Max. T_J = 125 °C.

(13) U.S. Standard.

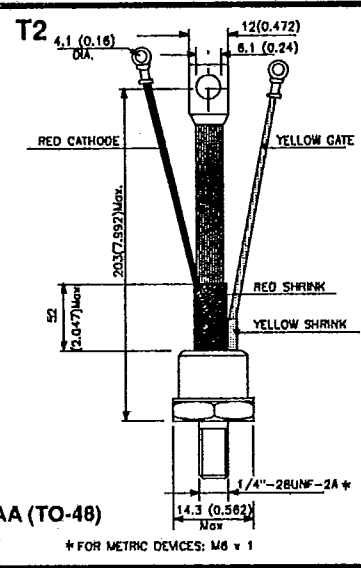
Case outlines

T-25-01



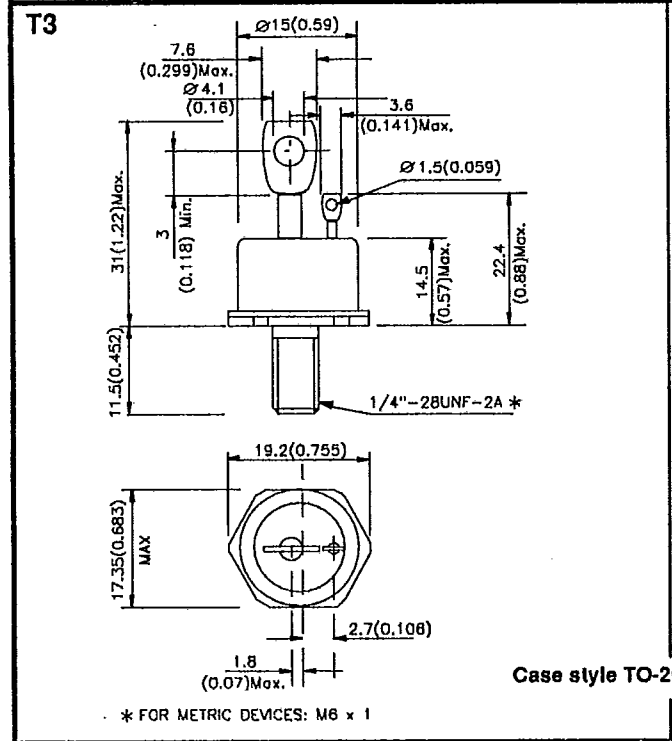
Case style TO-208AA (TO-48)

* FOR METRIC DEVICES: M6 x 1



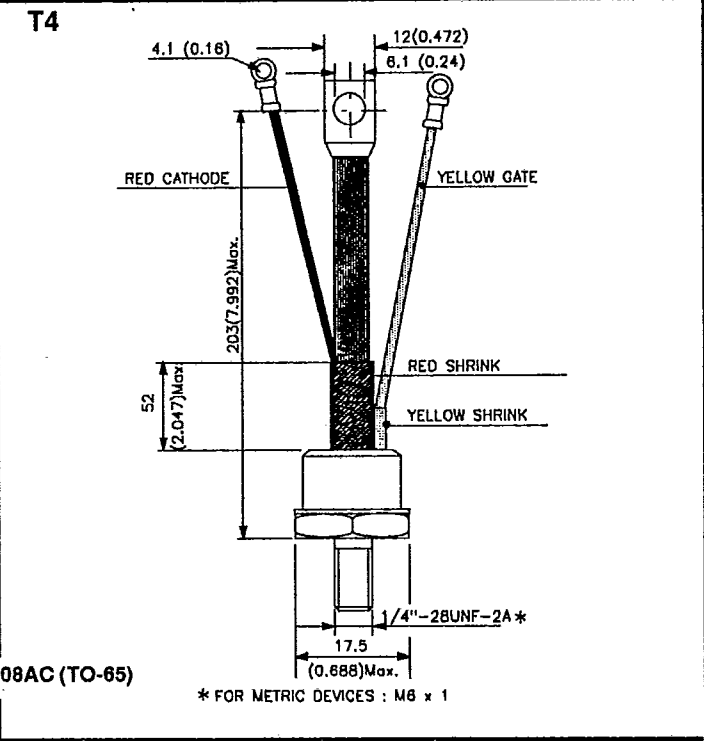
* FOR METRIC DEVICES: M6 x 1

All dimensions in millimetres (inches).
 Dimensions are nominal
 Full engineering drawings are available on request

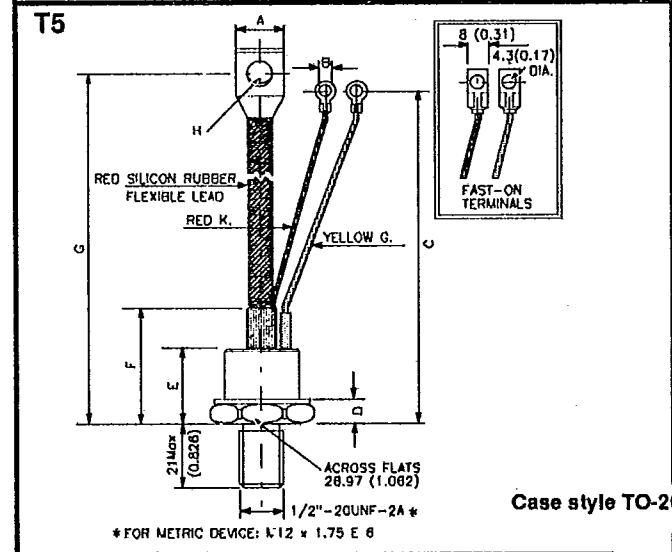


Case style TO-208AC (TO-65)

* FOR METRIC DEVICES: M6 x 1

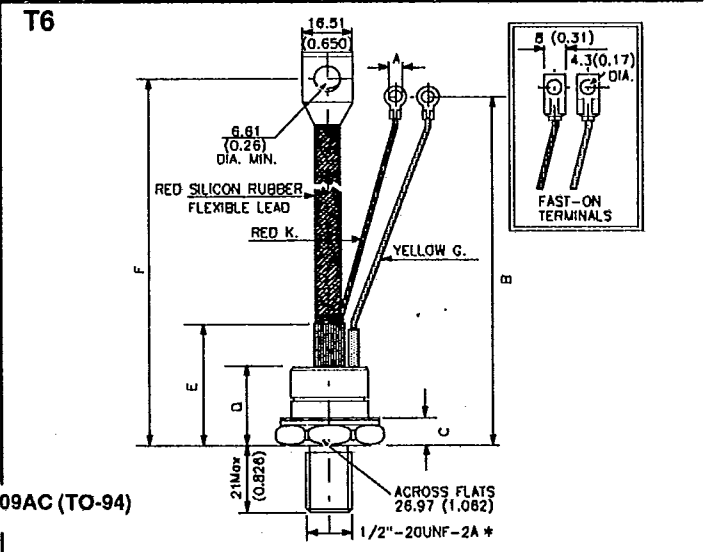


* FOR METRIC DEVICES: M6 x 1



Case style TO-209AC (TO-94)

* FOR METRIC DEVICE: M12 x 1.75 E 6



* FOR METRIC DEVICE: M12 x 1.75 E 6

	A	B	C	D	E	F	G	H	
mm	15	7.6	173.99	8.9	20.5	58	160	8.3	T5 A
Inches	(0.59)	(0.299)	(6.850)	(0.350)	(0.807)	(2.283)	(6.299)	(0.326)	
mm	16.51	4.3	215	12.5	29	170	8.6		T5 B
Inches	(0.650)	(0.17)	(8.46)	(0.49)	(1.14)	(6.69)	(0.28)		
mm	14.60	3.58	173.99	8.9	20.44	38.1	154.49	6.8	T5 C
Inches	(0.575)	(0.140)	(6.850)	(0.350)	(0.805)	(1.500)	(6.082)	(0.26)	

	A	B	C	D	E	F	
mm	4.3	215	12.5	29	58	170	T6 A
Inches	(0.17)	(8.46)	(0.49)	(1.14)	(2.283)	(6.020)	
mm	3.58	173.99	8.9	28.57	58	152.91	T6 B
Inches	(0.140)	(6.850)	(0.350)	(1.125)	(2.283)	(6.020)	

Case outlines

T-25-01

T7

*** FOR METRIC DEVICE: M12 x 1.75 E 6**

	A	B	C	D	E	F	
mm	20.5	1.8	9.9	9.5	10	2.3	T7 A
Inches	(0.807)	(0.07)	(0.374)	(0.22)	(0.393)	(0.090)	
mm	20.4	1.85	9.77	9.29	10.16	2.92	T7 B
Inches	(0.805)	(0.085)	(0.385)	(0.206)	(0.400)	(0.115)	

T8

*** FOR METRIC DEVICE: M12 x 1.75 E 6**

Case style TO-208AD (TO-83)

T9

*** FOR METRIC DEVICE : M16 x 1.5 E 6**

	A	B	C	D	E	F	G	
mm	4.3	220	19	210	38.5	16	27.5	T9 A
Inches	(0.17)	(8.66)	(0.75)	(8.26)	(1.51)	(0.63)	(1.08)	
mm	3.56	196.21	19.17	186.64	31.75	12.70	27.82	T9 B
Inches	(0.140)	(7.725)	(0.755)	(7.35)	(1.250)	(0.500)	(1.095)	

T10

*** FOR METRIC DEVICE : M16 x 1.5 E 6**

	A	B	C	D	E	F	G	
mm	4.3	220	19	210	38.5	16	27.5	T10 A
Inches	(0.17)	(8.66)	(0.75)	(8.26)	(1.51)	(0.63)	(1.08)	
mm	3.56	196.21	19.17	186.64	34.29	12.70	27.82	T10 B
Inches	(0.140)	(7.725)	(0.755)	(7.35)	(1.350)	(0.500)	(1.095)	

T11

Case style TO-209AE (TO-118)

T12

All dimensions in millimetres (inches)
 Dimensions are nominal
 Full engineering drawings are available on request

	A	B	C	D	E	F	G	H	
mm	4.3	22	10.5	245	47	21	27.5	45	T12 A
Inches	(0.17)	(0.866)	(0.41)	(9.64)	(1.85)	(0.82)	(1.08)	(1.77)	
mm	3.56	25.34	9.94	243.59	38.10	12.70	27.82	42.87	T12 B
Inches	(0.140)	(0.998)	(0.391)	(9.59)	(1.500)	(0.500)	(1.095)	(1.688)	

Case outlines

INTERNATIONAL RECTIFIER

T-25-01

T13

ANODE TO GATE
 CREEPAGE DISTANCE: 7.82(0.300) MIN.
 STRIKE DISTANCE: 7.12(0.280) MIN.

19.10 (0.752) DIA. MAX. TWO PLACES

D (TWO PLACES)

GATE TERM. FOR 1.47(0.058) DIA. NOM. PIN RECEPTACLE

2 HOLES 3.56(0.140) x 1.83 (0.072) MIN. DEEP

C TERM. 4.75(0.187)

20° ± 5°

	A	B	C	D	E	
mm	42	28.1	8.5	0.3	13.1/14.4	T13 A
inches	1.65	1.10	0.25	0.012	0.518/0.567	
mm	41.5	28.32	8.10	0.77	13.85/14.35	T13 B
inches	1.63	1.115	0.240	0.030	0.537/0.565	

Case style TO-200AB (A-PUK)

T14

ANODE TO GATE
 CREEPAGE DISTANCE: 11.18(0.440)
 STRIKE DISTANCE: 7.82(0.300)

42(1.653) DIA. MAX.

25° ± 5

2 HOLES 3.56(0.140) x 1.8 (0.070) MIN. DEEP

D (TWO PLACES) 25.3 (0.998) DIA. MAX. TWO PLACES

GATE TERM. FOR 1.47(0.058) DIA. NOM. PIN RECEPTACLE

	A	B	C	D	E	
mm	40.1	28.1	8.5	0.3	14.15/15.1	T14 A
inches	1.57	1.10	0.25	0.012	0.557/0.594	
mm	40.25	28.44	8.23	0.77	14.30/15.10	T14 B
inches	1.585	1.120	0.245	0.030	0.563/0.594	

Case style TO-200AB (E-PUK)

T15

0.782 (0.030) TWO PLACES

34.03(1.340) DIA. MAX. TWO PLACES

26.92 (1.060) MAX.

53.08 (2.090) DIA. MAX.

8.23 (0.245) MIN.

4.75 (0.187) NOM.

20° ± 5°

GATE TERM. FOR 1.47(0.058) DIA. NOM. PIN RECEPTACLE

2 HOLES 3.56(0.140) x 1.78(0.070) MIN. DEEP

35.78(1.409) MAX.

ANODE TO GATE
 CREEPAGE DISTANCE: 36.33(1.430) MIN.
 STRIKE DISTANCE: 17.43(0.68) MIN.

Case style TO-200AC

T16

67.05 (2.640) DIA. MAX.

47.82 (1.875) DIA. MAX. TWO PLACES

1.40 (0.055) TWO PLACES

27.68 (1.090) MAX.

8.23 (0.245) MIN.

4.75 (0.187) NOM.

20° ± 5°

GATE TERMINAL FOR 1.47 (0.058) DIA. NOM. PIN RECEPTACLE

3.56 (0.140) DIA. NOM. x 2.04 (0.080) DEEP MIN. BOTH ENDS

43.56 (1.715) MAX.

CREEPAGE DISTANCE: 28.88 (1.137) MIN.
 STRIKE DISTANCE: 17.99 (0.708) MIN.
 ANODE TO GATE

Case style A-24

T17

109.33 (3.950) DIA. MAX.

73.15 (2.880) DIA. MAX. TWO PLACES

0.87 (0.034) TWO PLACES

36.75 (1.447) MAX.

8.23 (0.245) MIN.

4.75 (0.187) NOM.

20° ± 5°

GATE TERMINAL FOR 1.47 (0.058) DIA. NOM. PIN RECEPTACLE

3.56 (0.140) DIA. NOM. x 1.78 (0.070) DEEP MIN. BOTH ENDS

61.97 (2.44) MAX.

CREEPAGE DISTANCE: 51.92 (2.04) MIN.
 STRIKE DISTANCE: 32.52 (1.280) MIN.
 ANODE TO GATE

Case style A-36

• All dimensions in millimetres (inches)
 • Dimensions are nominal
 • Full engineering drawings are available on request