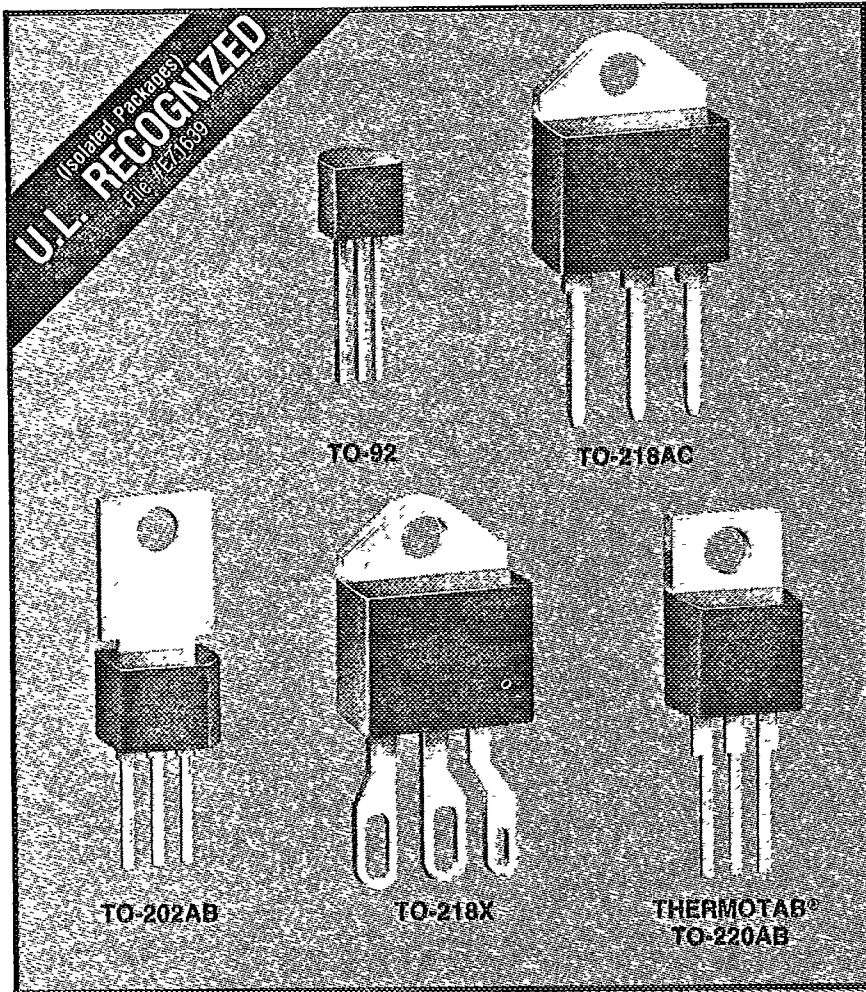
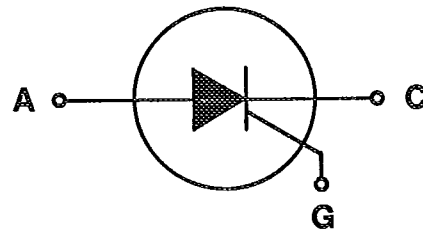


T-25-15



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SCR's 1-70 AMPS

NON-SENSITIVE GATE

General Information

The Teccor Electronics line of thyristor SCR semiconductors are half-wave unidirectional gate-controlled rectifiers which complement Teccor's line of sensitive gate SCR's. Teccor offers devices with current ratings from 1-70 Amps and voltage ratings from 30-800 Volts with gate sensitivities from 10-50 milliamps. If gate currents in the 1-500 microamp ranges are required, please consult Teccor's sensitive gate SCR technical data sheets.

Electrically Isolated Packages

Teccor's SCR's are available in a choice of 8 different device packages. Four of the 8 packages are offered in electrically isolated construction where the case or tab is internally isolated to allow the use of low cost assembly and convenient packaging techniques.

The Teccor line of SCR's features glass passivated device junctions to insure long term device reliability and parameter stability. Teccor's glass offers a rugged, reliable barrier against junction contamination.

Variations of devices covered in this data sheet are available for custom design applications. Please consult factory for further information.

Features

- Electrically Isolated Packages
- High Voltage Capability — 30-800 Volts
- High Surge Capability — up to 950 Amps
- Glass Passivated Chip

TECCOR ELECTRONICS INC

SCR's—Non Sensitive Gate

24E D ■ 8872819 0001328 2 ■ T-25-15

TYPE	Part Number				IT		VDRM & VRRM	IGT	IDRM & IRRM			VTM	VGT			
	Isolated		Non-Isolated													
					Maximum On-State Current (1) (2)	Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate-Trigger Current VD = 12 VDC RL = 60Ω (4)	Peak Off-State Forward & Reverse Current @ VDRM & VRRM	Peak On-State Voltage at Max Rated RMS Current TC = 25°C (3)	DC Gate-Trigger Voltage VD = 12 VDC RL = 60Ω (8)						
					Amps					mA				Volts		
					IT(RMS)	IT(AV)	Volts	mA		TC = 25°C	TC = 100°C	TC = 125°C	Volts	TC = 25°C	TC = 125°C	
FOR DIMENSIONAL OUTLINES & PACKAGE VARIATIONS SEE PAGE 81																
1 Amp	S031E				1.0	0.64	30	1	10	.01	0.2	0.5	1.6	1.5	0.2	
	S051E				1.0	0.64	50	1	10	.01	0.2	0.5	1.6	1.5	0.2	
	S101E				1.0	0.64	100	1	10	.01	0.2	0.5	1.6	1.5	0.2	
	S201E				1.0	0.64	200	1	10	.01	0.2	0.5	1.6	1.5	0.2	
	S401E				1.0	0.64	400	1	10	.01	0.2	0.5	1.6	1.5	0.2	
	S601E				1.0	0.64	600	1	10	.01	0.2	0.5	1.6	1.5	0.2	
4 Amps			S0304F1		4.0	2.54	30	1	10	.01	0.2	0.5	1.6	1.5	0.2	
			S0504F1		4.0	2.54	50	1	10	.01	0.2	0.5	1.6	1.5	0.2	
			S1004F1		4.0	2.54	100	1	10	.01	0.2	0.5	1.6	1.5	0.2	
			S2004F1		4.0	2.54	200	1	10	.01	0.2	0.5	1.6	1.5	0.2	
			S4004F1		4.0	2.54	400	1	10	.01	0.2	0.5	1.6	1.5	0.2	
			S6004F1		4.0	2.54	600	1	10	.01	0.2	0.5	1.6	1.5	0.2	
6 Amps		S0306L	S0306F1		6.0	3.8	30	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S0506L	S0506F1		6.0	3.8	50	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S1006L	S1006F1		6.0	3.8	100	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S2006L	S2006F1		6.0	3.8	200	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S4006L	S4006F1		6.0	3.8	400	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S6006L	S6006F1		6.0	3.8	600	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S8006L			6.0	3.8	800	1	15	.01	0.5	1.0	1.6	1.5	0.2	
					6.0	3.8	800	1	15	.01	0.5	1.0	1.6	1.5	0.2	
8 Amps		S0308L	S0308F1	S0308R	8.0	5.1	30	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S0508L	S0508F1	S0508R	8.0	5.1	50	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S1008L	S1008F1	S1008R	8.0	5.1	100	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S2008L	S2008F1	S2008R	8.0	5.1	200	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S4008L	S4008F1	S4008R	8.0	5.1	400	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S6008L	S6008F1	S6008R	8.0	5.1	600	1	15	.01	0.2	0.5	1.6	1.5	0.2	
		S8008L		S8008R	8.0	5.1	800	1	15	.01	0.5	1.0	1.6	1.5	0.2	
					8.0	5.1	800	1	15	.01	0.5	1.0	1.6	1.5	0.2	

FIGURE 1A — Maximum Allowable Ambient Temperature vs RMS On-State Current

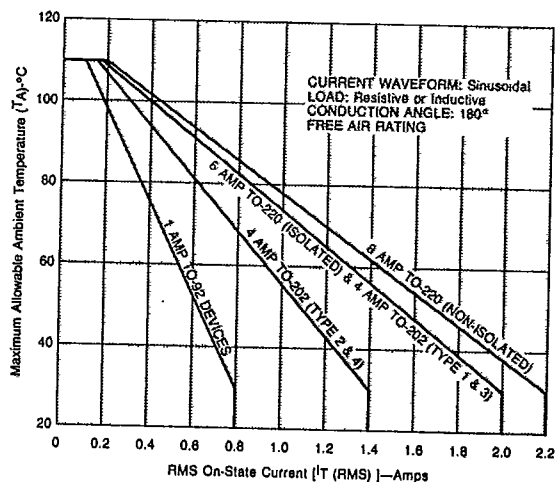
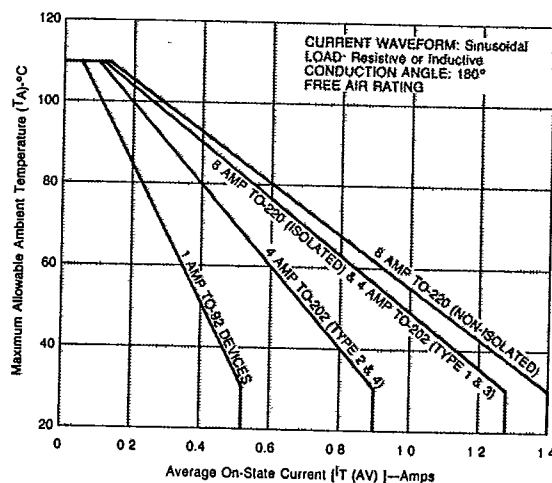


FIGURE 1B — Maximum Allowable Ambient Temperature vs Average On-State Current



I _H	I _{GM}	PGM	PG(AV)	I _{TSM}		dv/dt		I _{2t}	di/dt	t _{gt}	t _q
DC Holding Current Gate Open (5) (12)	Peak Gate Current (11)	Peak Gate Power Dissipation (11)	Average Gate Power Dissipation	Peak One Cycle Surge Forward Current (6) (10)		Critical Rate of Applied Forward Voltage		RMS Surge (Non-Repetitive) On-State Current For a Period of 8.3 msec for Fusing	Maximum Rate of Rise of On-State Current I _{GT} = 150mA With 0.1μs Rise Time	Gate Controlled Turn-On Time Gate Pulse = 100mA Min. Width = 5μs With Rise Time ≤ 0.1μs (7)	Circuit Commutated Turn-Off Time (9) (10)
mA	Amps	Watts	Watts	60Hz	50Hz	TC = 100°C	TC = 125°C	Amps ² sec	Amps/μs	μs	μs
MAX						MIN	MIN			MAX	MAX
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	30	20	3.7	50	2.0	35
20	1.5	15	0.3	30	25	30	20	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
20	1.5	15	0.3	30	25	35	25	3.7	50	2.0	35
20	1.5	15	0.3	30	25	35	25	3.7	50	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	160	110	41	100	2.0	35
30	2.0	20	0.5	100	83	150	100	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	160	110	41	100	2.0	35
30	2.0	20	0.5	100	83	150	100	41	100	2.0	35

GENERAL NOTES

- All measurements are made at 60 Hz with a resistive load at an ambient temperature of +25°C unless otherwise specified.
- Operating temperature range (T_J) is -65°C to +125°C for TO-92 devices and -40°C to +125°C for all other packages.
- Storage temperature range (T_S) is -65°C to +150°C for TO-92 devices, -40°C to +150°C for TO-202 and TO-220 devices, -40°C to +125°C for all others.
- Lead solder temperature is a maximum of 230°C for 10 seconds maximum; 1/16" from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings. See "package dimensions" section of catalog.

NOTES TO ELECTRICAL SPECIFICATIONS

- (1) See Figures 3 and 4 for current rating at specified operating case temperature.
- (2) See Figure 1 for free air current rating.
- (3) See Figure 7 for instantaneous on-state current vs on-state voltage (typical).
- (4) See Figure 6 for I_{GT} vs T_C.
- (5) See Figure 5 for I_H vs T_C.
- (6) For more than one full cycle rating, see Figure 10.
- (7) See Figure 9 for t_{gt} vs I_{GT}.
- (8) See Figure 8 for V_{GT} vs T_C.
- (9) Test conditions are as follows: I_T = 1 amp for ≤ 1.6 amp devices and 2 amp for ≥ 3 amp devices. Pulse duration = 50μsec, dv/dt = 20 V/μs, di/dt = -10 amps/μs for ≤ 1.6 amp devices, and -30 amps/μs for ≥ 3 amp devices. I_{GT} = 200 mA @ turn-on.
- (10) See Figure 3 (A,B,C,D,E) for maximum allowable case temperatures @ maximum rated current.
- (11) Pulse width ≤ 3μs.
- (12) Initial on-state current = 200 mA (DC) for 1 to 20 amp devices; 400 mA (DC) for 25 to 70 amp devices.

TECCOR ELECTRONICS INC 24E D ■ 8872819 0001330 0 ■ T-25-15

SCR's—Non Sensitive Gate

TYPE	Part Number			IT		VDRM & VRRM	IGT	IDRM & IRRM			VTM	VGT		
	Isolated	Non-Isolated												
				Maximum On-State Current (1)	Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate-Trigger Current VD = 12 VDC RL = 60Ω (4)	Peak Off-State Forward & Reverse Current @ VDRM & VRRM	Peak On-State Voltage at Max Rated RMS Current TC = 25°C (3)	DC Gate-Trigger Voltage VD = 12 VDC RL = 60Ω (8)					
	TO-220AB	TO-202AB	NON-ISOLATED TO-220AB	Amps	Volts	mA	mA	Volts	Volts					
			IT(RMS)	IT(AV)				TC = 25°C	TC = 100°C	TC = 125°C		TC = 25°C	TC = 125°C	
FOR DIMENSIONAL OUTLINES & PACKAGE VARIATIONS SEE PAGE 81				MAX	MAX	MIN	MIN	MAX	MAXIMUM			MAX	MAX	MIN
10 Amps	S0310L	S0310F1		10	6.4	30	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S0510L	S0510F1		10	6.4	50	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S1010L	S1010F1		10	6.4	100	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S2010L	S2010F1		10	6.4	200	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S4010L	S4010F1		10	6.4	400	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S6010L	S6010F1		10	6.4	600	1	15	.01	0.2	0.5	1.6	1.5	0.2
	S8010L			10	6.4	800	1	15	.02	0.5	1.0	1.6	1.5	0.2
			S2800F	10	6.4	50		15	.01		2.0	2.0*	1.5	
			S2800A	10	6.4	100		15	.01		2.0	2.0*	1.5	
			S2800B	10	6.4	200		15	.01		2.0	2.0*	1.5	
			S2800C	10	6.4	300		15	.01		2.0	2.0*	1.5	
			S2800D	10	6.4	400		15	.01		2.0	2.0*	1.5	
			S2800E	10	6.4	500		15	.01		2.0	2.0*	1.5	
			S2800M	10	6.4	600		15	.01		2.0	2.0*	1.5	
			S2800N	10	6.4	800		15	.02		2.0	2.0*	1.5	
12 Amps			S0312R	12	7.6	30	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S0512R	12	7.6	50	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S1012R	12	7.6	100	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S2012R	12	7.6	200	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S4012R	12	7.6	400	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S6012R	12	7.6	600	1	20	.01	0.5	1.0	1.6	1.5	0.2
			S8012R	12	7.6	800	1	20	.02	0.5	1.0	1.6	1.5	0.2
15 Amps	S0315L			15	9.5	30	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S0515L			15	9.5	50	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S1015L			15	9.5	100	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S2015L			15	9.5	200	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S4015L			15	9.5	400	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S6015L			15	9.5	600	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S8015L			15	9.5	800	1	30	.01	0.5	1.0	1.6	1.5	0.2
16 Amps			S0316R	16	10	30	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S0516R	16	10	50	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S1016R	16	10	100	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S2016R	16	10	200	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S4016R	16	10	400	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S6016R	16	10	600	1	30	.01	0.5	1.0	1.6	1.5	0.2
			S8016R	16	10	800	1	30	.02	1.0	2.0	1.6	1.5	0.2
20 Amps	S0320L			20	12.8	30	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S0520L			20	12.8	50	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S1020L			20	12.8	100	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S2020L			20	12.8	200	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S4020L			20	12.8	400	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S6020L			20	12.8	600	1	30	.01	0.5	1.0	1.6	1.5	0.2
	S8020L			20	12.8	800	1	30	.02	1.0	2.0	1.6	1.5	0.2

*VTM @ IT = 30Amps

*V_{TM} @ I_T = 30A_{pk}

GENERAL NOTES

- All measurements are made at 60 Hz with a resistive load at an ambient temperature of +25°C unless otherwise specified.
- Operating temperature range (T_J) is -65°C to +125°C for TO-92 devices and -40°C to +125°C for all other packages.
- Storage temperature range (T_S) is -65°C to +150°C for TO-92 devices, -40°C to +150°C for TO-202 and TO-220 devices, -40°C to +125°C for all others.
- Lead solder temperature is a maximum of 230°C for 10 seconds maximum; 1/16" from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings. See "package dimensions" section of catalog.

I _H	I _{GM}	P _{GM}	P _{G(AV)}	I _{TSM}		dv/dt		I _z t	di/dt	t _{gt}	t _q
DC Holding Current Gate Open (5) (12)	Peak Gate Current (11)	Peak Gate Power Dissipation (11)	Average Gate Power Dissipation	Peak One Cycle Surge Forward Current (6) (10) (13)		Critical Rate of Applied Forward Voltage		RMS Surge (Non-Repetitive) On-State Current For a Period of 8.3 msec for Fusing	Maximum Rate of Change of On-State Current I _{GT} = 150mA With 0.1μs Rise Time	Gate Controlled Turn-On Time Gate Pulse = 100mA Min. Width = 5μs With Rise Time ≤ 0.1μs (7)	Circuit Commutated Turn-Off Time (9) (10)
mA	Amps	Watts	Watts	Amps		Volts/μs		Amps ² sec	Amps/μs	μs	μs
60Hz	50Hz	TC = 100°C	TC = 125°C								
MAX						MIN	MIN			MAX	MAX
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	175	125	41	100	2.0	35
30	2.0	20	0.5	100	83	160	110	41	100	2.0	35
30	2.0	20	0.5	100	83	150	100	41	100	2.0	35
20	2.0	20	0.5	100	85		100	40	100	2.5	35
20	2.0	20	0.5	100	85		75	40	100	2.5	35
20	2.0	20	0.5	100	85		50	40	100	2.5	35
20	2.0	20	0.5	100	85		40	40	100	2.5	35
20	2.0	20	0.5	100	85		30	40	100	2.5	35
20	2.0	20	0.5	100	85		25	40	100	2.5	35
20	2.0	20	0.5	100	85		20	40	100	2.5	35
20	2.0	20	0.5	100	85		15	40	100	2.5	35
40	2.0	20	0.5	120	100	175	125	60	100	2.0	35
40	2.0	20	0.5	120	100	175	125	60	100	2.0	35
40	2.0	20	0.5	120	100	175	125	60	100	2.0	35
40	2.0	20	0.5	120	100	175	125	60	100	2.0	35
40	2.0	20	0.5	120	100	175	125	60	100	2.0	35
40	2.0	20	0.5	120	100	160	110	60	100	2.0	35
40	2.0	20	0.5	120	100	150	100	60	100	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	220	160	210	125	2.0	35
40	3.0	30	0.6	225	188	200	150	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	250	175	210	125	2.0	35
40	3.0	30	0.6	225	188	220	160	210	125	2.0	35
40	3.0	30	0.6	225	188	200	150	210	125	2.0	35
40	3.0	30	0.6	300	255	250	175	374	125	2.0	35
40	3.0	30	0.6	300	255	250	175	374	125	2.0	35
40	3.0	30	0.6	300	255	250	175	374	125	2.0	35
40	3.0	30	0.6	300	255	250	175	374	125	2.0	35
40	3.0	30	0.6	300	255	220	160	374	125	2.0	35
40	3.0	30	0.6	300	255	200	150	374	125	2.0	35

NOTES TO ELECTRICAL SPECIFICATIONS

- See Figures 3 and 4 for current rating at specified operating case temperature.
- See Figure 1 for free air current rating.
- See Figure 7 for instantaneous on-state current vs on-state voltage (typical).
- See Figure 6 for I_{GT} vs T_C.
- See Figure 5 for I_H vs T_C.
- For more than one full cycle rating, see Figure 10.
- See Figure 9 for t_{gt} vs I_{GT}.
- See Figure 8 for V_{GT} vs T_C.

- Test conditions are as follows: I_T = 1 amp for ≤ 1.6 amp devices and 2 amp for ≥ 3 amp devices. Pulse duration = 50μsec, dv/dt = 20 V/μs, di/dt = -10 amps/μs for ≤ 1.6 amp devices, and -30 amps/μs for ≥ 3 amp devices. I_{GT} = 200 mA @ turn-on.
- Pulse width ≤ 3μs.
- Initial on-state current = 200 mA (DC) for 1 to 20 amp devices; 400 mA (DC) for 25 to 70 amp devices.
- See Figures 2A & B for I_{TSM} capability for various duration of an exponentially decaying current waveform, t_w is defined as 5 time constants of an exponentially decaying current pulse.

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SCR's—Non Sensitive Gate

TYPE	Part Number						IT		VDRM & VRRM	IGT	IDRM & IRRM			VTM	VGT		
	Isolated			Non-Isolated													
							Maximum On-State Current (1) (13)	Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate-Trigger Current VD = 12 VDC RL = 60Ω (4)	Peak Off-State Forward & Reverse Current @ VDRM & VRRM	Peak On-State Voltage at Max Rated RMS Current TC = 25°C (3)	DC Gate-Trigger Voltage VD = 12 VDC RL = 60Ω (8)					
	K A G TO-220AB	K A G TO-218X	K A G TO-218AC	K A G TO-220AB	K A G TO-218X	K A G TO-218AC	Amps						mA	Volts	Volts	Volts	
	IT(RMS)	IT(AV)	TC = 25°C	TC = 100°C	TC = 125°C	TC = 25°C	TC = 125°C										
FOR DIMENSIONAL OUTLINES & PACKAGE VARIATIONS SEE PAGE 81							MAX	MAX	MIN	MIN	MAX	MAXIMUM			MAX	MAX	MIN
25 Amps	S0325L			S0325R			25	16	30	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S0525L			S0525R			25	16	50	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S1025L			S1025R			25	16	100	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S2025L			S2025R			25	16	200	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S4025L			S4025R			25	16	400	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S6025L			S6025R			25	16	600	1	30	.01	1.0	2.0	1.6	1.5	0.2
	S8025L			S8025R			25	16	800	1	30	.02	1.5	3.0	1.6	1.5	0.2
35 Amps		S0335J	S0335K		S0335W		35	22	30	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S0535J	S0535K		S0535W		35	22	50	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S1035J	S1035K		S1035W		35	22	100	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S2035J	S2035K		S2035W		35	22	200	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S4035J	S4035K		S4035W		35	22	400	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S6035J	S6035K		S6035W		35	22	600	5	40	.01	1.0	2.0	1.8	1.5	0.2
		S8035J	S8035K		S8035W		35	22	800	5	40	.02	1.5	3.0	1.8	1.5	0.2
55 Amps					S0555W	S0555M	55	35	50	5	40	.01	1.0	2.0	1.8	1.5	0.2
					S1055W	S1055M	55	35	100	5	40	.01	1.0	2.0	1.8	1.5	0.2
					S2055W	S2055M	55	35	200	5	40	.01	1.0	2.0	1.8	1.5	0.2
					S4055W	S4055M	55	35	400	5	40	.01	1.0	2.0	1.8	1.5	0.2
					S6055W	S6055M	55	35	600	5	40	.01	1.0	2.0	1.8	1.5	0.2
					S8055W	S8055M	55	35	800	5	40	.02	1.5	3.0	1.8	1.5	0.2
65 Amps		S0665J	S0665K				65	41	50	5	50	.02	1.5	3.0	1.8	2.0	0.2
		S1065J	S1065K				65	41	100	5	50	.02	1.5	3.0	1.8	2.0	0.2
		S2065J	S2065K				65	41	200	5	50	.02	1.5	3.0	1.8	2.0	0.2
		S4065J	S4065K				65	41	400	5	50	.02	1.5	3.0	1.8	2.0	0.2
		S6065J	S6065K				65	41	600	5	50	.02	1.5	3.0	1.8	2.0	0.2
		S8065J	S8065K				65	41	800	5	50	.02	1.5	3.0	1.8	2.0	0.2
70 Amps					S0570W		70	45	50	5	50	.02	1.5	3.0	1.8	2.0	0.2
					S1070W		70	45	100	5	50	.02	1.5	3.0	1.8	2.0	0.2
					S2070W		70	45	200	5	50	.02	1.5	3.0	1.8	2.0	0.2
					S4070W		70	45	400	5	50	.02	1.5	3.0	1.8	2.0	0.2
					S6070W		70	45	600	5	50	.02	1.5	3.0	1.8	2.0	0.2
					S8070W		70	45	800	5	50	.02	2.0	5.0	1.8	2.0	0.2

GENERAL NOTES

GENERAL NOTES

- All measurements are made at 60 Hz with a resistive load at an ambient temperature of + 25°C unless otherwise specified.
- Operating temperature range (T_J) is - 65°C to + 125°C for TO-92 devices and - 40°C to + 125°C for all other packages.
- Storage temperature range (T_S) is - 65°C to + 150°C for TO-92 devices, - 40°C to + 150°C for TO-202 and TO-220 devices - 40°C to + 125°C for all others.
- Lead solder temperature is a maximum of 230°C for 10 seconds maximum; 1/16" from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings. See "package dimensions" section of catalog.

I _H	I _{GM}	P _{GM}	P _{G(AV)}	I _{TSM}		dv/dt		I _{RT}	di/dt	t _{gt}	t _q
DC Holding Current Gate Open (5) (12)	Peak Gate Current (11)	Peak Gate Power Dissipation (11)	Average Gate Power Dissipation	Peak One Cycle Surge Forward Current (8) (10) (14)		Critical Rate of Applied Forward Voltage		RMS Surge (Non-Repulsive) On-State Current For a Period of 8.3 msec for Fusing	Maximum Rate of Change of On-State Current I _{GT} = 150mA With 0.1μs Rise Time	Gate Controlled Turn-On Time Gate Pulse = 150mA Min. Width = 5μs Time ≤ 0.1μs (7)	Circuit Commutated Turn-Off Time (9) (10)
				Amps		Volts/μs					
				60Hz	50Hz	TC = 100°C	TC = 125°C				
mA	Amps	Watts	Watts					Amps ² sec	Amps/μs	μs	μs
MAX						MIN	MIN			MAX	MAX
40	3.5	35	0.8	350	300	250	175	510	150	2.0	35
40	3.5	35	0.8	350	300	250	175	510	150	2.0	35
40	3.5	35	0.8	350	300	250	175	510	150	2.0	35
40	3.5	35	0.8	350	300	250	175	510	150	2.0	35
40	3.5	35	0.8	350	300	250	175	510	150	2.0	35
40	3.5	35	0.8	350	300	220	160	510	150	2.0	35
40	3.5	35	0.8	350	300	200	150	510	150	2.0	35
50	3.5	35	0.8	500	425	250	175	1035	150	2.0	35
50	3.5	35	0.8	500	425	250	175	1035	150	2.0	35
50	3.5	35	0.8	500	425	250	175	1035	150	2.0	35
50	3.5	35	0.8	500	425	250	175	1035	150	2.0	35
50	3.5	35	0.8	500	425	220	160	1035	150	2.0	35
50	3.5	35	0.8	500	425	200	150	1035	150	2.0	35
60	4.0	40	0.8	650	550	425	300	1750	175	2.5	35
60	4.0	40	0.8	650	550	425	300	1750	175	2.5	35
60	4.0	40	0.8	650	550	425	300	1750	175	2.5	35
60	4.0	40	0.8	650	550	425	300	1750	175	2.5	35
60	4.0	40	0.8	650	550	395	275	1750	175	2.5	35
60	4.0	40	0.8	650	550	375	250	1750	175	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	395	275	3745	200	2.5	35
80	5.0	50	1.0	950	800	375	250	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	425	300	3745	200	2.5	35
80	5.0	50	1.0	950	800	395	275	3745	200	2.5	35
80	5.0	50	1.0	950	800	375	250	3745	200	2.5	35

NOTES TO ELECTRICAL SPECIFICATIONS

- See Figures 3 and 4 for current rating at specified operating case temperature.
- See Figure 1 for free air current rating.
- See Figure 7 for instantaneous on-state current vs on-state voltage (typical).
- See Figure 6 for I_{GT} vs TC.
- See Figure 5 for I_H vs TC.
- For more than one full cycle rating, see Figure 10.
- See Figure 9 for t_{gt} vs I_{GT}.
- See Figure 8 for V_{GT} vs TC.

- Test conditions are as follows: I_T = 1 amp for ≤ 1.6 amp devices and 2 amp for ≥ 3 amp devices. Pulse duration = 50μsec, dv/dt = 20 V/μs, di/dt = -10 amps/μs for ≤ 1.6 amp devices, and -30 amps/μs for ≥ 3 amp devices. I_{GT} = 200 mA @ turn-on.
- See Figure 3 (A,B,C,D,E) for maximum allowable case temperatures @ maximum rated current.
- Pulse width ≤ 3μs.
- Initial on-state current = 200 mA (DC) for 1 to 20 amp devices; 400 mA (DC) for 25 to 70 amp devices.
- The "K" or "M" package rating is intended for high surge condition use only and not recommended for ≥ 50 amps (RMS) continuous current use since narrow pin lead temperature can exceed PCB solder melting temperature. Recommend for ≥ 50 amps (RMS) continuous current requirements, Teccor's "J" or "W" package.
- See Figures 2A & B for I_{TM} capability for various duration of an exponentially decaying current waveform, t_w is defined as 5 time constants of an exponentially decaying current pulse.

THERMAL RESISTANCE (STEADY STATE) R _{θJC} /R _{θJA} °C/W (TYP.)									
TYPE	 TO-92	 THERMOTAB TO-220AB	 TYPE 1 TO-202	 TYPE 2 TO-202	 NON-ISOLATED TO-220AB	 ISOLATED TO-218X	 NON-ISOLATED TO-218X	 ISOLATED TO-218AC	 NON-ISOLATED TO-218AC
1.0 Amp	50/145								
4.0 Amp									
6.0 Amp		4.0/50	5.6/45	9.5/70					
8.0 Amp		3.4	3.9						
10.0 Amp		3.0	3.4		2.1/40				
12.0 Amp					1.9				
15.0 Amp		2.5			1.7				
16.0 Amp									
20.0 Amp		2.4			1.5				
25.0 Amp		2.35							
35.0 Amp					1.1				
55.0 Amp						.70	.50	.70	
65.0 Amp						.85	.53		.53
70.0 Amp							.60	.86	

ELECTRICAL ISOLATION

Most Teccor isolated SCR packages will withstand a minimum high potential test of 2500 VAC RMS from leads to case over the device's operating temperature range. See table for standard and optional isolation ratings.

ELECTRICAL ISOLATION FROM LEADS TO CASE U.L. RECOGNIZED FILE #E71639				
VAC (RMS) \ TYPE	TO-92	ISOLATED TO-220AB	ISOLATED TO-218X	ISOLATED TO-218AC
1600	Standard	—	—	—
2500	No	Standard	Standard	Standard
4000	No	Optional*	No	No

*For 4000V Isolation Use "V" Suffix

FIGURE 2A — PEAK CAPACITOR DISCHARGE CURRENT

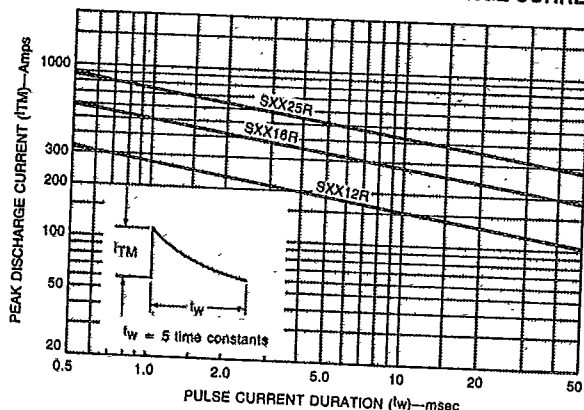
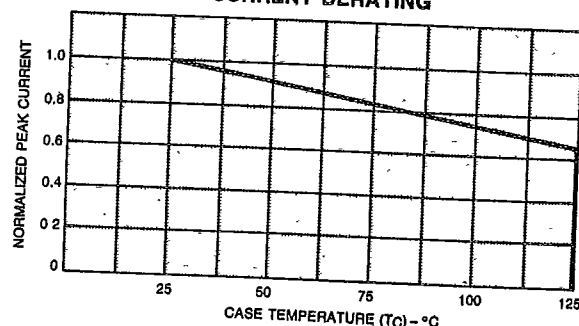


FIGURE 2B — PEAK CAPACITOR DISCHARGE CURRENT DERATING



SCR's—Non Sensitive Gate

FIGURE 3A — Maximum Allowable Case Temperature vs RMS On-State Current

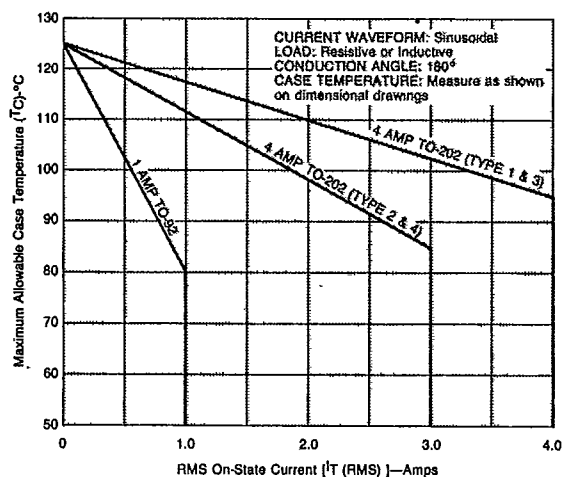


FIGURE 3B — Maximum Allowable Case Temperature vs RMS On-State Current

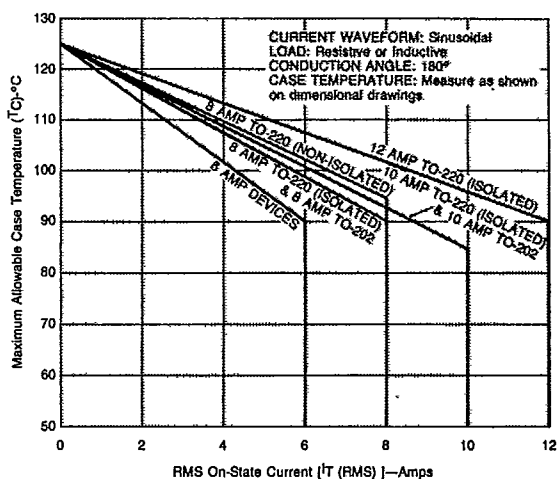


FIGURE 3C — Maximum Allowable Case Temperature vs RMS On-State Current

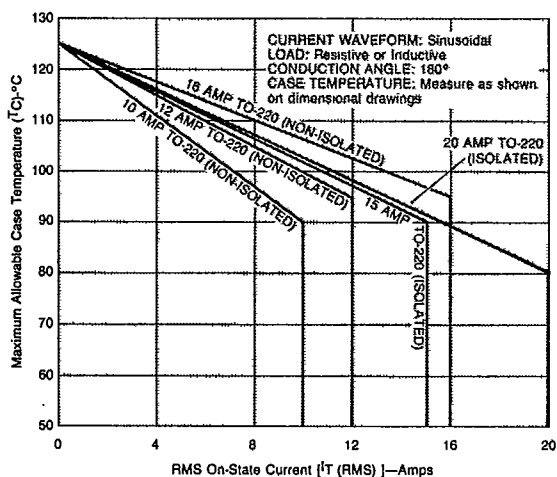


FIGURE 3D — Maximum Allowable Case Temperature vs RMS On-State Current

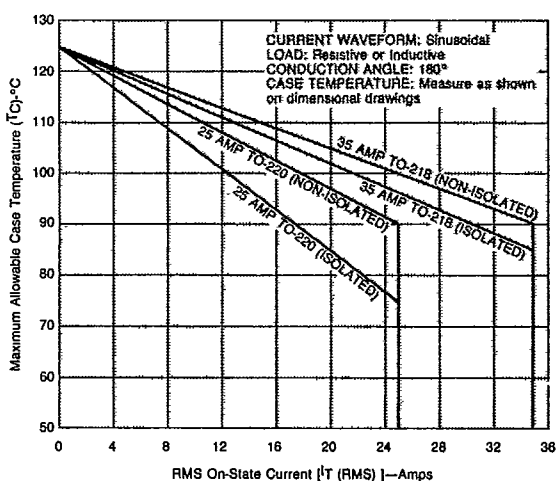


FIGURE 3E — Maximum Allowable Case Temperature vs RMS On-State Current

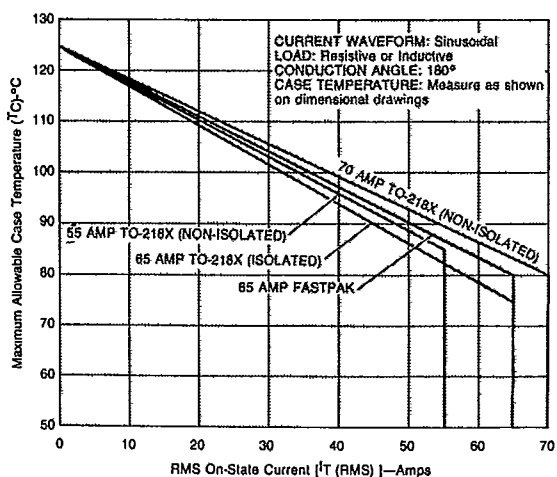
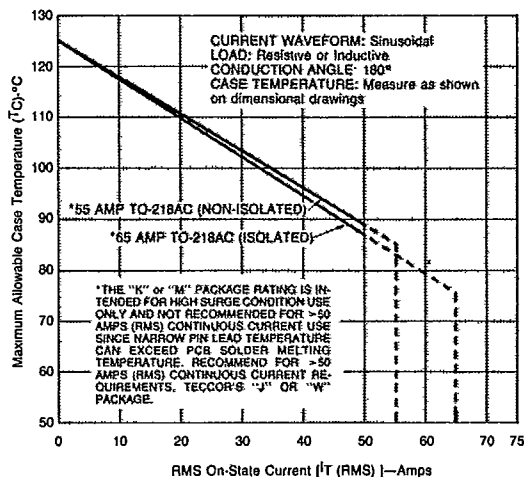


FIGURE 3F — Maximum Allowable Case Temperature vs RMS On-State Current



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FIGURE 4A — Maximum Allowable Case Temperature vs Average On-State Current

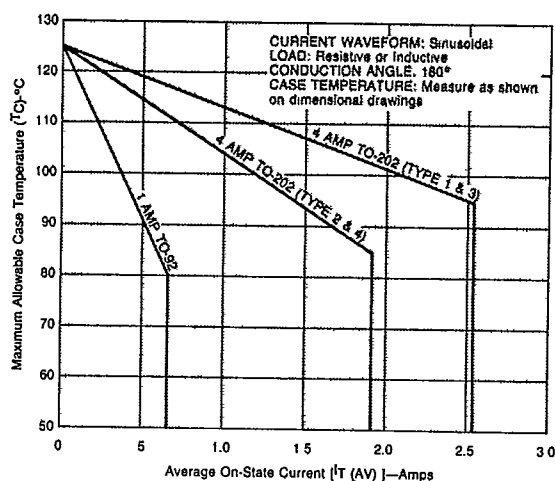


FIGURE 4B — Maximum Allowable Case Temperature vs Average On-State Current

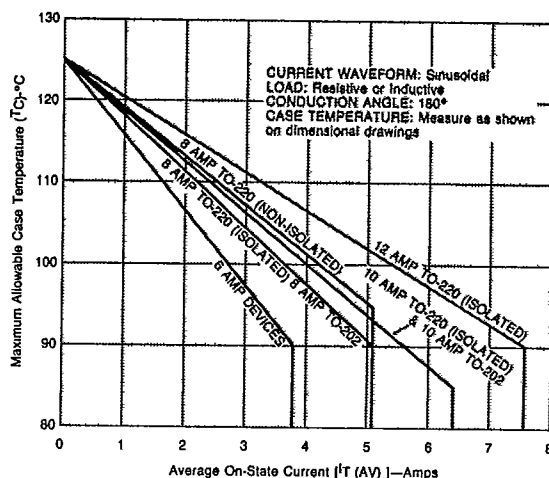


FIGURE 4C — Maximum Allowable Case Temperature vs Average On-State Current

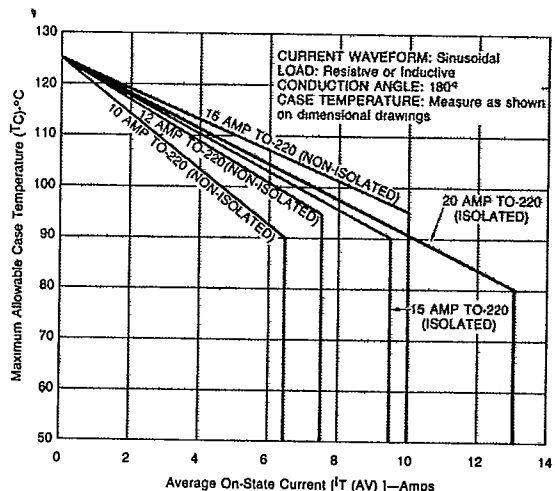


FIGURE 4D — Maximum Allowable Case Temperature vs Average On-State Current

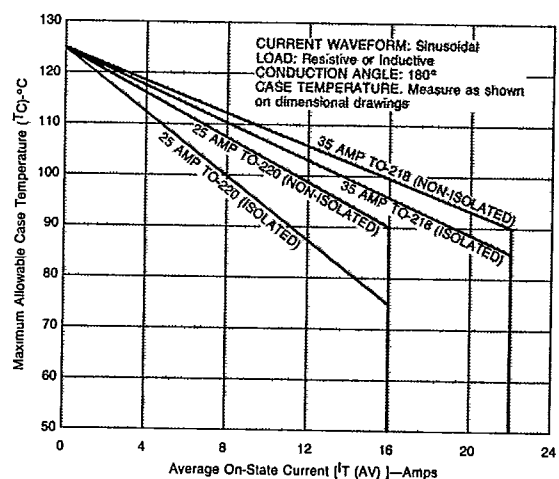


FIGURE 4E — Maximum Allowable Case Temperature vs Average On-State Current

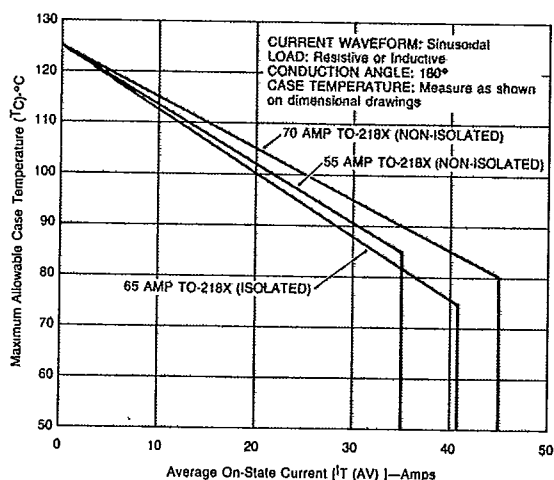
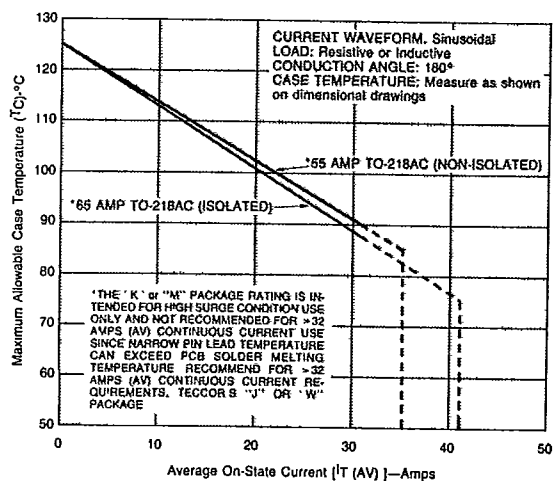


FIGURE 4F — Maximum Allowable Case Temperature vs Average On-State Current



SCR's—Non Sensitive Gate

FIGURE 5 — Normalized DC Holding Current vs Case Temperature

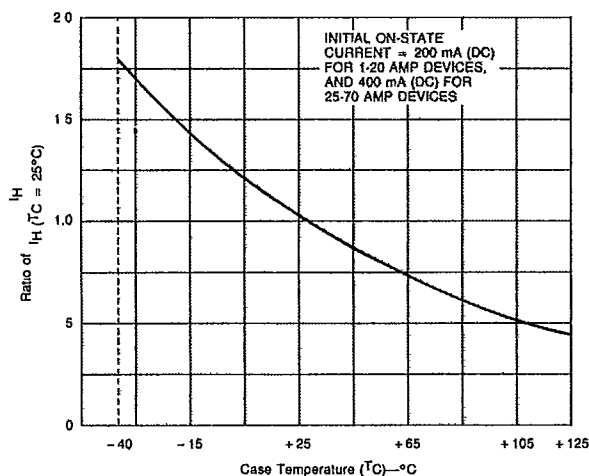


FIGURE 6 — Normalized DC Gate-Trigger Current vs Case Temperature

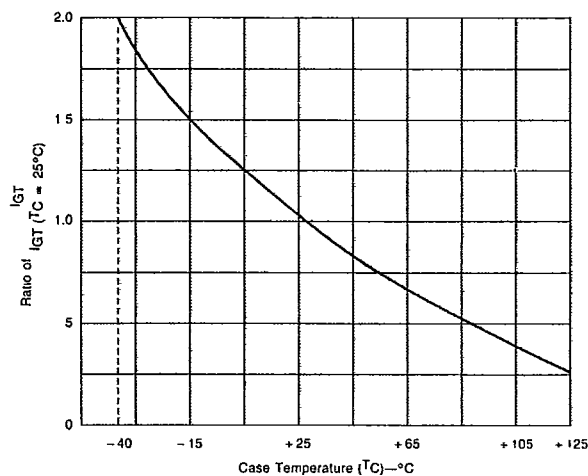


FIGURE 7A — Instantaneous On-State Current vs On-State Voltage (Typical)

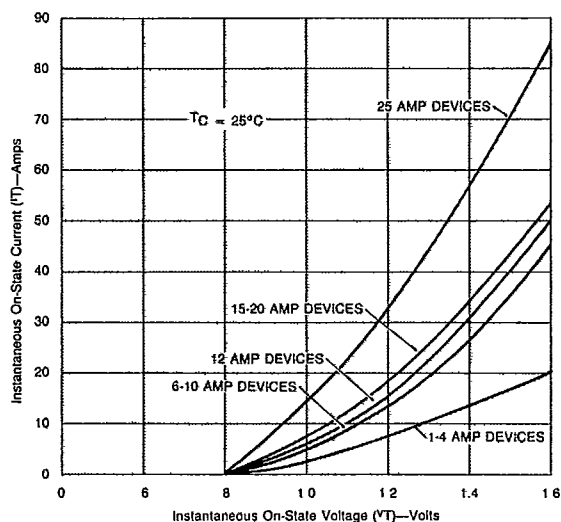


FIGURE 7B — Instantaneous On-State Current vs On-State Voltage (Typical)

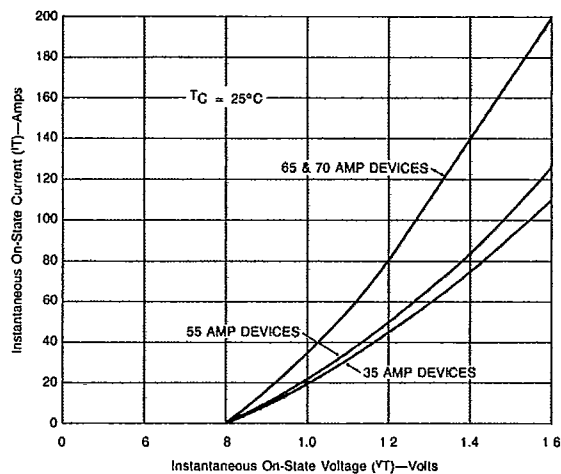


FIGURE 8 — Normalized DC Gate-Trigger Voltage vs Case Temperature

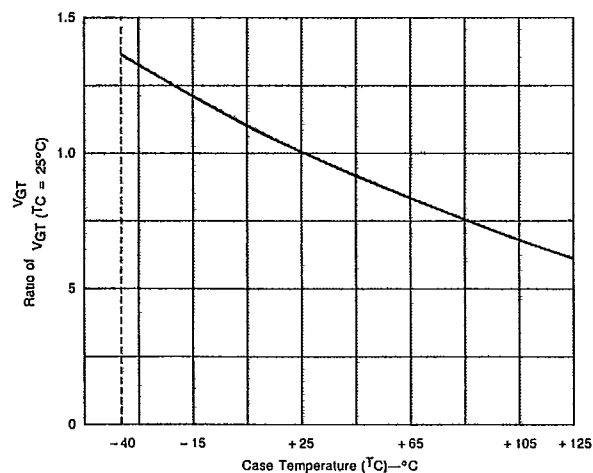
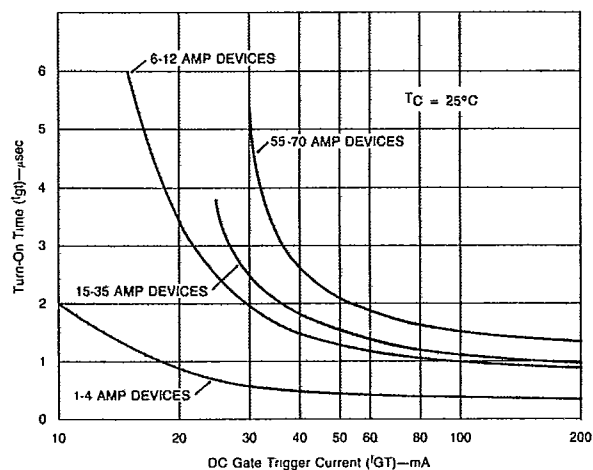


FIGURE 9 — Typical Turn-On Time vs Gate Trigger Current



SCR's—Non Sensitive Gate

FIGURE 10—Peak Surge Current
vs Surge Current Duration

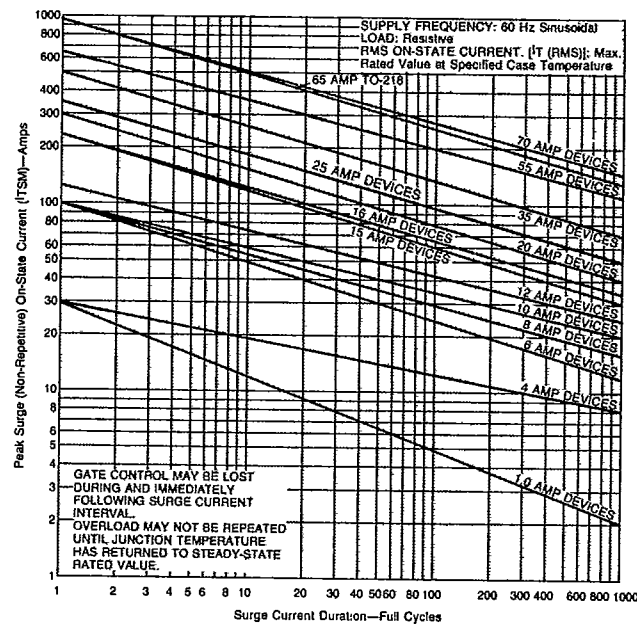


FIGURE 11A—Power Dissipation (Typical)
vs RMS On-State Current

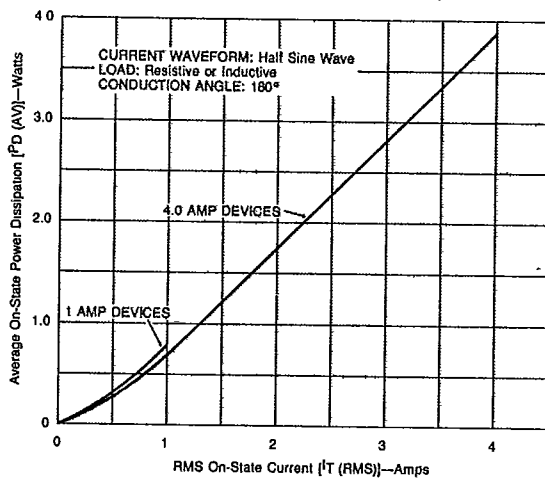


FIGURE 11B—Power Dissipation (Typical)
vs RMS On-State Current

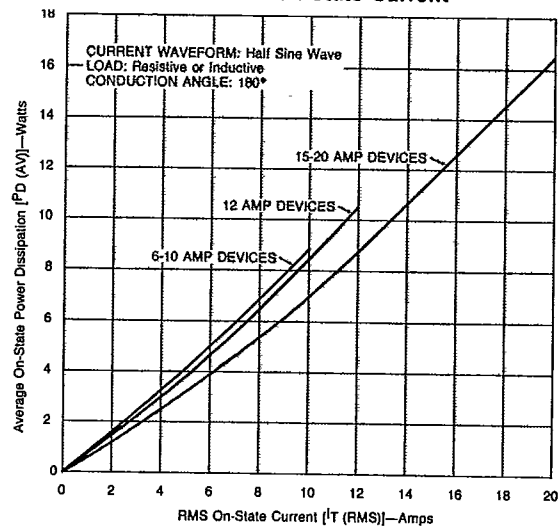


FIGURE 11C—Power Dissipation (Typical)
vs RMS On-State Current

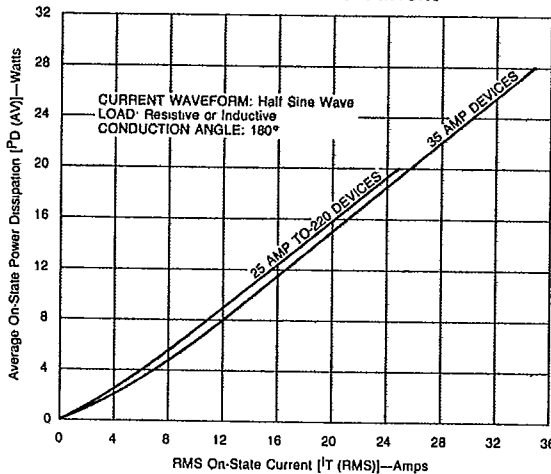


FIGURE 11D—Power Dissipation (Typical)
vs RMS On-State Current

