

Selected Packages
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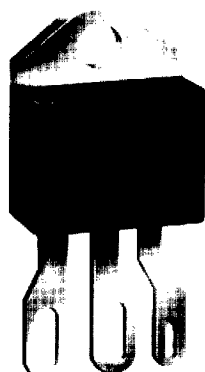
TO-92



TO-218AC



TO-202AB



TO-218X

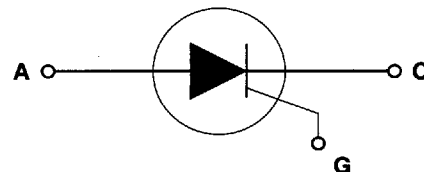


THERMOTAB
TO-220AB



A SIEBE COMPANY

1801 HURD DRIVE
 IRVING, TEXAS 75038-4385
 PHONE 214/580-1515
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SCRs (1-70 Amps)

GENERAL INFORMATION

The Teccor Electronics line of thyristor SCR semi-conductors are half-wave, unidirectional, gate-controlled rectifiers which complement Teccor's line of sensitive SCR's. Teccor offers devices with ratings of 1-70 amps and 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 SCR technical data sheets.

ELECTRICALLY ISOLATED PACKAGES

Teccor's SCR's are available in a choice of nine different device packages. Four (of the eight) 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 ensure 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 the factory for more information.

Features

- Electrically isolated packages
- High Voltage Capability — 30-800 volts
- High Surge Capability — up to 950 amps
- Glass Passivated Chip

Electrical Specifications

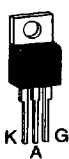
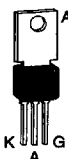
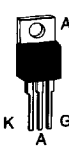
TYPE	Part Number				I_T		$V_{DRM} \text{ \& } V_{RRM}$	I_{GT}		$I_{DRM} \text{ \& } I_{RRM}$			V_{TM}	V_{GT}	
	Isolated		Non-Isolated												
					Maximum On-State Current (1) (2)	Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate Trigger Current $V_D = 12VDC$ $R_L = 60\Omega$ (4)	Peak Off-State Forward & Reverse Current at $V_{DRM} \text{ \& } V_{RRM}$ (13)	Peak On-State Voltage at Max Rated RMS Current $T_C = 25^\circ C$ (3)	DC Gate-Trigger Voltage $V_D = 12VDC$ $R_L = 60\Omega$ (8)					
	TO - 92	TO - 220AB	TO - 202AB	TO - 220AB							Amps	Volts	mAmps	Volts	
						$I_T(RMS)$	$I_T(AV)$			$T_C = 25^\circ C$	$T_C = 100^\circ C$	$T_C = 125^\circ C$		$T_C = 25^\circ C$	$T_C = 125^\circ C$
	For Package Dimensions & Variations, See Page 95				MAX	MAX	MIN	MIN	MAX	MAX			MAX	MAX	MIN
1.0 Amp	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
4.0 Amps			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
6.0 Amps		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
8.0 Amps		S8006L			6.0	3.8	800	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	0.2	0.5	1.6	1.5	0.2

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

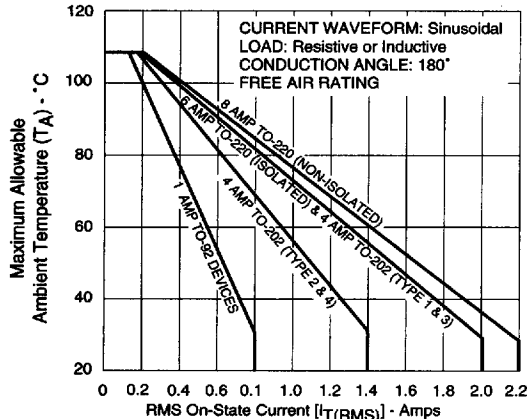
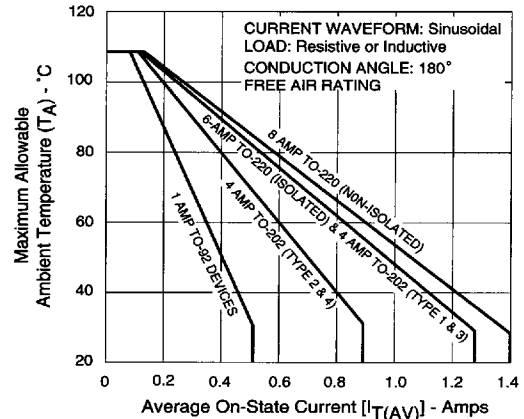


Figure 1B—Maximum Allowable Ambient Temperature vs Average On-State Current



I_H	I_{GM}	P_{GM}	$P_{G(AV)}$	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 ms 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 Minimum Width=15μs with Rise Time ≤ 0.1μs (7)	Circuit Commutated Turn-Off Time (9) (10)
mAmps	Amps	Watts	Watts	Amps		Volts/μs		Amps ² Sec	Amps/μSec	μSec	μSec
				60Hz	50Hz	$T_C = 100^\circ C$	$T_C = 100^\circ C$				
MAX						MIN	MIN			MAX	MAX
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	20	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	20	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	40	30	3.7	50	2.0	35
25	1.5	15	0.3	30	25	35	25	3.7	50	2.0	35
25	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	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

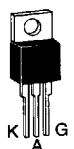
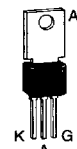
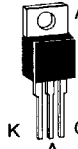
GENERAL NOTES

- All measurements are made at 60Hz 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" (1.59mm) from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings. See "Package Dimensions" section of catalog on Page 95.

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 (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: $I_T = 1A$ for ≤1.6A devices and 2A for ≥ 3A devices. Pulse duration = 50μs, $dv/dt = 20V/\mu s$, $di/dt = -10A/\mu s$ for ≤ 1.6A devices, and -30A/μs for ≥ 3A. $I_{GT} = 200\mu A$ at turn-on.
- 10 See Figure 3(A,B,C,D,E) for maximum allowable case temperatures at maximum rated current.
- 11 Pulse width ≤ 10μs.
- 12 Initial on-state current = 200μA(DC) for 1A to 20A devices; 400mA(DC) for 25 to 70A devices.
- 13 $T_C = T_J$ for test conditions in off-state.

Electrical Specifications

TYPE	Part Number			I_T		V_{DRM} & V_{RRM}	I_{GT}		I_{DRM} & I_{RRM}			V_{TM}	V_{GT}	
	Isolated	Non-Isolated												
				Maximum On-State Current (1)		Repetitive Peak Off-State Forward & Reverse Voltage		DC Gate Trigger Current $V_D = 12VDC$ $R_L = 60\Omega$ (4)		Peak Off-State Forward & Reverse Current at V_{DRM} & V_{RRM} (14)		Peak On-State Voltage at Max Rated RMS Current $T_C = 25^\circ C$ (3)		DC Gate Trigger Voltage $V_D = 12VDC$ $R_L = 60\Omega$ (8)
	K A G	K A G	K A G	Amps						mAmps				
TO-220AB	TO-202AB	TO-220AB	$I_{T(RMS)}$	$I_{T(AV)}$	Volts		mAmps		$T_C = 25^\circ C$	$T_C = 100^\circ C$	$T_C = 125^\circ C$	Volts	$T_C = 25^\circ C$	$T_C = 125^\circ C$
For Package Dimensions & Variations, see Page 95.				MAX	MAX	MIN	MIN	MAX	MAX			MAX	MAX	MIN
10.0 Amps	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
		S0510R		10	6.4	50	1	15	.01	0.2	1.0	1.6	1.5	0.2
		S1010R		10	6.4	100	1	15	.01	0.2	1.0	1.6	1.5	0.2
		S2010R		10	6.4	200	1	15	.01	0.2	1.0	1.6	1.5	0.2
		S4010R		10	6.4	400	1	15	.01	0.2	1.0	1.6	1.5	0.2
12.0 Amps		S6010R		10	6.4	600	1	15	.01	0.2	1.0	1.6	1.5	0.2
		S8010R		10	6.4	800	1	15	.02	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
15.0 Amps		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
	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
16.0 Amps		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	.02	1.0	2.0	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

GENERAL NOTES

- All measurements are made at 60Hz 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" (1.59mm) from case.
- The case temperature (T_C) is measured as shown on dimensional outline drawings. See "Package Dimensions" section of catalog on Page 95.

I_H	IGM	P _{GM}	P _{G(AV)}	I _{TSM}		dv/dt		I ² 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 ms 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 = 15μs with Rise Time ≤ 0.1μs (7)	Circuit Commutated Turn-Off Time (9) (10)
mAmps	Amps	Watts	Watts	60Hz	50Hz	T _C = 100°C	T _C = 125°C	Amps ² Sec	Amps/μSec	μSec	μSec
MAX						MIN	MIN			TYP	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	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	160	110	41	100	2.0	35
30	2.0	20	0.5	100	83	150	100	41	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	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

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 = 1A for ≤ 1.6A devices and 2A for ≥ 3A devices. Pulse duration = 50μs, dv/dt = 20V/μs, di/dt = -10A/μs for ≤ 1.6A devices, and -30A/μs for ≥ 30A devices. I_{GT} = 200mA at turn-on.

- See Figure 3(A,B,C,D,E) for maximum allowable case temperatures maximum rated current.
- Pulse width ≤ 10μs.
- Initial on-state current = 200mA(DC) for 1 to 20A devices; 400mA(DC) for 25A to 70A devices.
- The "R", "K" or "M" package rating is intended for high surge condition use only and not recommended for ≥50A(RMS) continuous current use since narrow pin lead temperature can exceed PCB solder melting temperature. Recommend for ≥50A(RMS) continuous current requirements, Teccor's "J" or "W" package.
- See Figures 2A and 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.
- T_C = T_J for test conditions in off-state.

Electrical Specifications

TYPE	Part Number						I_T		V_{DRM} & V_{RRM}	I_{GT}		I_{DRM} & I_{RRM}			V_{TM}	V_{GT}	
	Isolated			Non-Isolated			Maximum On-State Current (1) (13)		Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate Trigger Current $V_D = 12VDC$ $R_L = 30\Omega$ (4)	Peak Off-State Forward & Reverse Current at V_{DRM} & V_{RRM} (15)			Peak On-State Voltage at Max Rated RMS Current $T_C = 25^\circ C$ (3)	DC Gate Trigger Voltage $V_D = 12VDC$ $R_L = 30\Omega$ (8)		
							Amps				mAmps				Volts		
							$I_T(RMS)$	$I_T(AV)$			mAmps				Volts		
	TO-220AB	TO-218X	TO-218AC	TO-220AB	TO-218X	TO-218AC	$I_T(RMS)$	$I_T(AV)$	Volts	mAmps	$T_C = 25^\circ C$	$T_C = 100^\circ C$	$T_C = 125^\circ C$	Volts	$T_C = 25^\circ C$	$T_C = 125^\circ C$	
For Package Dimensions & Variations, See Page 96							MAX		MIN	MIN	MAX	MAX		MAX	MAX	MIN	
20 Amps	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
25 Amps	S0525L			S0525R			25	16	50	1	35	.01	1.0	2.0	1.6	1.5	0.2
	S1025L			S1025R			25	16	100	1	35	.01	1.0	2.0	1.6	1.5	0.2
	S2025L			S2025R			25	16	200	1	35	.01	1.0	2.0	1.6	1.5	0.2
	S4025L			S4025R			25	16	400	1	35	.01	1.0	2.0	1.6	1.5	0.2
	S6025L			S6025R			25	16	600	1	35	.01	1.0	2.0	1.6	1.5	0.2
	S8025L			S8025R			25	16	800	1	35	.02	1.5	3.0	1.6	1.5	0.2
35 Amps		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
40 Amps				S0540R			40	25	50	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S1040R			40	25	100	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S2040R			40	25	200	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S4040R			40	25	400	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S6040R			40	25	600	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S8040R			40	25	800	5	40	.02	1.5	3.0	1.8	1.5	0.2
55 Amps				S0555R	S0555W	S0555M	55	35	50	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S1055R	S1055W	S1055M	55	35	100	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S2055R	S2055W	S2055M	55	35	200	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S4055R	S4055W	S4055M	55	35	400	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S6055R	S6055W	S6055M	55	35	600	5	40	.01	1.0	2.0	1.8	1.5	0.2
				S8055R	S8055W	S8055M	55	35	800	5	40	.02	1.5	3.0	1.8	1.5	0.2
65 Amps		S0565J	S0565K				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	2.0	5.0	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

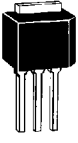
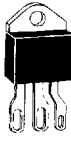
See General Notes and Special Numbered Notes for electrical specifications on Page 54 and 55.

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 (6) (10) (14)		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 0.1 μS Rise Time	Gate Controlled Turn-On Time Gate Pulse = 150mA Min. Width = 15 μS with Rise Time $\leq 0.1\mu S$ (7)	Circuit Commutated Turn-Off Time (9) (10)
				Amps		Volts/ μSec					
				60 Hz	50 Hz	$T_C = 100^\circ C$	$T_C = 125^\circ C$				
mAmps	Amps	Watts	Watts					Amps ² Sec	Amps/ μSec	μSec	μSec
MAX						MIN	MIN			TYP	MAX
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
50	3.5	35	0.8	350	300	250	175	510	150	2.0	35
50	3.5	35	0.8	350	300	250	175	510	150	2.0	35
50	3.5	35	0.8	350	300	250	175	510	150	2.0	35
50	3.5	35	0.8	350	300	250	175	510	150	2.0	35
50	3.5	35	0.8	350	300	220	160	510	150	2.0	35
50	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	3.5	35	0.8	520	430	425	300	1122	175	2.5	35
60	3.5	35	0.8	520	430	425	300	1122	175	2.5	35
60	3.5	35	0.8	520	430	425	300	1122	175	2.5	35
60	3.5	35	0.8	520	430	425	300	1122	175	2.5	35
60	3.5	35	0.8	520	430	395	275	1122	175	2.5	35
60	3.5	35	0.8	520	430	375	250	1122	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	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	395	275	3745	200	2.5	35
80	5.0	50	1.0	950	800	375	250	3745	200	2.5	35

See General Notes and Special Numbered Notes for electrical specifications on page 54 and 55.

Electrical Specifications

THERMAL RESISTANCE (STEADY STATE) $R_{\theta JC}$ [$R_{\theta JA}$] °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 amps			5.6 [45]	9.5 [70]					
6.0 amps		4.0 [50]	4.3						
8.0 amps		3.4	3.9		2.1 [40]				
10.0 amps		3.0	3.4		1.9				
12.0 amps					1.7				
15.0 amps		2.5							
16.0 amps					1.5				
20.0 amps		2.4							
25.0 amps		2.35			1.1				
35.0 amps						.70	.50	.70	
40.0 amps					0.66				
55.0 amps					0.58		.53		.53
65.0 amps						.86		.86	
70.0 amps							.60		

ELECTRICAL ISOLATION

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

Electrical Isolation from Leads to Mounting Tab

TYPE VAC(RMS)	TO-92	Isolated ** TO-220AB	Isolated ** TO-218X	Isolated ** TO-218AC
1600	Standard	—	—	—
2500	N/A	Standard	Standard	Standard
4000	N/A	Optional *	N/A	N/A

* For 4000V Isolation, add "V" suffix to part number.

** UL Recognized File #E71639.

Figure 2A — Peak Capacitor Discharge Current

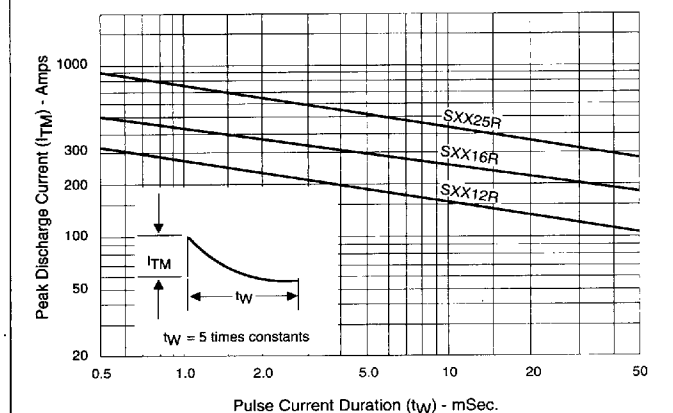


Figure 2B — Peak Capacitor Discharge Current Derating

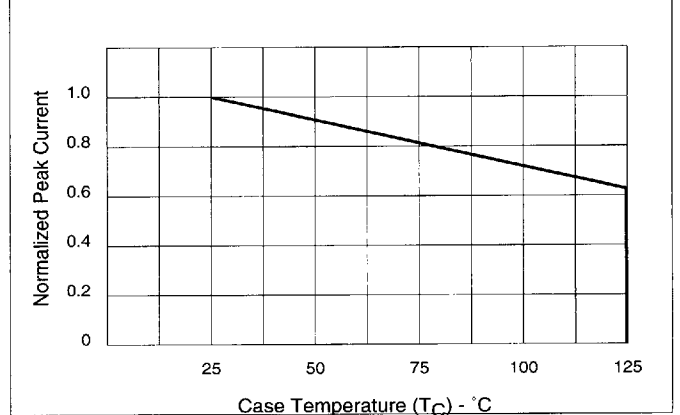


Figure 3A—Maximum Allowable Case Temperature vs RMS On-State Current

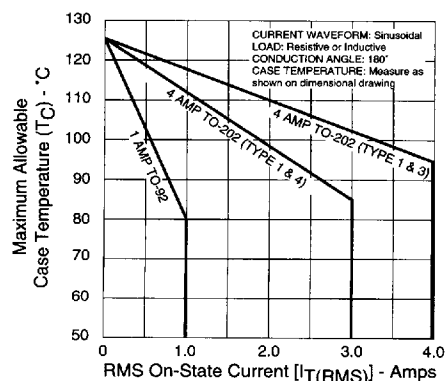


Figure 3B—Maximum Allowable Case Temperature vs RMS On-State Current

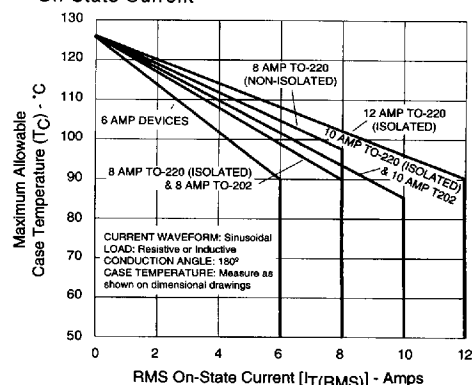


Figure 3C—Maximum Allowable Case Temperature vs RMS On-State Current

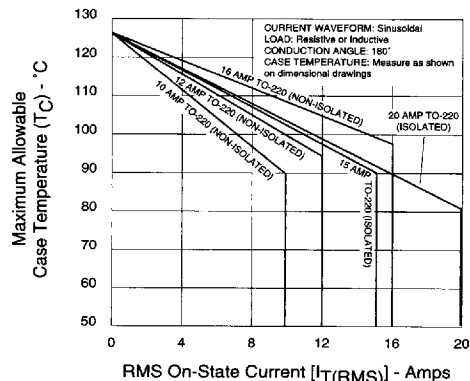


Figure 3D—Maximum Allowable Case Temperature vs RMS On-State Current

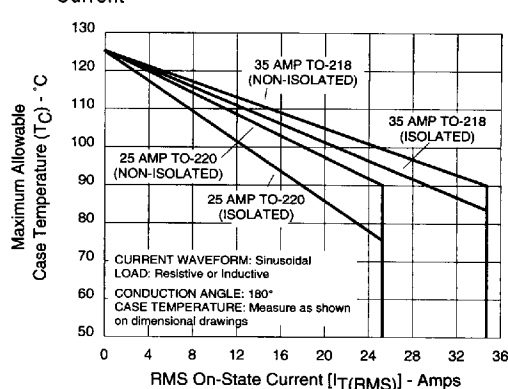


Figure 3E—Maximum Allowable Case Temperature vs RMS On-State Current

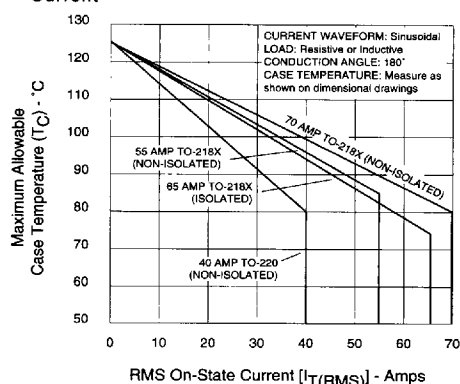
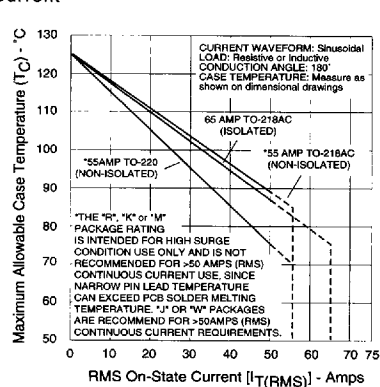


Figure 3F—Maximum Allowable Case Temperature vs RMS On-State Current



Electrical Specifications

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

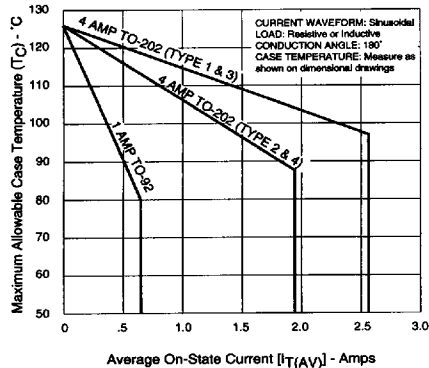


Figure 4B—Maximum Allowable Case Temperature vs Average On-State Current

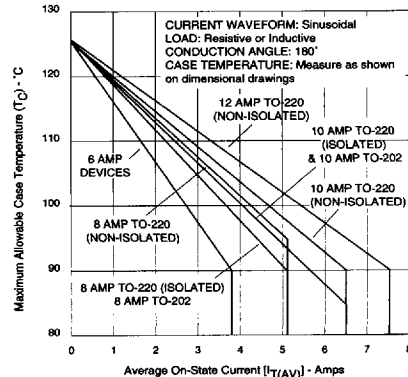


Figure 4C—Maximum Allowable Case Temperature vs Average On-State Current

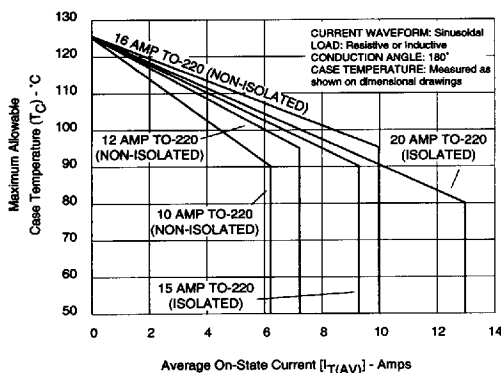


Figure 4D—Maximum Allowable Case Temperature vs Average On-State Current

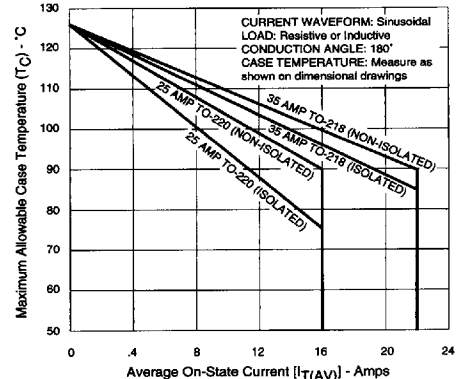


Figure 4E—Maximum Allowable Case Temperature vs Average On-State Current

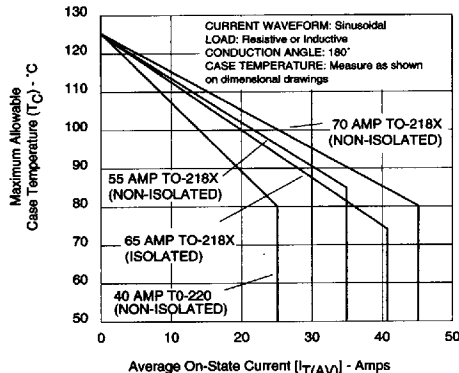


Figure 4F—Maximum Allowable Case Temperature vs Average On-State Current

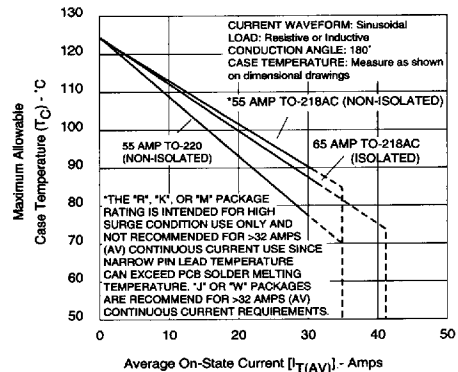


Figure 5—Normalized DC Holding Current vs Case Temperature

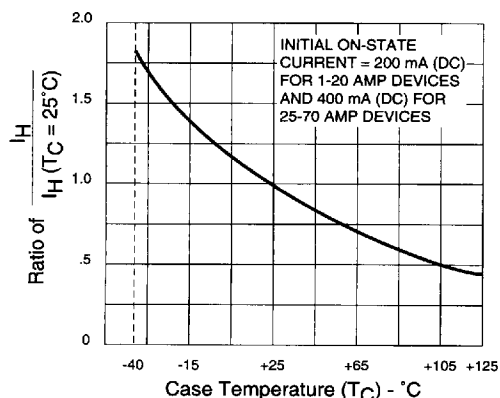


Figure 6—Normalized DC Gate-Trigger Current vs Case Temperature

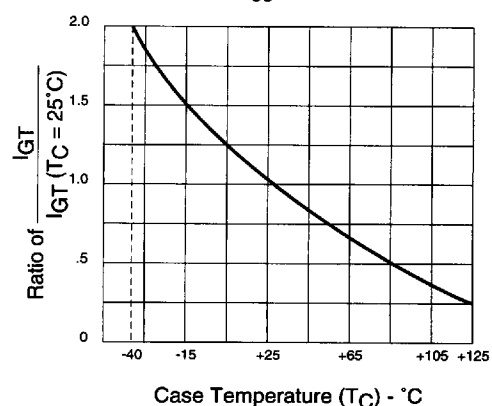


Figure 7A—Instantaneous On-State Current vs On-State Voltage (Typical)

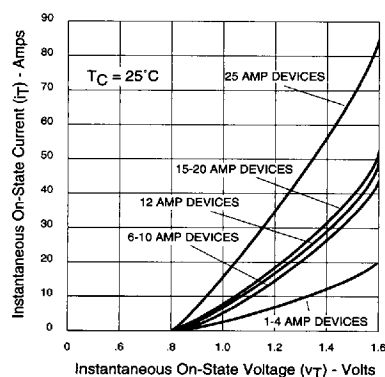


Figure 7B—Instantaneous On-State Current vs On-State Voltage (Typical)

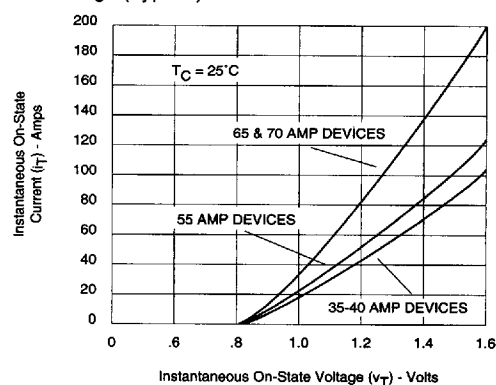


Figure 8—Normalized DC Gate-Trigger Voltage vs Case Temperature

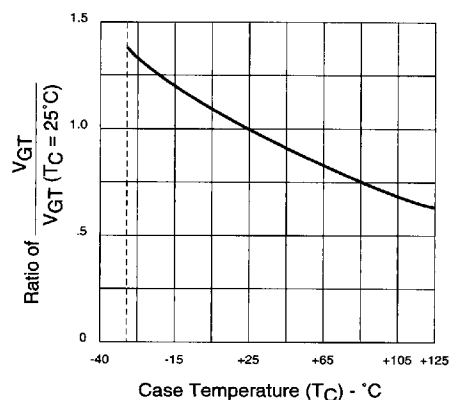
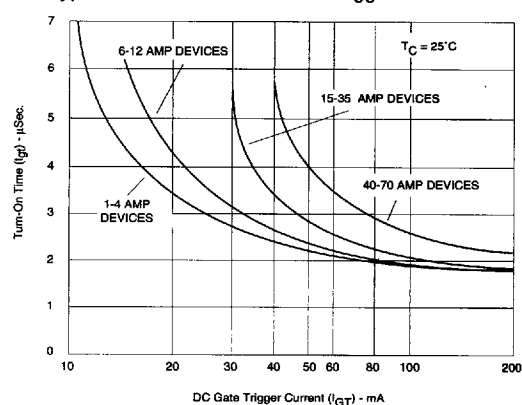


Figure 9—Typical Turn-On Time vs Gate Trigger Current



Electrical Specifications

Figure 10—Peak Surge Current vs Surge Current Duration

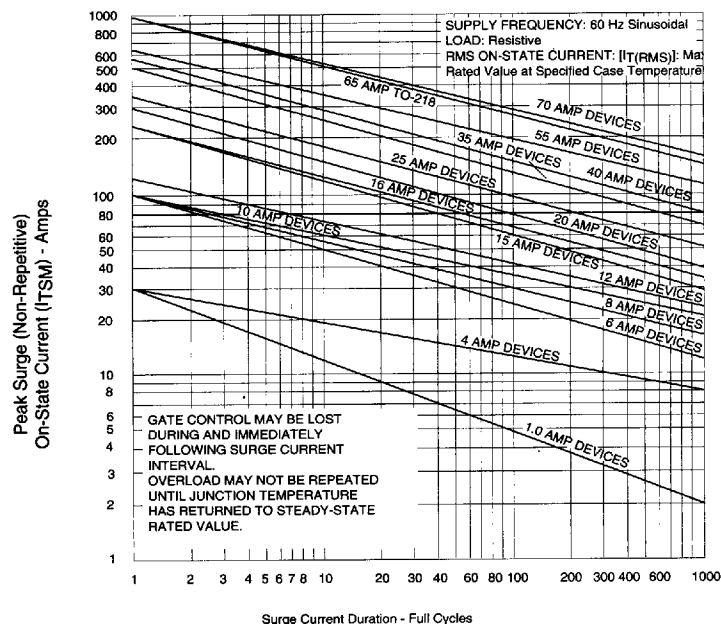


Figure 11A—Power Dissipation (Typical) vs RMS On-State Current

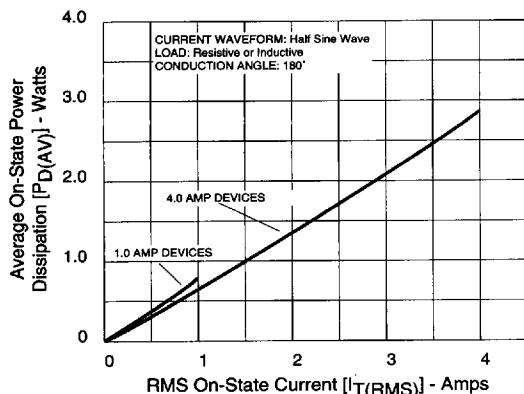


Figure 11B—Power Dissipation (Typical) vs RMS On-State Current

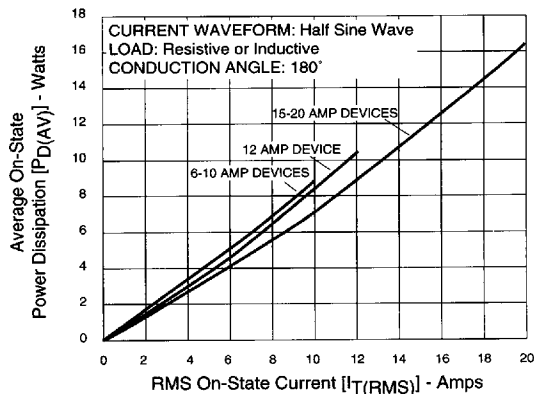


Figure 11C—Power Dissipation (Typical) vs RMS On-State Current

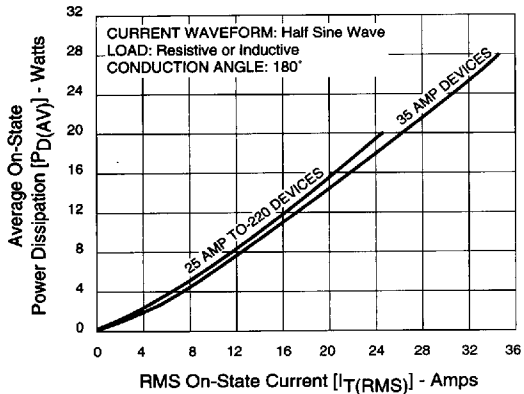


Figure 11D—Power Dissipation (Typical) vs RMS On-State Current

