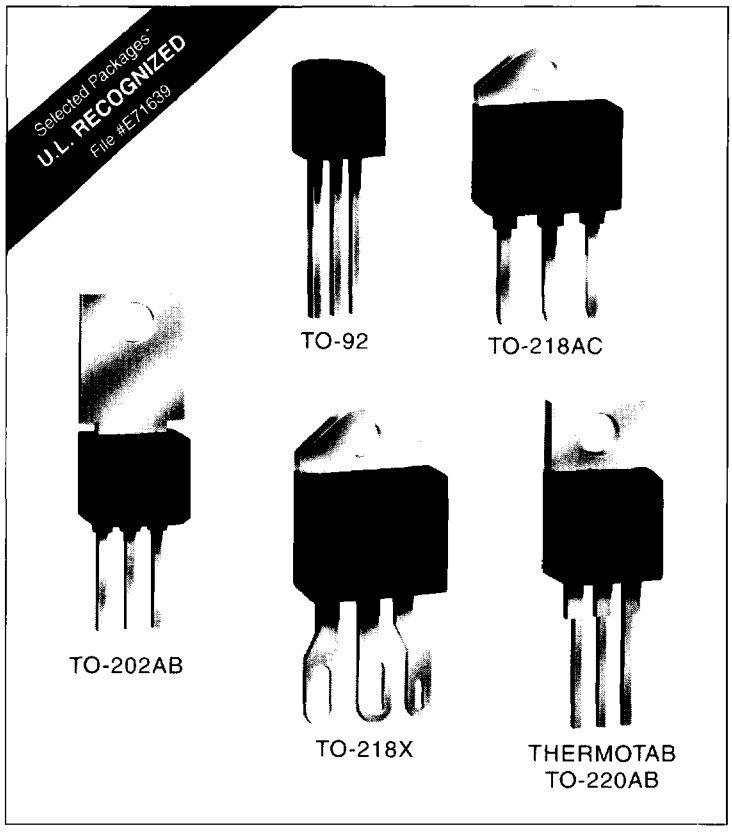
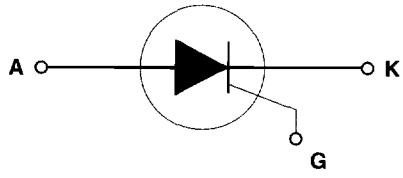




SCRs

(1 – 70 Amps)

General Description

The Teccor Electronics line of thyristor SCR semi-conductors are half-wave, unidirectional, gate-controlled rectifiers which complement Teccor's line of sensitive SCRs. Teccor offers devices with ratings of 1-70 amps and 50-800 volts, with gate sensitivities from 10-50 milliamps. If gate currents in the 12-500 microamp ranges are required, please consult Teccor's sensitive SCR technical data sheets.

Electrically Isolated Packages

Teccor's SCRs 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.

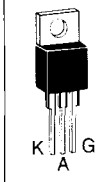
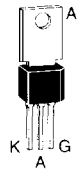
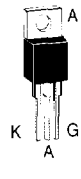
The Teccor line of SCRs features glass passivated device junctions to ensure long term device reliability and parameter stability. Teccor's glass offers a rugged, reliable barrier against junction contamination.

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

Features

- **Electrically-isolated package**
- **High voltage capability — 50 up to 800 Volts**
- **High surge capability — up to 950 Amps**
- **Glass passivated chip**

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) (2)		Repetitive Peak Off-State Forward & Reverse Voltage	DC Gate Trigger Current V_D = 12VDC R_L = 60Ω (4)		Peak Off-State Forward & Reverse Current at V_{DRM} & V_{RRM} (13)			Peak On-State Voltage at Max Rated RMS Current T_C = 25°C (3)	DC Gate-Trigger Voltage V_D = 12VDC R_L = 60Ω (8)	
	 TO - 92	 TO - 220AB	 TO - 202AB	 TO -220AB	Amps		Volts	mAmps		mAmps			Volts	Volts	
	See "Package Dimensions" section for variations.				$I_{T(RMS)}$ MAX	IT(AV) MAX	MIN	MIN	MAX	T_C = 25°C MAX	T_C = 100°C MAX	T_C = 125°C MAX	MAX	T_C = 25°C MAX	T_C = 125°C 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
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
		S8006L			6.0	3.8	800	1	15	.01	0.2	0.5	1.6	1.5	0.2
8.0 Amps		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

General Notes

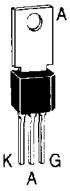
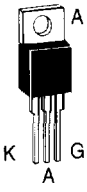
- All measurements are made at 60Hz with a resistive load at an ambient temperature of +25°C unless otherwise specified.
- Operating temperature range (T_J) is -65°C to +125°C for TO-92 devices and -40°C to +125°C for all other packages.
- Storage temperature range (T_S) is -65°C to +150°C for TO-92 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 this catalog.

Electrical Specification Notes

(1) See Figures 6.5 through 6.16 for current rating at specified operating case temperature.
(2) See Figures 6.1 and 6.2 for free air current rating.
(3) See Figures 6.19 and 6.20 for instantaneous on-state current vs on-state voltage (typical).
(4) See Figure 6.18 for I_{GT} vs T_C.
(5) See Figure 6.17 for I_H vs T_C.
(6) For more than one full cycle rating, see Figure 6.23.
(7) See Figure 6.22 for t_{gt} vs I_{GT}.
(8) See Figure 6.21 for V_{GT} vs T_C.
(9) Test conditions are as follows: I_T = 1A for 1.0A devices and 2A for all other devices. Pulse duration = 50µs, dv/dt = 20V/µs, di/dt = -10A/µs for 1.0A devices, and -30A/µS for other devices. I_{GT} = 200mA at turn-on.
(10) See Figures 6.5 through 6.10 for maximum allowable case temperatures at maximum rated current.
(11) Pulse width ≤ 10µs.
(12) Initial on-state current = 200mA(DC) for 1A through 16A devices; 400mA(DC) for 20A through 70A devices.
(13) $T_C = T_J$ for test conditions in off-state.

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)
				Amps		Volts/µS					
mAmps	Amps	Watts	Watts	60Hz	50Hz	T_C = 100°C	T_C = 125°C	$Amps^2Sec$	Amps/µSec	µSec	µSec
MAX						MIN	MIN			TYP	MAX
30	**1.5**	**15**	**0.3**	**30**	**25**	**40**	**30**	**3.7**	**50**	**2.0**	**35**
30	**1.5**	**15**	**0.3**	**30**	**25**	**40**	**30**	**3.7**	**50**	**2.0**	**35**
30	**1.5**	**15**	**0.3**	**30**	**25**	**40**	**20**	**3.7**	**50**	**2.0**	**35**
30	**1.5**	**15**	**0.3**	**30**	**25**	**40**	**20**	**3.7**	**50**	**2.0**	**35**
30	**1.5**	**15**	**0.3**	**30**	**25**	**40**	**20**	**3.7**	**50**	**2.0**	**35**
30	2.0	20	0.5	100	83	350	250	41	100	2.0	35
30	2.0	20	0.5	100	83	350	250	41	100	2.0	35
30	2.0	20	0.5	100	83	350	250	41	100	2.0	35
30	2.0	20	0.5	100	83	350	250	41	100	2.0	35
30	2.0	20	0.5	100	83	300	225	41	100	2.0	35
30	2.0	20	0.5	100	83	250	200	41	100	2.0	35
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**300**	**225**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**250**	**200**	**41**	**100**	**2.0**	**35**

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 and Reverse Voltage	DC Gate Trigger Current V_D = 12VDC R_L = 60Ω (4)		Peak Off-State Forward and Reverse Current at V_{DRM} & V_{RRM} (13)			Peak On-State Voltage at Max Rated RMS Current T_C = 25°C (3)	DC Gate Trigger Voltage V_D = 12VDC R_L = 60Ω (8)	
	 TO-220AB	 TO-202AB	 TO-220AB	Amps		Volts	mAmps		mAmps			Volts	Volts	
				$I_{T(RMS)}$	$I_{T(AV)}$				T_C = 25°C	T_C = 100°C	T_C = 125°C		T_C = 25°C	T_C = 125°C
	See "Package Dimensions" section for variations.			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
			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
12.0 Amps			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
15.0 Amps	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	.02	1.0	2.0	1.6	1.5	0.2
16.0 Amps			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

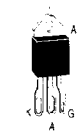
- All measurements are made at 60Hz with a resistive load at an ambient temperature of +25°C unless otherwise specified.
- Operating temperature range (T_J) is -65°C to +125°C for TO-92 devices and -40°C to +125°C for all other packages.
- Storage temperature range (T_S) is -65°C to +150°C for TO-92 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 this catalog.

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) (15)		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)
				Amps		Volts/µSec					
mAmps	Amps	Watts	Watts	60Hz	50Hz	T_C = 100°C	T_C = 125°C	$Amps^2Sec$	Amps/µSec	µSec	µSec
MAX						MIN	MIN			TYP	MAX
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**300**	**225**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**250**	**200**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**350**	**250**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**300**	**225**	**41**	**100**	**2.0**	**35**
30	**2.0**	**20**	**0.5**	**100**	**83**	**250**	**200**	**41**	**100**	**2.0**	**35**
40	2.0	20	0.5	120	100	350	250	60	100	2.0	35
40	2.0	20	0.5	120	100	350	250	60	100	2.0	35
40	2.0	20	0.5	120	100	350	250	60	100	2.0	35
40	2.0	20	0.5	120	100	350	250	60	100	2.0	35
40	2.0	20	0.5	120	100	300	225	60	100	2.0	35
40	2.0	20	0.5	120	100	250	200	60	100	2.0	35
40	**3.0**	**30**	**0.6**	**225**	**188**	**450**	**350**	**210**	**125**	**2.0**	**35**
40	**3.0**	**30**	**0.6**	**225**	**188**	**450**	**350**	**210**	**125**	**2.0**	**35**
40	**3.0**	**30**	**0.6**	**225**	**188**	**450**	**350**	**210**	**125**	**2.0**	**35**
40	**3.0**	**30**	**0.6**	**225**	**188**	**450**	**350**	**210**	**125**	**2.0**	**35**
40	**3.0**	**30**	**0.6**	**225**	**188**	**425**	**325**	**210**	**125**	**2.0**	**35**
40	**3.0**	**30**	**0.6**	**225**	**188**	**400**	**300**	**210**	**125**	**2.0**	**35**
40	3.0	30	0.6	225	188	450	350	210	125	2.0	35
40	3.0	30	0.6	225	188	450	350	210	125	2.0	35
40	3.0	30	0.6	225	188	450	350	210	125	2.0	35
40	3.0	30	0.6	225	188	450	350	210	125	2.0	35
40	3.0	30	0.6	225	188	425	325	210	125	2.0	35
40	3.0	30	0.6	225	188	400	300	210	125	2.0	35

Electrical Specification Notes

(1) See Figures 6.5 through 6.16 for current rating at specified operating case temperature.
(2) See Figures 6.1 and 6.2 for free air current rating.
(3) See Figures 6.19 and 6.20 for instantaneous on-state current vs on-state voltage (typical).
(4) See Figure 6.18 for I_{GT} vs T_C.
(5) See Figure 6.17 for I_H vs T_C.
(6) For more than one full cycle rating, see Figure 6.23.
(7) See Figure 6.22 for t_{gt} vs I_{GT}.
(8) See Figure 6.21 for V_{GT} vs T_C.
(9) Test conditions are as follows: i_T = 1A for 1.0A devices and 2A for all other devices. Pulse duration = 50µs, dv/dt = 20V/µs, di/dt = -10A/µs for 1.0A devices, and -30A/µs for other devices. I_{GT} = 200mA at turn-on.
(10) See Figures 6.5 through 6.10 for maximum allowable case temperatures at maximum rated current.
(11) Pulse width ≤ 10µs.
(12) Initial on-state current = 200mA(DC) for 1 through 16A devices; 400mA(DC) for 20A through 70A devices.
(13) $T_C = T_J$ for test conditions in off-state.
(14) 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.
(15) For various durations of an exponentially decaying current waveform, see Figures 6.3 and 6.4. (t_w is defined as 5 time constants.)

Electrical Specifications

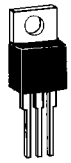
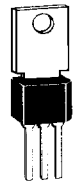
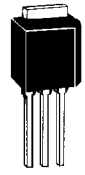
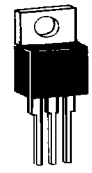
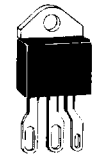
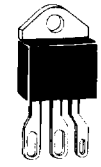
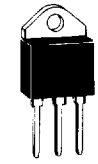
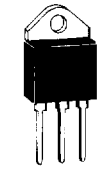
TYPE	Part Number						I_T		V_{DRM} & V_{RRM}	I_{GT}		I_{DRM} & I_{RRM}			V_{TM}
	Isolated			Non-Isolated			Maximum On-State Current (1) (14)		Repetitive Peak Off-State Forward and Reverse Voltage	DC Gate Trigger Current V_D = 12VDC R_L = 30Ω (4)		Peak Off-State Forward and Reverse Current at V_{DRM} and V_{RRM} (13)			Peak On-State Voltage at Max Rated RMS Current T_C = 25°C (3)
	 TO 220AB	 TO 218X	 TO 218AC	 TO 220AB	 TO 218X	 TO 218AC	Amps		Volts	mAmps		mAmps			Volts
	See "Package Dimensions" section for variations.						$I_{T(RMS)}$	$I_{T(AV)}$	MIN	MIN	MAX	T_C = 25°C	T_C = 100°C	T_C = 125°C	MAX
20 Amps	S0520L						20	12.8	50	1	30	.01	0.5	1.0	1.6
	S1020L						20	12.8	100	1	30	.01	0.5	1.0	1.6
	S2020L						20	12.8	200	1	30	.01	0.5	1.0	1.6
	S4020L						20	12.8	400	1	30	.01	0.5	1.0	1.6
	S6020L						20	12.8	600	1	30	.01	0.5	1.0	1.6
	S8020L						20	12.8	800	1	30	.02	1.0	2.0	1.6
25 Amps	S0525L			S0525R			25	16	50	1	35	.01	1.0	2.0	1.6
	S1025L			S1025R			25	16	100	1	35	.01	1.0	2.0	1.6
	S2025L			S2025R			25	16	200	1	35	.01	1.0	2.0	1.6
	S4025L			S4025R			25	16	400	1	35	.01	1.0	2.0	1.6
	S6025L			S6025R			25	16	600	1	35	.01	1.0	2.0	1.6
	S8025L			S8025R			25	16	800	1	35	.02	1.5	3.0	1.6
35 Amps		S0535J	S0535K				35	22	50	5	40	.01	1.0	2.0	1.8
		S1035J	S1035K				35	22	100	5	40	.01	1.0	2.0	1.8
		S2035J	S2035K				35	22	200	5	40	.01	1.0	2.0	1.8
		S4035J	S4035K				35	22	400	5	40	.01	1.0	2.0	1.8
		S6035J	S6035K				35	22	600	5	40	.01	1.0	2.0	1.8
		S8035J	S8035K				35	22	800	5	40	.02	1.5	3.0	1.8
40 Amps				S0540R			40	25	50	5	40	.01	1.0	2.0	1.8
				S1040R			40	25	100	5	40	.01	1.0	2.0	1.8
				S2040R			40	25	200	5	40	.01	1.0	2.0	1.8
				S4040R			40	25	400	5	40	.01	1.0	2.0	1.8
				S6040R			40	25	600	5	40	.01	1.0	2.0	1.8
				S8040R			40	25	800	5	40	.02	1.5	3.0	1.8
55 Amps				S0555R	S0555W	S0555M	55	35	50	5	40	.01	1.0	2.0	1.8
				S1055R	S1055W	S1055M	55	35	100	5	40	.01	1.0	2.0	1.8
				S2055R	S2055W	S2055M	55	35	200	5	40	.01	1.0	2.0	1.8
				S4055R	S4055W	S4055M	55	35	400	5	40	.01	1.0	2.0	1.8
				S6055R	S6055W	S6055M	55	35	600	5	40	.01	1.0	2.0	1.8
				S8055R	S8055W	S8055M	55	35	800	5	40	.02	1.5	3.0	1.8
65 Amps		S0565J	S0565K				65	41	50	5	50	.02	1.5	3.0	1.8
		S1065J	S1065K				65	41	100	5	50	.02	1.5	3.0	1.8
		S2065J	S2065K				65	41	200	5	50	.02	1.5	3.0	1.8
		S4065J	S4065K				65	41	400	5	50	.02	1.5	3.0	1.8
		S6065J	S6065K				65	41	600	5	50	.02	1.5	3.0	1.8
		S8065J	S8065K				65	41	800	5	50	.02	2.0	5.0	1.8
70 Amps					S0570W		70	45	50	5	50	.02	1.5	3.0	1.8
					S1070W		70	45	100	5	50	.02	1.5	3.0	1.8
					S2070W		70	45	200	5	50	.02	1.5	3.0	1.8
					S4070W		70	45	400	5	50	.02	1.5	3.0	1.8
					S6070W		70	45	600	5	50	.02	1.5	3.0	1.8
					S8070W		70	45	800	5	50	.02	2.0	5.0	1.8

See General Notes and Electrical Specification Notes on pages 6-4 and 6-5.

V_{GT}		I_H	I_{GM}	P_{GM}	$P_{G(AV)}$	I_{TSM}		dv/dt		I^2t	di/dt	t_{gt}	t_q
DC Gate Trigger Voltage V_D = 12VDC R_L = 30Ω (8)		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) (15)		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 = 150mA Min. Width = 15µS with Rise Time ≤ 0.1µS (7)	Circuit Commutated Turn-Off Time (9) (10)
Volts						Amps		Volts/µSec					
T_C = 25°C	T_C = 125°C	mAmps	Amps	Watts	Watts	60 Hz	50 Hz	T_C = 100°C	T_C = 125°C	$Amps^2Sec$	Amps/µSec	µSec	µSec
MAX	MIN	MAX						MIN	MIN			TYP	MAX
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**450**	**350**	**374**	**125**	**2.0**	**35**
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**450**	**350**	**374**	**125**	**2.0**	**35**
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**450**	**350**	**374**	**125**	**2.0**	**35**
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**450**	**350**	**374**	**125**	**2.0**	**35**
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**425**	**325**	**374**	**125**	**2.0**	**35**
1.5	**0.2**	**40**	**3.0**	**30**	**0.6**	**300**	**255**	**400**	**300**	**374**	**125**	**2.0**	**35**
1.5	0.2	50	3.5	35	0.8	350	300	450	350	510	150	2.0	35
1.5	0.2	50	3.5	35	0.8	350	300	450	350	510	150	2.0	35
1.5	0.2	50	3.5	35	0.8	350	300	450	350	510	150	2.0	35
1.5	0.2	50	3.5	35	0.8	350	300	450	350	510	150	2.0	35
1.5	0.2	50	3.5	35	0.8	350	300	425	325	510	150	2.0	35
1.5	0.2	50	3.5	35	0.8	350	300	400	300	510	150	2.0	35
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**450**	**350**	**1035**	**150**	**2.0**	**35**
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**450**	**350**	**1035**	**150**	**2.0**	**35**
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**450**	**350**	**1035**	**150**	**2.0**	**35**
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**450**	**350**	**1035**	**150**	**2.0**	**35**
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**425**	**325**	**1035**	**150**	**2.0**	**35**
1.5	**0.2**	**50**	**3.5**	**35**	**0.8**	**500**	**425**	**400**	**300**	**1035**	**150**	**2.0**	**35**
1.5	0.2	60	3.5	35	0.8	520	430	650	550	1122	175	2.5	35
1.5	0.2	60	3.5	35	0.8	520	430	650	550	1122	175	2.5	35
1.5	0.2	60	3.5	35	0.8	520	430	650	550	1122	175	2.5	35
1.5	0.2	60	3.5	35	0.8	520	430	650	550	1122	175	2.5	35
1.5	0.2	60	3.5	35	0.8	520	430	600	500	1122	175	2.5	35
1.5	0.2	60	3.5	35	0.8	520	430	500	475	1122	175	2.5	35
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**650**	**550**	**1750**	**175**	**2.5**	**35**
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**650**	**550**	**1750**	**175**	**2.5**	**35**
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**650**	**550**	**1750**	**175**	**2.5**	**35**
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**650**	**550**	**1750**	**175**	**2.5**	**35**
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**600**	**500**	**1750**	**175**	**2.5**	**35**
1.5	**0.2**	**60**	**4.0**	**40**	**0.8**	**650**	**550**	**500**	**475**	**1750**	**175**	**2.5**	**35**
2.0	0.2	80	5.0	50	1.0	950	800	650	550	3745	200	2.5	35
2.0	0.2	80	5.0	50	1.0	950	800	650	550	3745	200	2.5	35
2.0	0.2	80	5.0	50	1.0	950	800	650	550	3745	200	2.5	35
2.0	0.2	80	5.0	50	1.0	950	800	650	550	3745	200	2.5	35
2.0	0.2	80	5.0	50	1.0	950	800	600	500	3745	200	2.5	35
2.0	0.2	80	5.0	50	1.0	950	800	500	475	3745	200	2.5	35
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**650**	**550**	**3745**	**200**	**2.5**	**35**
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**650**	**550**	**3745**	**200**	**2.5**	**35**
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**650**	**550**	**3745**	**200**	**2.5**	**35**
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**650**	**550**	**3745**	**200**	**2.5**	**35**
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**600**	**500**	**3745**	**200**	**2.5**	**35**
2.0	**0.2**	**80**	**5.0**	**50**	**1.0**	**950**	**800**	**500**	**475**	**3745**	**200**	**2.5**	**35**

See General Notes and Electrical Specification Notes on pages 6-4 and 6-5.

Electrical Specifications

THERMAL RESISTANCE (STEADY STATE) $R_{\theta JC}$ [$R_{\theta JA}$] °C/W (TYP)									
Type	E	L	F	F2	R	J	W	K	M
									
	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]								
6.0 Amps		4.0 [50]	4.3	9.5 [70]					
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		.70	
40.0 Amps					0.66				
55.0 Amps					0.58		.53		.53
65.0 Amps						.86		.86	
70.0 Amps							.60		

Electrical Isolation

Teccor s 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 below for standard and optional isolation ratings.

Electrical Isolation from Leads to Mounting Tab			
VAC(RMS)	Isolated ** TO-220AB	Isolated ** TO-218X	Isolated ** TO-218AC
2500	Standard	Standard	Standard
4000	Optional *	N/A	N/A

*For 4000V isolation, add "V" suffix to part number.
**UL Recognized File #E71639.

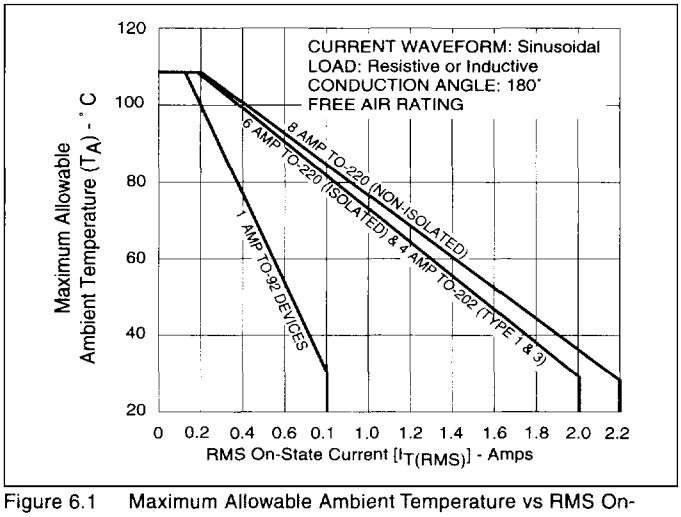


Figure 6.1 Maximum Allowable Ambient Temperature vs RMS On-State Current

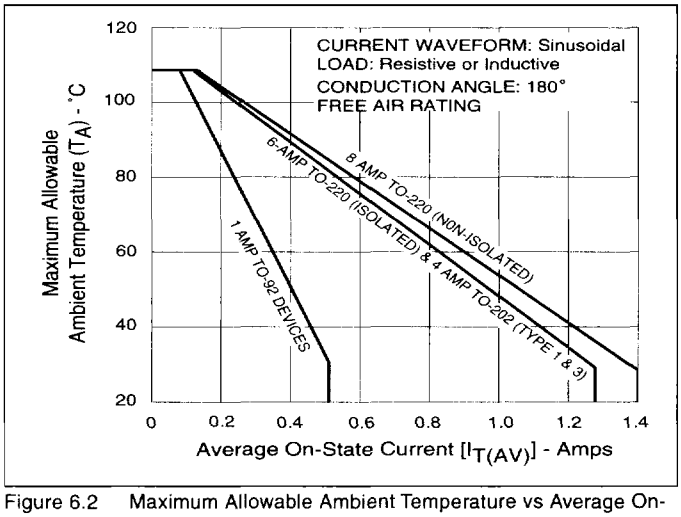


Figure 6.2 Maximum Allowable Ambient Temperature vs Average On-State Current

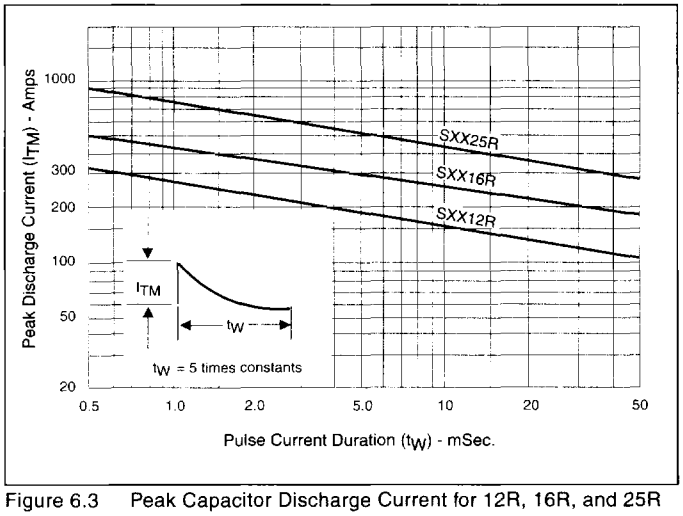


Figure 6.3 Peak Capacitor Discharge Current for 12R, 16R, and 25R

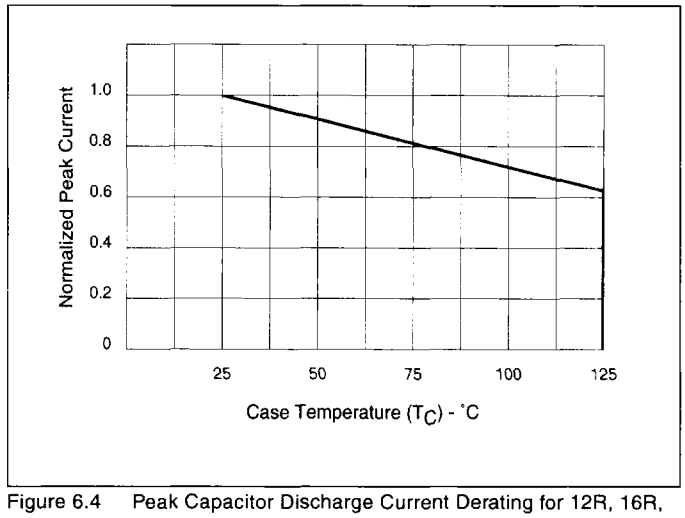


Figure 6.4 Peak Capacitor Discharge Current Derating for 12R, 16R, and 25R

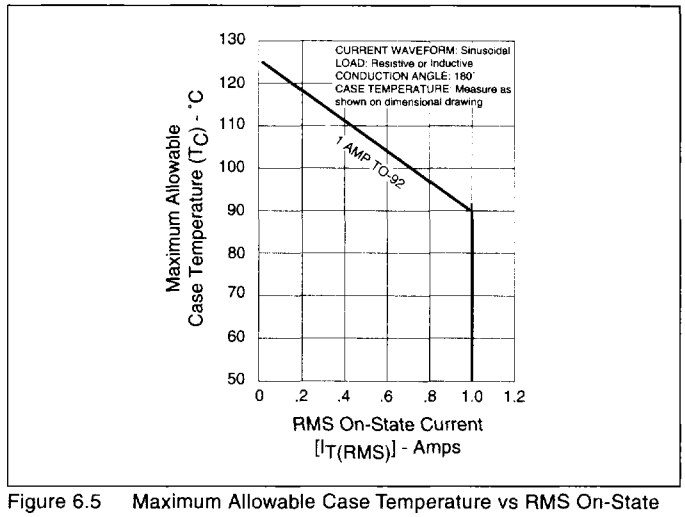


Figure 6.5 Maximum Allowable Case Temperature vs RMS On-State Current (TO-92, 1 Amp)

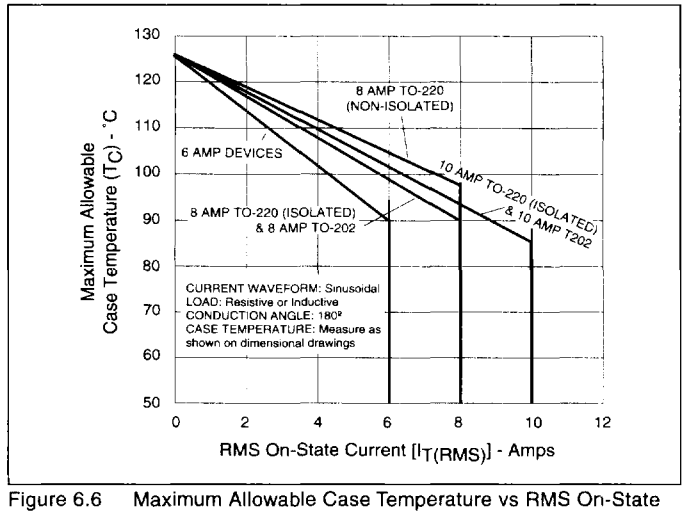


Figure 6.6 Maximum Allowable Case Temperature vs RMS On-State Current (6, 8, and 10 Amps)

Electrical Specifications

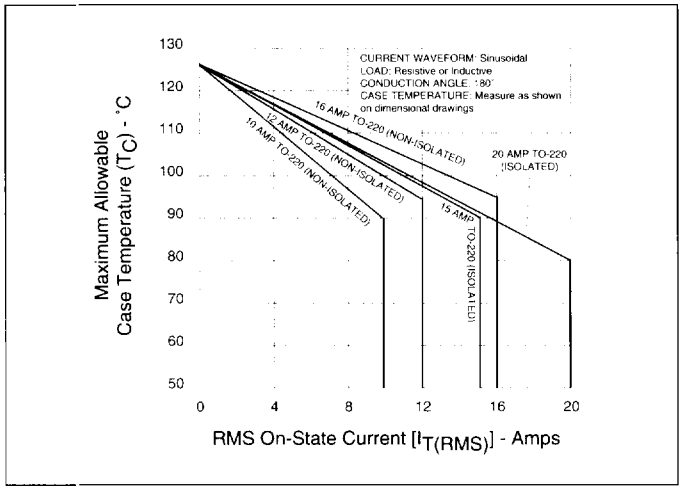


Figure 6.7 Maximum Allowable Case Temperature vs RMS On-State Current (10, 12, 16, and 20 Amps)

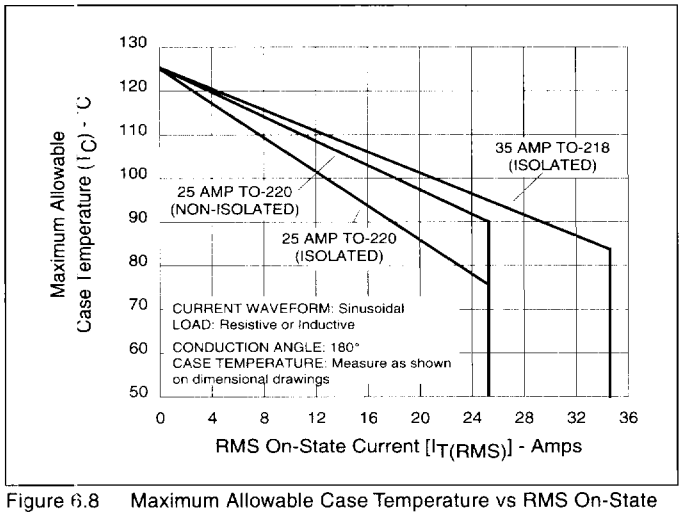


Figure 6.8 Maximum Allowable Case Temperature vs RMS On-State Current (25 and 35 Amps)

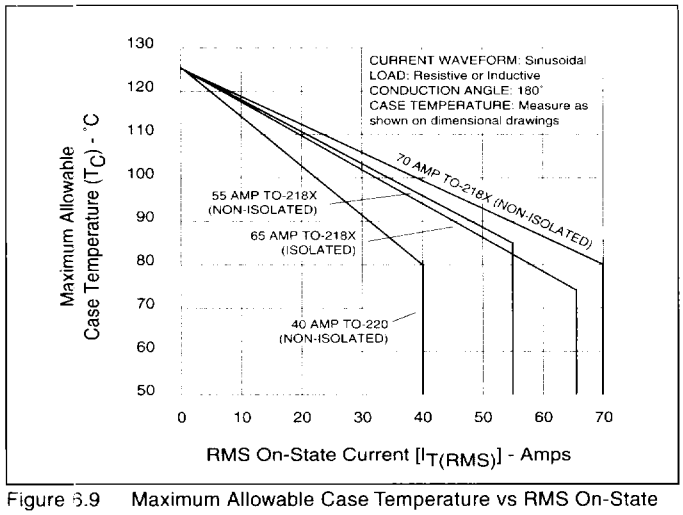


Figure 6.9 Maximum Allowable Case Temperature vs RMS On-State Current (40-70 Amps)

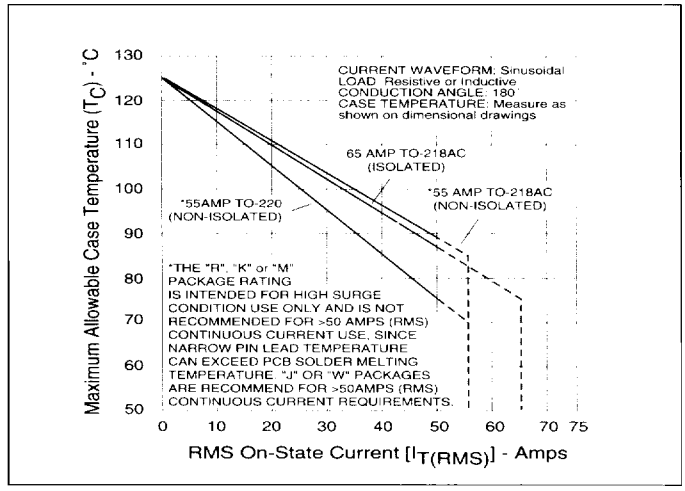


Figure 6.10 Maximum Allowable Case Temperature vs RMS On-State Current (55 and 65 Amps)

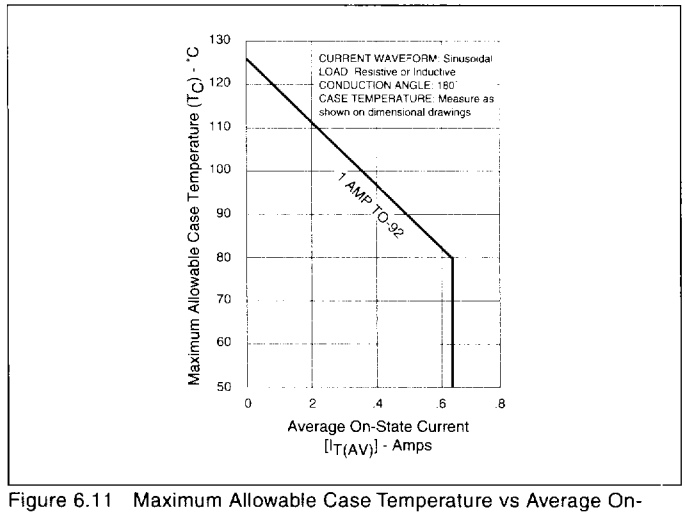


Figure 6.11 Maximum Allowable Case Temperature vs Average On-State Current (TO-92, 1 Amp)

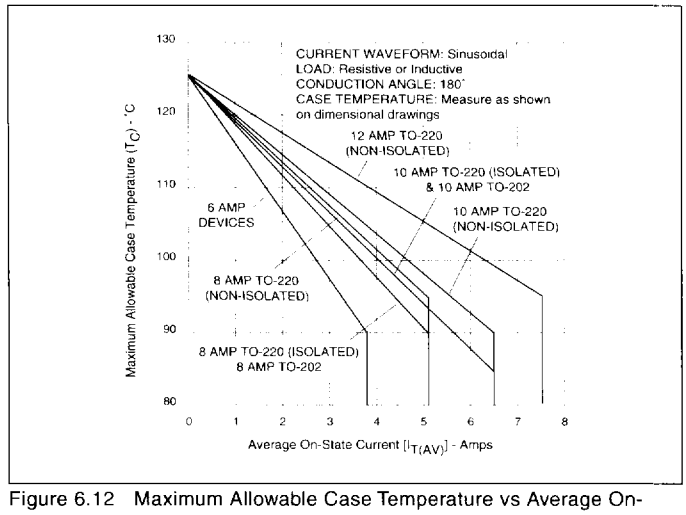


Figure 6.12 Maximum Allowable Case Temperature vs Average On-State Current (8, 10, and 12 Amps)

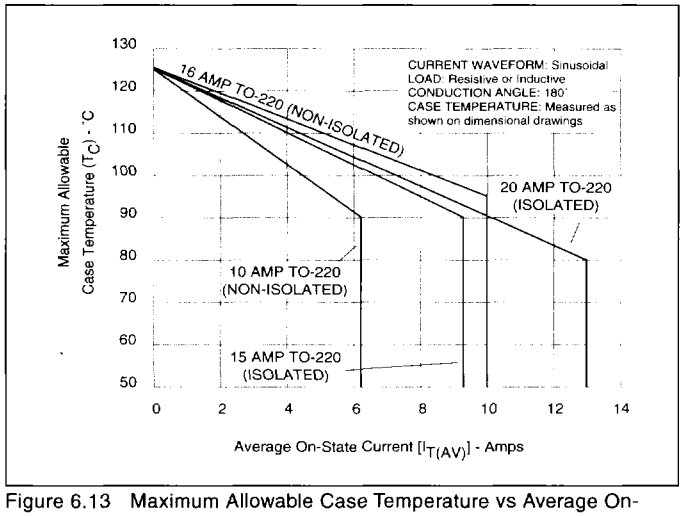


Figure 6.13 Maximum Allowable Case Temperature vs Average On-State Current (10-20 Amps)

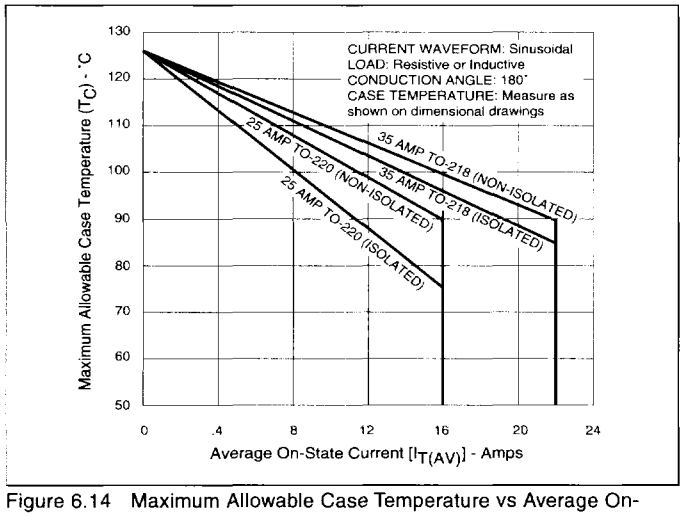


Figure 6.14 Maximum Allowable Case Temperature vs Average On-State Current (25 and 35 Amps)

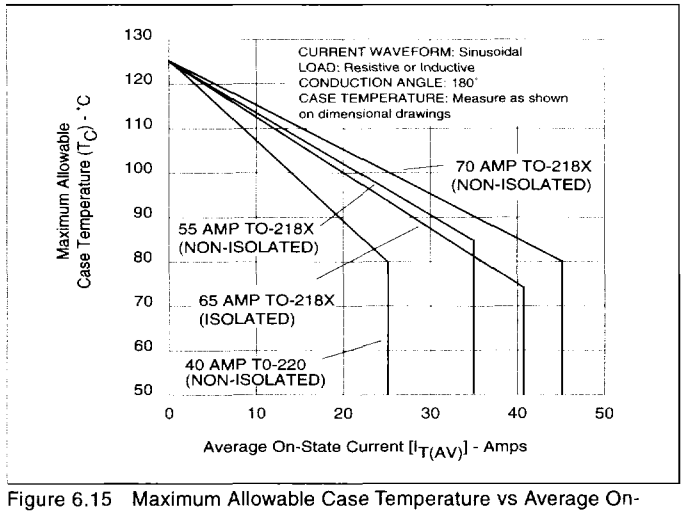


Figure 6.15 Maximum Allowable Case Temperature vs Average On-State Current (40-70 Amps)

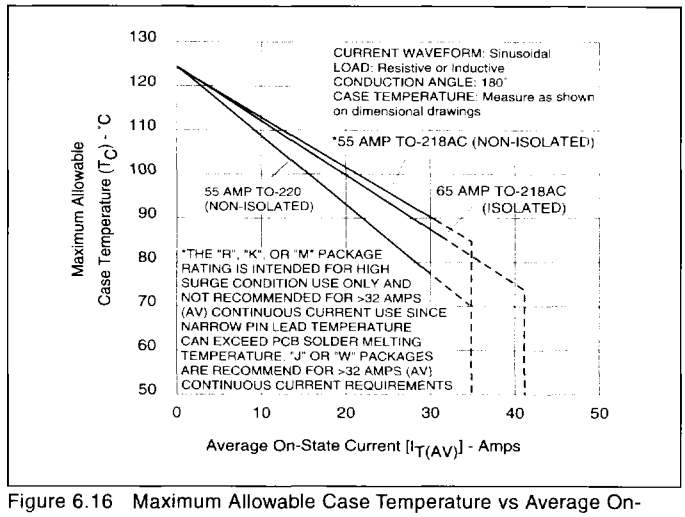


Figure 6.16 Maximum Allowable Case Temperature vs Average On-State Current (55 and 65 Amps)

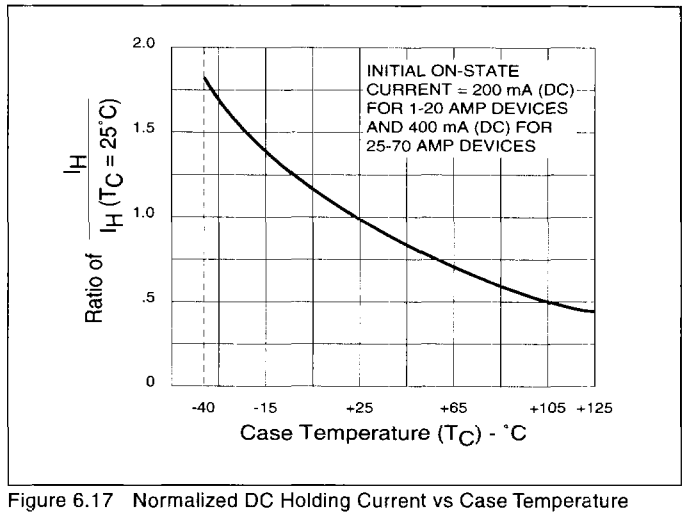


Figure 6.17 Normalized DC Holding Current vs Case Temperature

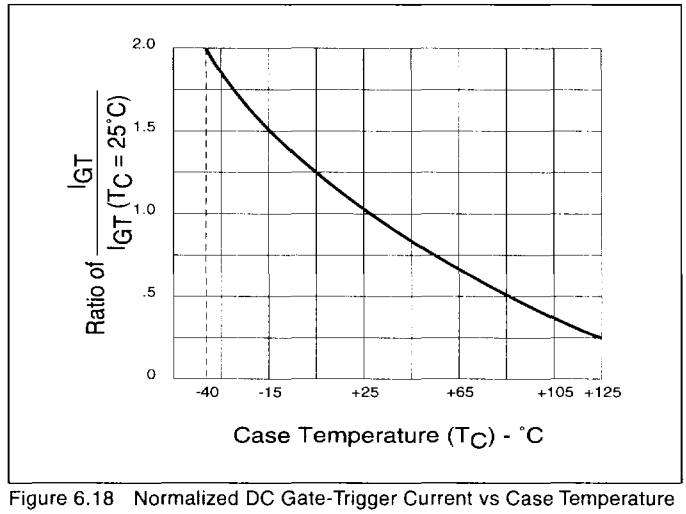


Figure 6.18 Normalized DC Gate-Trigger Current vs Case Temperature

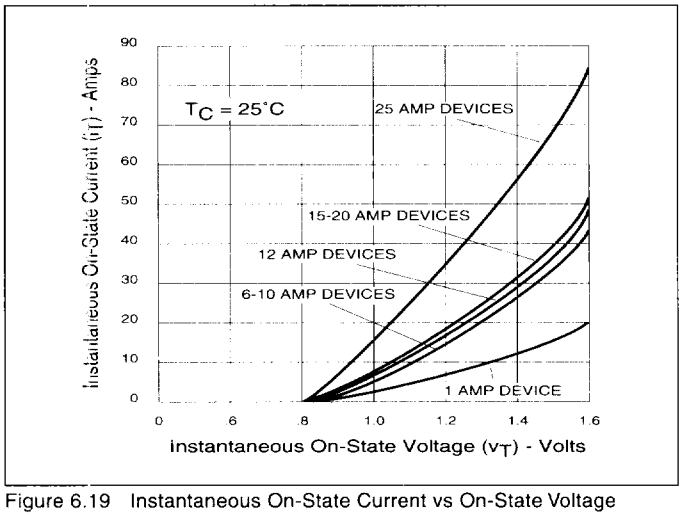


Figure 6.19 Instantaneous On-State Current vs On-State Voltage (Typical) (6-25 Amps)

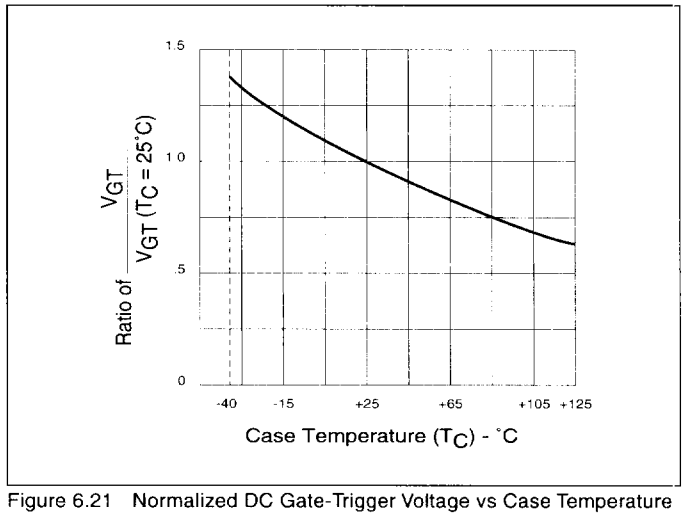


Figure 6.21 Normalized DC Gate-Trigger Voltage vs Case Temperature

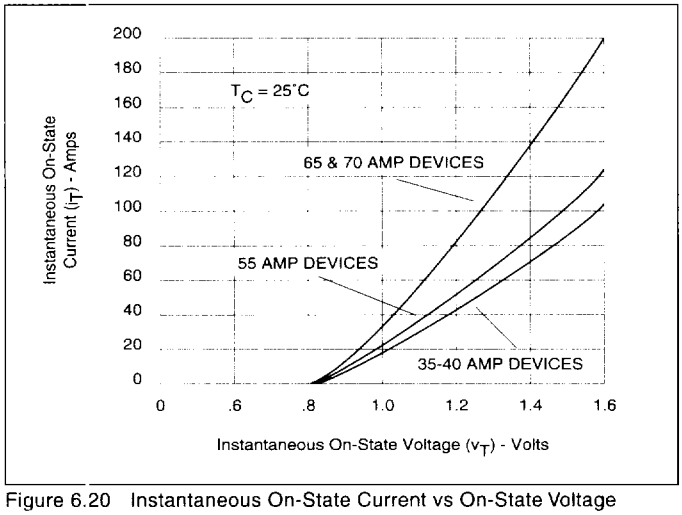


Figure 6.20 Instantaneous On-State Current vs On-State Voltage (Typical) (35-70 Amps)

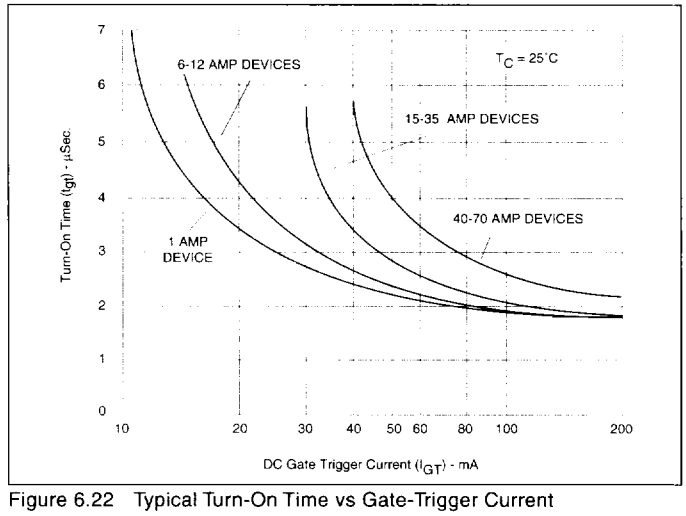


Figure 6.22 Typical Turn-On Time vs Gate-Trigger Current

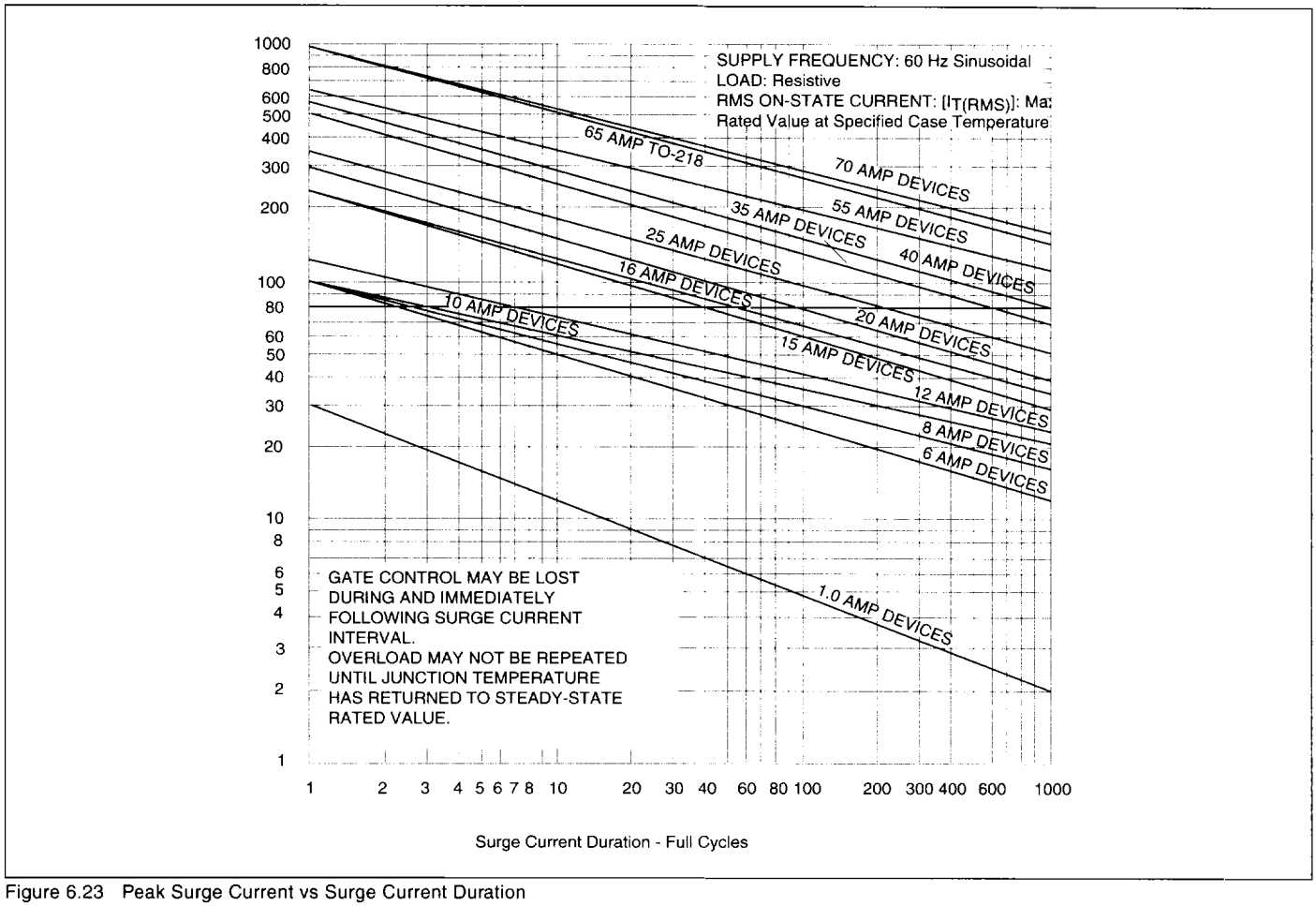


Figure 6.23 Peak Surge Current vs Surge Current Duration

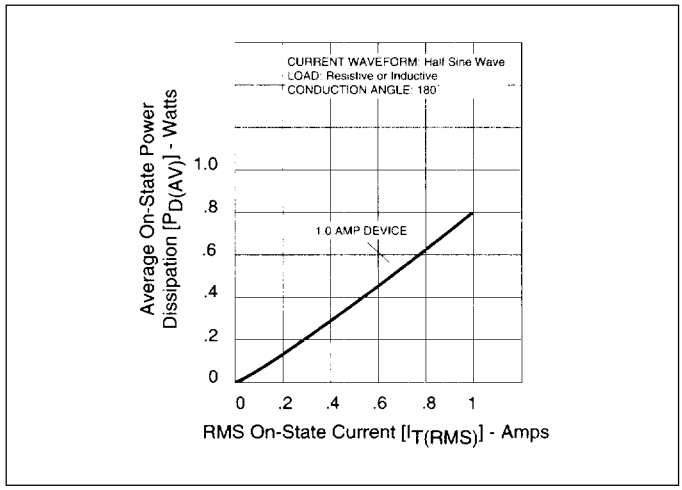


Figure 6.24 Power Dissipation (Typical) vs RMS On-State Current (TO-92, 1 Amp)

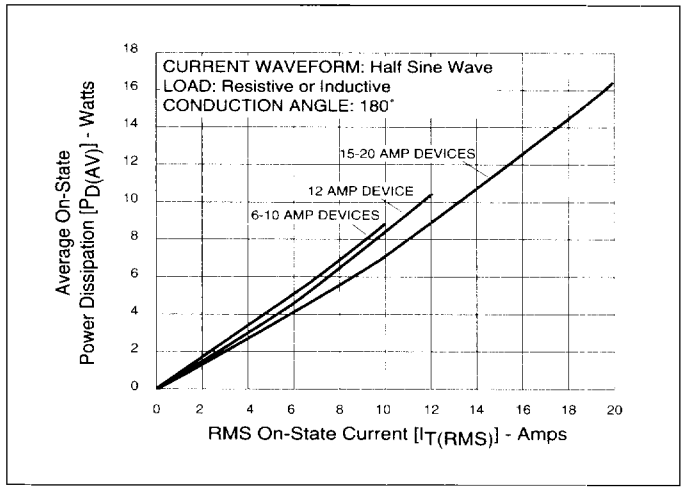


Figure 6.25 Power Dissipation (Typical) vs RMS On-State Current (6-20 Amps)

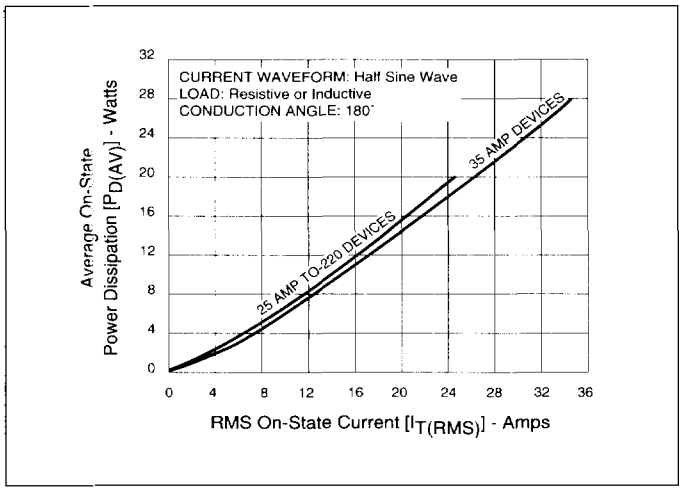


Figure 6.26 Power Dissipation (Typical) vs RMS On-State Current (25 and 35 Amps)

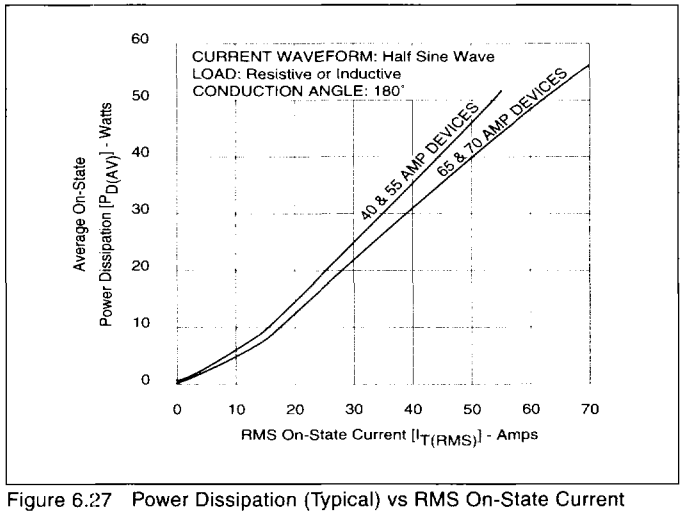


Figure 6.27 Power Dissipation (Typical) vs RMS On-State Current (40-70 Amps)