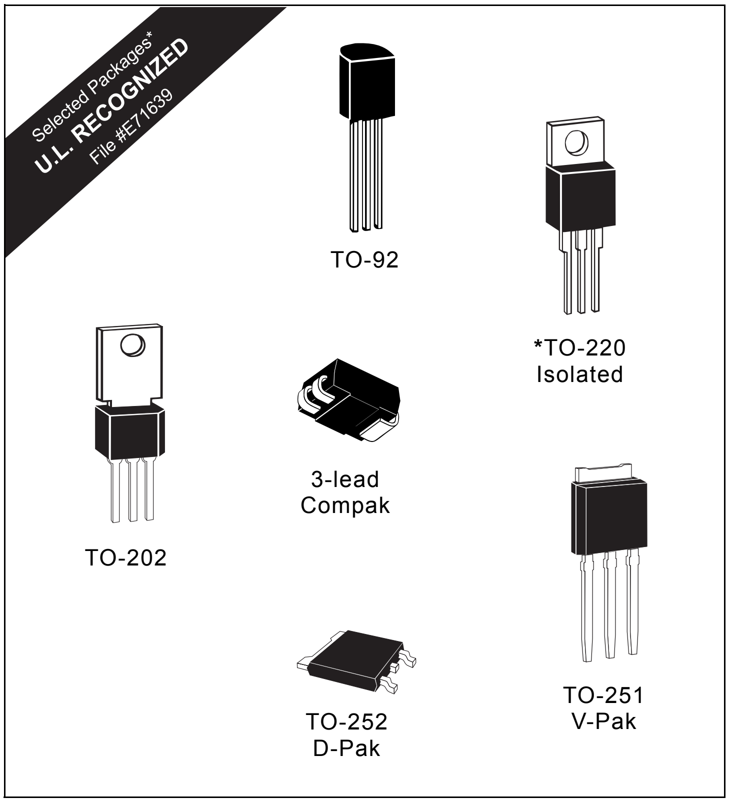
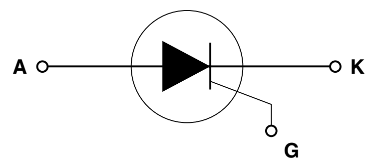




Sensitive SCRs

(0.8 A to 10 A)

General Description

The Teccor line of sensitive SCR semiconductors are half-wave unidirectional, gate-controlled rectifiers (SCR-thyristor) which complement Teccor's line of power SCRs. This group of packages offers ratings of 0.8 A to 10 A, and 200 V to 600 V with gate sensitivities of 12 µA to 500 µA. For gate currents in the 10 mA to 50 mA ranges, see "SCRs" section of this catalog.

The TO-220 and TO-92 are electrically isolated where the case or tab is internally isolated to allow the use of low-cost assembly and convenient packaging techniques.

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

Tape-and-reel packaging is available for the TO-92 package. Consult the factory for more information.

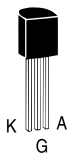
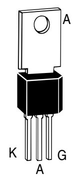
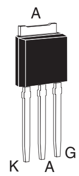
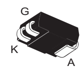
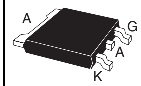
Variations of devices covered in this data sheet are available for custom design applications. Consult the factory for more information.

Features

- **Electrically-isolated TO-220 package**
- **High voltage capability — up to 600 V**
- **High surge capability — up to 100 A**
- **Glass-passivated chip**

Compak Features

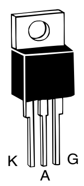
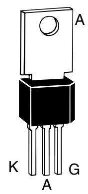
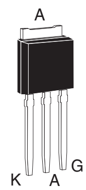
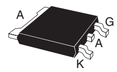
- **Surface mount package — 0.8 A series**
- **New small-profile three-leaded Compak package**
- **Four gate sensitivities available**
- **Packaged in embossed carrier tape with 2,500 devices per reel**
- **Can replace SOT-223**

TYPE	Part Number					I_T		V_{DRM} & V_{RRM}	I_{GT}	I_{DRM} & I_{RRM}			V_{TM}
		Non-isolated				(1)			(2) (12) (14) (18)	(20) (21)			(3) (10)
	 TO-92	 TO-202	 TO-251 V-Pak	 Compak	 TO-252 D-Pak	Amps				µAmps			
	See "Package Dimensions" section for variations. (11)					$I_{T(RMS)}$	$I_{T(AV)}$	Volts	µAmps	T_C or T_L = 25 °C	T_C or T_L = 100 °C	T_C or T_L = 110 °C	Volts
						MAX		MIN	MAX	MAX			MAX
0.8 A				S2S1		0.8	0.51	200	12	2		100	1.7
				S4S1		0.8	0.51	400	12	2		100	1.7
				S6S1		0.8	0.51	600	12	2		100	1.7
				S2S2		0.8	0.51	200	50	2		100	1.7
				S4S2		0.8	0.51	400	50	2		100	1.7
				S6S2		0.8	0.51	600	50	2		100	1.7
				S2S		0.8	0.51	200	200	2		100	1.7
				S4S		0.8	0.51	400	200	2		100	1.7
				S6S		0.8	0.51	600	200	2		100	1.7
				S2S3		0.8	0.51	200	500	2		100	1.7
				S4S3		0.8	0.51	400	500	2		100	1.7
				S6S3		0.8	0.51	600	500	2		100	1.7
	EC103B					0.8	0.51	200	200	1	50		1.7
	EC103D					0.8	0.51	400	200	1	50		1.7
	EC103M					0.8	0.51	600	200	2	100		1.7
	EC103B1					0.8	0.51	200	12	1	50		1.7
	EC103D1					0.8	0.51	400	12	1	50		1.7
	EC103M1					0.8	0.51	600	12	2	100		1.7
	EC103B2					0.8	0.51	200	50	1	50		1.7
	EC103D2					0.8	0.51	400	50	1	50		1.7
	EC103M2					0.8	0.51	600	50	2	100		1.7
	EC103B3					0.8	0.51	200	500	1	50		1.7
	EC103D3					0.8	0.51	400	500	1	50		1.7
	EC103M3					0.8	0.51	600	500	2	100		1.7
	2N5064					0.8	0.51	200	200	1		50	1.7
	2N6565					0.8	0.51	400	200	1		100	1.7
1.5 A	TCR22-4					1.5	0.95	200	200	1		100	1.5
	TCR22-6					1.5	0.95	400	200	1		100	1.5
	TCR22-8					1.5	0.95	600	200	2		100	1.5
4 A		T106B1				4	2.5	200	200	2		100	2.2
		T106D1				4	2.5	400	200	2		100	2.2
		T106M1				4	2.5	600	200	2		100	2.2
		T107B1				4	2.5	200	500	2		100	2.5
		T107D1				4	2.5	400	500	2		100	2.5
		T107M1				4	2.5	600	500	2		100	2.5
			S2004VS1		S2004DS1	4	2.5	200	50	2		100	1.6
			S4004VS1		S4004DS1	4	2.5	400	50	2		100	1.6
			S6004VS1		S6004DS1	4	2.5	600	50	2		100	1.6
			S2004VS2		S2004DS2	4	2.5	200	200	2		100	1.6
			S4004VS2		S4004DS2	4	2.5	400	200	2		100	1.6
			S6004VS2		S6004DS2	4	2.5	600	200	2		100	1.6

See "General Notes" on page E5 - 4 and "Electrical Specifications Notes" on page E5 - 5

V_{GT}			I_H	I_{GM}	V_{GRM}	P_{GM}	$P_{G(AV)}$	I_{TSM}	dv/dt		di/dt	t_{gt}	t_q	I^2t
(4) (12) (22) Volts			(5) (15) (16) (19)	(17)		(17)		(6) (7) (13) Amps				(8)	(9)	
T_C or T_L = -40 °C	T_C or T_L = 25 °C	T_C or T_L = 110 °C	mAmps	Amps	Volts	Watts	Watts	60/50 Hz	Volts/µSec		Amps/µSec	µSec	µSec	$Amps^2$/Sec
MAX			MAX		MIN				MIN	TYP (23)		TYP	MAX	
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**10**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**25**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**25**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**10**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**30**		**50**	**4**	**50**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**30**		**50**	**4**	**50**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**15**		**50**	**4**	**50**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**40**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**40**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**30**		**50**	**3.5**	**50**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**30**		**50**	**3.5**	**50**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**15**		**50**	**3.5**	**50**	**1.6**
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.2**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**10**		**50**	**2**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**25**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**25**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**10**		**50**	**3**	**60**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**40**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**40**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**8**	**1**	**5**	**1**	**0.1**	**20/16**	**20**		**50**	**5**	**45**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**5**	**1**	**0.1**	**20/16**	**25**		**50**	**2.2**	**60**	**1.6**
1.2	**0.8**	**0.25**	**5**	**1**	**6**	**1**	**0.1**	**20/16**	**25**		**50**	**2.2**	**60**	**1.6**
1	**0.8**	**0.25**	**5**	**1**	**6**	**1**	**0.1**	**20/16**	**60**		**50**	**3.5**	**50**	**1.6**
1	**0.8**	**0.25**	**5**	**1**	**6**	**1**	**0.1**	**20/16**	**40**		**50**	**3.5**	**50**	**1.6**
1	**0.8**	**0.25**	**5**	**1**	**6**	**1**	**0.1**	**20/16**	**30**		**50**	**3.5**	**50**	**1.6**
1	**0.8**	**0.2**	**5**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**4**	**50**	**1.6**
1	**0.8**	**0.2**	**5**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**4**	**50**	**1.6**
1	**0.8**	**0.2**	**5**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**4**	**50**	**1.6**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**5**	**45**	**1.6**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**5**	**45**	**1.6**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**20/16**		**8**	**50**	**5**	**45**	**1.6**
1	**0.8**	**0.2**	**4**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**3**	**50**	**3.7**
1	**0.8**	**0.2**	**4**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**3**	**50**	**3.7**
1	**0.8**	**0.2**	**4**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**3**	**50**	**3.7**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**4**	**50**	**3.7**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**4**	**50**	**3.7**
1	**0.8**	**0.2**	**6**	**1**	**6**	**1**	**0.1**	**30/25**		**8**	**50**	**4**	**50**	**3.7**

See "General Notes" on page E5 - 4 and "Electrical Specifications Notes" on page E5 - 5

TYPE	Part Number				I_T		V_{DRM} & V_{RRM}	I_{GT}	I_{DRM} & I_{RRM}		V_{TM}
	Isolated	Non-isolated			(1)			(2) (12)	(20) (21)		(3) (10)
	 TO-220	 TO-202	 TO-251 V-Pak	 TO-252 D-Pak	Amps				µAmps		
	See “Package Dimensions” section for variations. (11)				$I_{T(RMS)}$	$I_{T(AV)}$	Volts	µAmps	T_C = 25 °C	T_C = 110 °C	Volts
					MAX	MAX	MIN	MAX	MAX	MAX	MAX
6 A	**S2006LS2**	**S2006FS21**	**S2006VS2**	**S2006DS2**	**6**	**3.8**	**200**	**200**	**5**	**250**	**1.6**
	S4006LS2	**S4006FS21**	**S4006VS2**	**S4006DS2**	**6**	**3.8**	**400**	**200**	**5**	**250**	**1.6**
	S6006LS2	**S6006FS21**	**S6006VS2**	**S6006DS2**	**6**	**3.8**	**600**	**200**	**5**	**250**	**1.6**
	S2006LS3	**S2006FS31**	**S2006VS3**	**S2006DS3**	**6**	**3.8**	**200**	**500**	**5**	**250**	**1.6**
	S4006LS3	**S4006FS31**	**S4006VS3**	**S4006DS3**	**6**	**3.8**	**400**	**500**	**5**	**250**	**1.6**
	S6006LS3	**S6006FS31**	**S6006VS3**	**S6006DS3**	**6**	**3.8**	**600**	**500**	**5**	**250**	**1.6**
8 A	**S2008LS2**	**S2008FS21**	**S2008VS2**	**S2008DS2**	**8**	**5.1**	**200**	**200**	**5**	**250**	**1.6**
	S4008LS2	**S4008FS21**	**S4008VS2**	**S4008DS2**	**8**	**5.1**	**400**	**200**	**5**	**250**	**1.6**
	S6008LS2	**S6008FS21**	**S6008VS2**	**S6008DS2**	**8**	**5.1**	**600**	**200**	**5**	**250**	**1.6**
	S2008LS3	**S2008FS31**	**S2008VS3**	**S2008DS3**	**8**	**5.1**	**200**	**500**	**5**	**250**	**1.6**
	S4008LS3	**S4008FS31**	**S4008VS3**	**S4008DS3**	**8**	**5.1**	**400**	**500**	**5**	**250**	**1.6**
	S6008LS3	**S6008FS31**	**S6008VS3**	**S6008DS3**	**8**	**5.1**	**600**	**500**	**5**	**250**	**1.6**
10 A	**S2010LS2**	**S2010FS21**	**S2010VS2**	**S2010DS2**	**10**	**6.4**	**200**	**200**	**5**	**250**	**1.6**
	S4010LS2	**S4010FS21**	**S4010VS2**	**S4010DS2**	**10**	**6.4**	**400**	**200**	**5**	**250**	**1.6**
	S6010LS2	**S6010FS21**	**S6010VS2**	**S6010DS2**	**10**	**6.4**	**600**	**200**	**5**	**250**	**1.6**
	S2010LS3	**S2010FS31**	**S2010VS3**	**S2010DS3**	**10**	**6.4**	**200**	**500**	**5**	**250**	**1.6**
	S4010LS3	**S4010FS31**	**S4010VS3**	**S4010DS3**	**10**	**6.4**	**400**	**500**	**5**	**250**	**1.6**
	S6010LS3	**S6010FS31**	**S6010VS3**	**S6010DS3**	**10**	**6.4**	**600**	**500**	**5**	**250**	**1.6**

Specific Test Conditions

di/dt — Maximum rate-of-change of on-state current; I_{GT} = 50 mA pulse width ≥15 µsec with ≤0.1 µs rise time

dv/dt — Critical rate-of-rise of forward off-state voltage

I^2t — RMS surge (non-repetitive) on-state current for period of 8.3 ms for fusing

I_{DRM} and **I_{RRM}** — Peak off-state current at V_{DRM} and V_{RRM}

I_{GT} — DC gate trigger current V_D = 6 V dc; R_L = 100 Ω

I_{GM} — Peak gate current

I_H — DC holding current; initial on-state current = 20 mA

I_T — Maximum on-state current

I_{TSM} — Peak one-cycle forward surge current

$P_{G(AV)}$ — Average gate power dissipation

P_{GM} — Peak gate power dissipation

t_{gt} — Gate controlled turn-on time gate pulse = 10 mA; minimum width = 15 µS with rise time ≤0.1 µs

t_q — Circuit commutated turn-off time

V_{DRM} and **V_{RRM}** — Repetitive peak off-state forward and reverse voltage

V_{GRM} — Peak reverse gate voltage

V_{GT} — DC gate trigger voltage; V_D = 6 V dc; R_L = 100 Ω

V_{TM} — Peak on-state voltage

General Notes

- Teccor 2N5064 and 2N6565 Series devices conform to all JEDEC registered data. See specifications table on pages E5 - 2 and E5 - 3.
- The case lead temperature (T_C or T_L) is measured as shown on dimensional outline drawings in the “Package Dimensions” section of this catalog.
- All measurements (except I_{GT}) are made with an external resistor R_{GK} = 1 kΩ unless otherwise noted.
- All measurements are made at 60 Hz with a resistive load at an ambient temperature of +25 °C unless otherwise specified.
- Operating temperature (T_J) is -65 °C to +110 °C for EC Series devices, -65 °C to +125 °C for 2N Series devices, -40 °C to +125 °C for “TCR” Series, and -40 °C to +110 °C for all others.
- Storage temperature range (T_S) is -65 °C to +150 °C for TO-92 devices, -40 °C to +150 °C for TO-202 and Compak devices, and -40 °C to +125 °C for all others.
- Lead solder temperature is a maximum of +230 °C for 10 seconds maximum ≥1/16" (1.59 mm) from case.

V_{GT}			I_H	I_{GM}	V_{GRM}	P_{GM}	$P_{G(AV)}$	I_{TSM}	dv/dt	di/dt	t_{gt}	t_q	I^2t
(4) (12) (22)			(5) (19)	(17)		(17)		(6) (13)			(8)	(9)	
Volts									Volts/µSec				
T_C = -40 °C	T_C = 25 °C	T_C = 110 °C	mAmps	Amps	Volts	Watts	Watts	Amps	T_C = 110 °C	Amps/µSec	µSec	µSec	Amps²Sec
MAX			MAX		MIN			60/50 Hz	TYP		TYP	MAX	
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**6**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**4**	**50**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**10**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**
1	**0.8**	**0.25**	**8**	**1**	**6**	**1**	**0.1**	**100/83**	**8**	**100**	**5**	**45**	**41**

Electrical Specifications Notes

(1) See Figure E5.1 through Figure E5.9 for current ratings at specified operating temperatures.

(2) See Figure E5.10 for I_{GT} versus T_C or T_L.

(3) See Figure E5.11 for instantaneous on-state current (i_T) versus on-state voltage (v_T) TYP.

(4) See Figure E5.12 for V_{GT} versus T_C or T_L.

(5) See Figure E5.13 for I_H versus T_C or T_L.

(6) For more than one full cycle, see Figure E5.14.

(7) 0.8 A to 4 A devices also have a pulse peak forward current on-state rating (repetitive) of 75 A. This rating applies for operation at 60 Hz, 75 °C maximum tab (or anode) lead temperature, switching from 80 V peak, sinusoidal current pulse width of 10 µs minimum, 15 µs maximum. See Figure E5.20 and Figure E5.21.

(8) See Figure E5.15 for t_{gt} versus I_{GT}.

(9) Test conditions as follows:
– T_C or T_L ≤80 °C, rectangular current waveform
– Rate-of-rise of current ≤10 A/µs
– Rate-of-reversal of current ≤5 A/µs
– I_{TM} = 1 A (50 µs pulse), Repetition Rate = 60 pps
– V_{RRM} = Rated
– V_R = 15 V minimum, V_{DRM} = Rated
– Rate-of-rise reapplied forward blocking voltage = 5 V/µs
– Gate Bias = 0 V, 100 Ω (during turn-off time interval)

(10) Test condition is maximum rated RMS current except TO-92 devices are 1.2 A_{PK}; T106/T107 devices are 4 A_{PK}.

(11) See package outlines for lead form configurations. When ordering special lead forming, add type number as suffix to part number.

(12) V_D = 6 V dc, R_L = 100 Ω (See Figure E5.19 for simple test circuit for measuring gate trigger voltage and gate trigger current.)

(13) See Figure E5.1 through Figure E5.9 for maximum allowable case temperature at maximum rated current.

(14) I_{GT} = 500 µA maximum at T_C = -40 °C for T106 devices

(15) I_H = 10 mA maximum at T_C = -65 °C for 2N5064 Series and 2N6565 Series devices

(16) I_H = 6 mA maximum at T_C = -40 °C for T106 devices

(17) Pulse Width ≤10 µs

(18) I_{GT} = 350 µA maximum at T_C = -65 °C for 2N5064 Series and 2N6565 Series devices

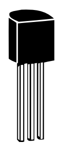
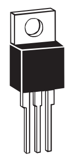
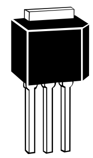
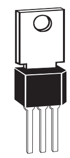
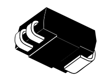
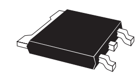
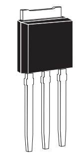
(19) Latching current can be higher than 20 mA for higher I_{GT} types. Also, latching current can be much higher at -40 °C. See Figure E5.18.

(20) T_C or T_L = T_J for test conditions in off state

(21) I_{DRM} and I_{RRM} = 50 µA for 2N5064 and 100 µA for 2N6565 at 125 °C

(22) TO-92 devices specified at -65 °C instead of -40 °C

(23) T_C = 110 °C

Thermal Resistance (Steady State) $R_{\theta JC}$ [$R_{\theta JA}$] °C/W (TYPICAL)							
Package Code	E	L	F2	F	C	D	V
Type	 TO-92	 TO-220	 TO-202 Type 2, 4, & 41	 TO-202 Type 1 & 3	 Compak	 TO-252 D-Pak	 TO-251 V-Pak
0.8 A	**75 [160]**				**60***		
1.5 A	**50 [160]**						
4.0 A			**10 [100]**	**6.2 [80]**		**3.0**	**3.8 [85]**
6.0 A		**4.0 [65]**		**4.3**		**1.8**	**2.4**
8.0 A		**3.4**		**3.9**		**1.5**	**2.1**
10.0 A		**3.0**		**3.4**		**1.45**	**1.72**

*Mounted on 1 cm^2 copper foil surface; two-ounce copper foil

Electrical Isolation

Teccor's isolated sensitive SCRs will withstand a minimum high potential test of 2500 V ac rms from leads to mounting tab over the device's operating temperature range. The following table shows other standard and optional isolation ratings.

Electrical Isolation * from Leads to Mounting Tab	
V AC RMS	**TO-220**
2500	**Standard**
4000	**Optional ****

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

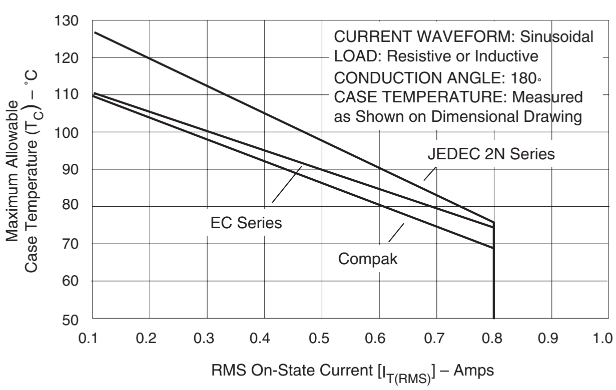


Figure E5.1 Maximum Allowable Case Temperature versus RMS On-state Current

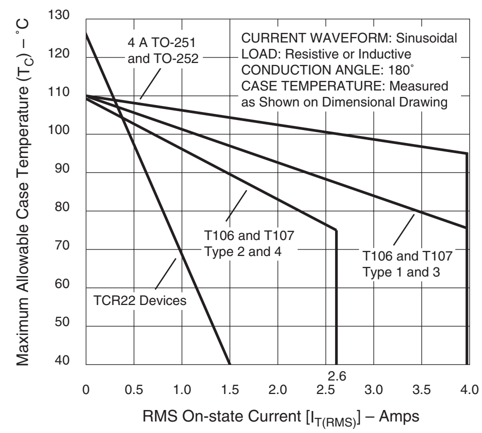


Figure E5.2 Maximum Allowable Case Temperature versus RMS On-state Current

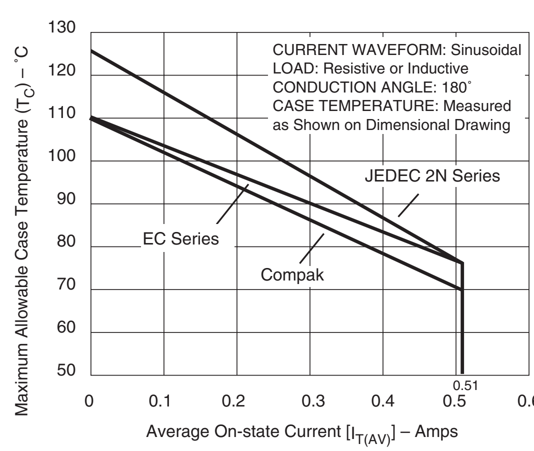


Figure E5.3 Maximum Allowable Case Temperature versus Average On-state Current

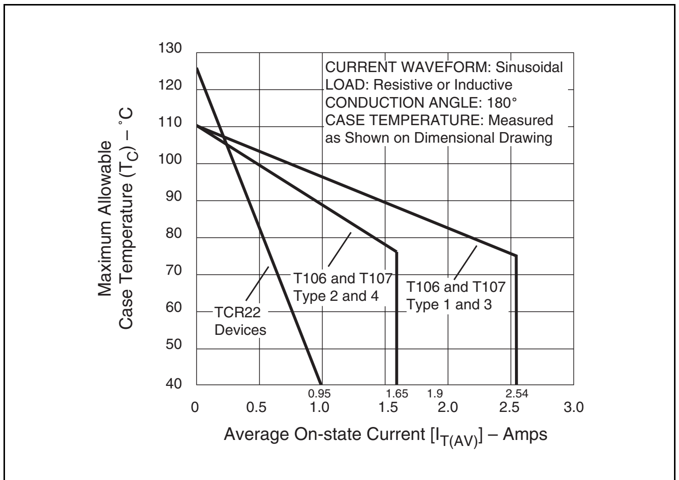


Figure E5.4 Maximum Allowable Case Temperature versus Average On-state Current

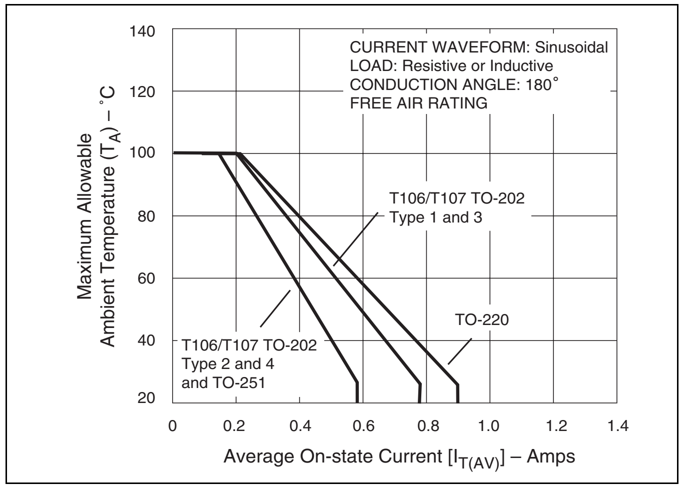


Figure E5.7 Maximum Allowable Ambient Temperature versus Average On-state Current

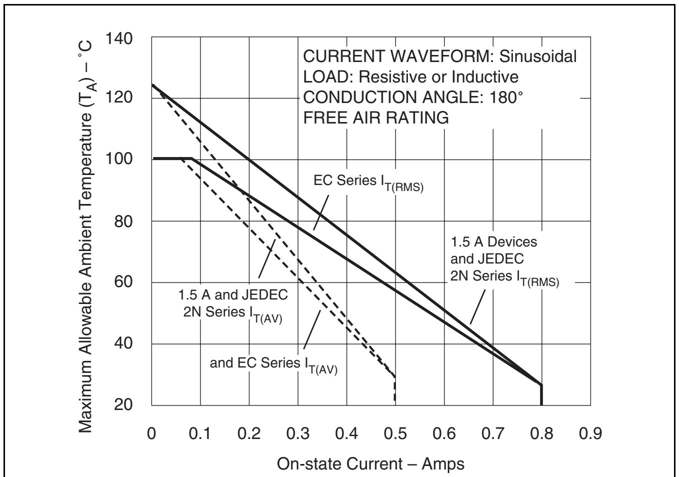


Figure E5.5 Maximum Allowable Ambient Temperature versus On-state Current

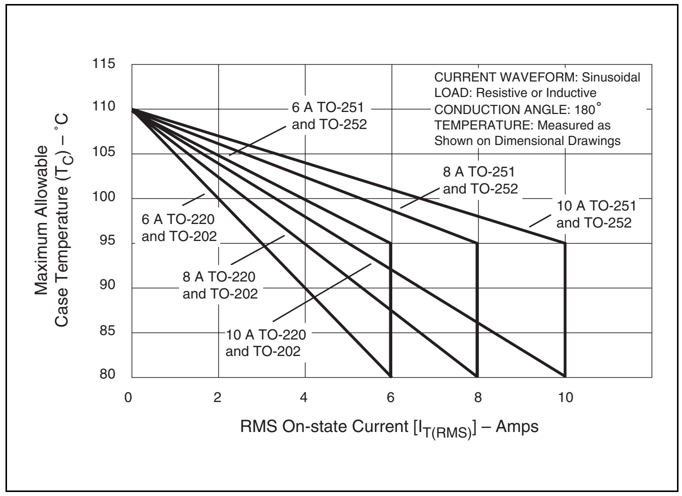


Figure E5.8 Maximum Allowable Case Temperature versus RMS On-state Current

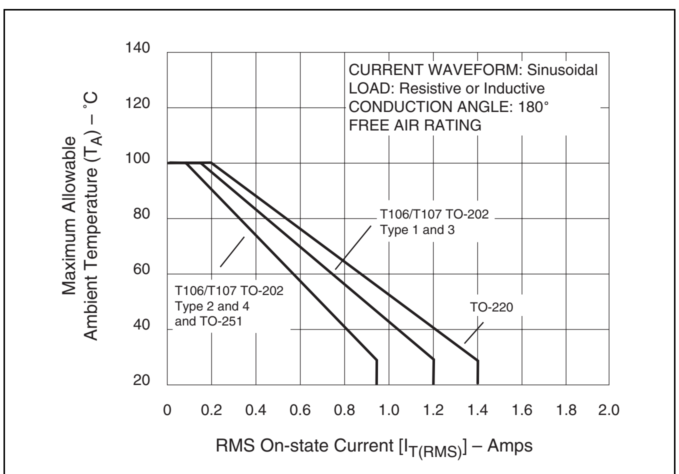


Figure E5.6 Maximum Allowable Ambient Temperature versus RMS On-state Current

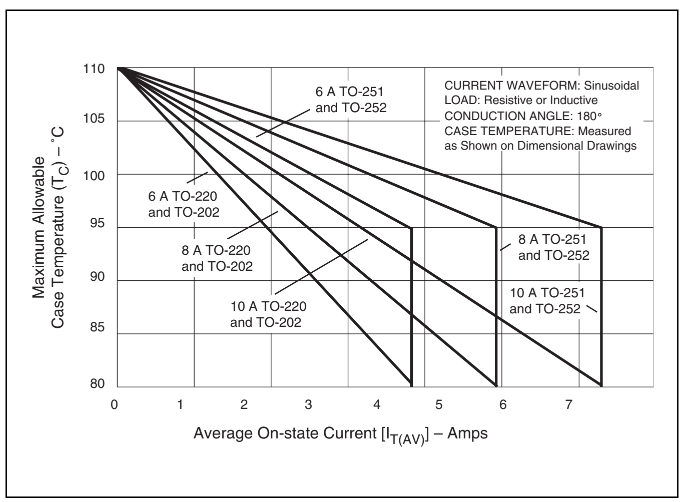


Figure E5.9 Maximum Allowable Case Temperature versus Average On-state Current

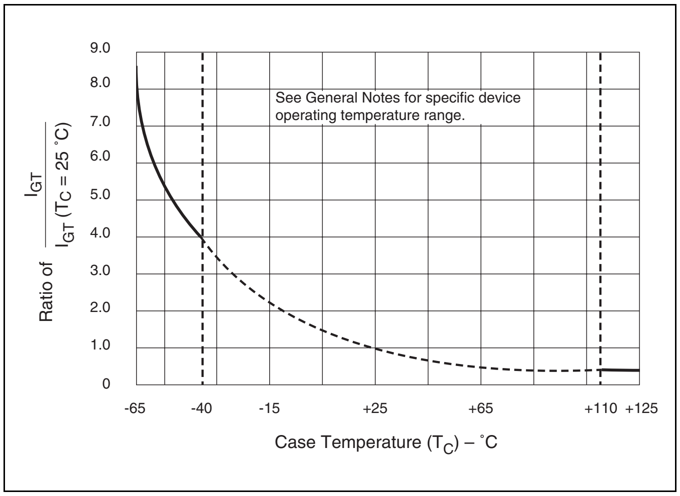


Figure E5.10 Normalized DC Gate-Trigger Current versus Case Temperature

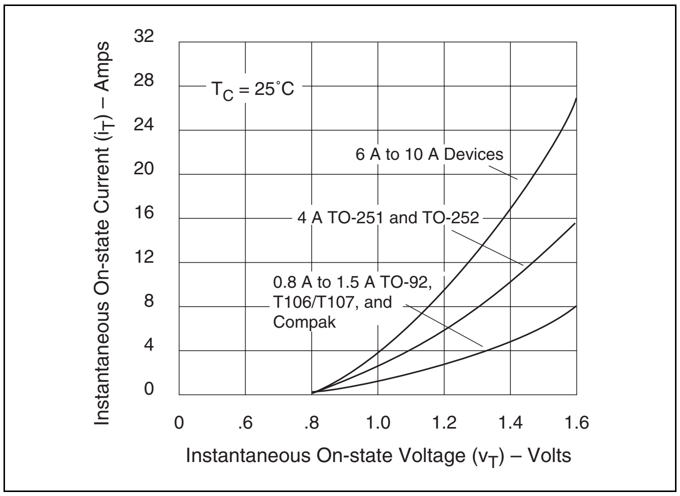


Figure E5.11 Instantaneous On-state Current versus On-state Voltage (Typical)

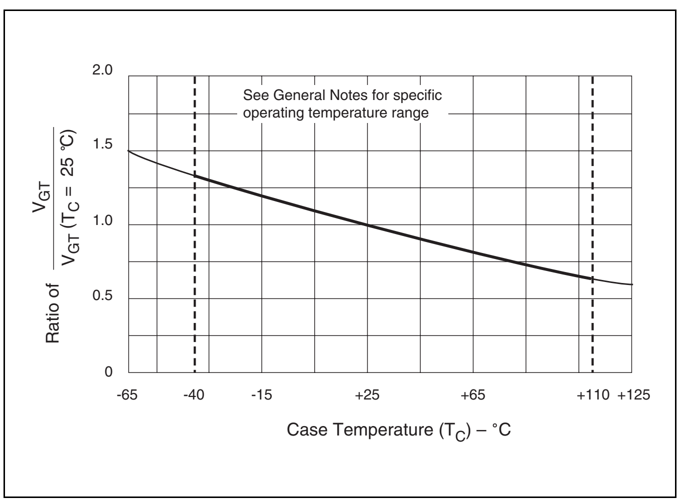


Figure E5.12 Normalized DC Gate-Trigger Voltage versus Case Temperature

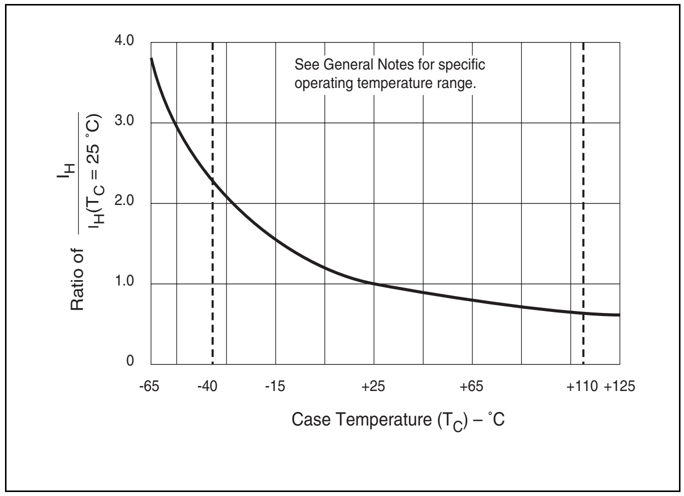


Figure E5.13 Normalized DC Holding Current versus Case Temperature

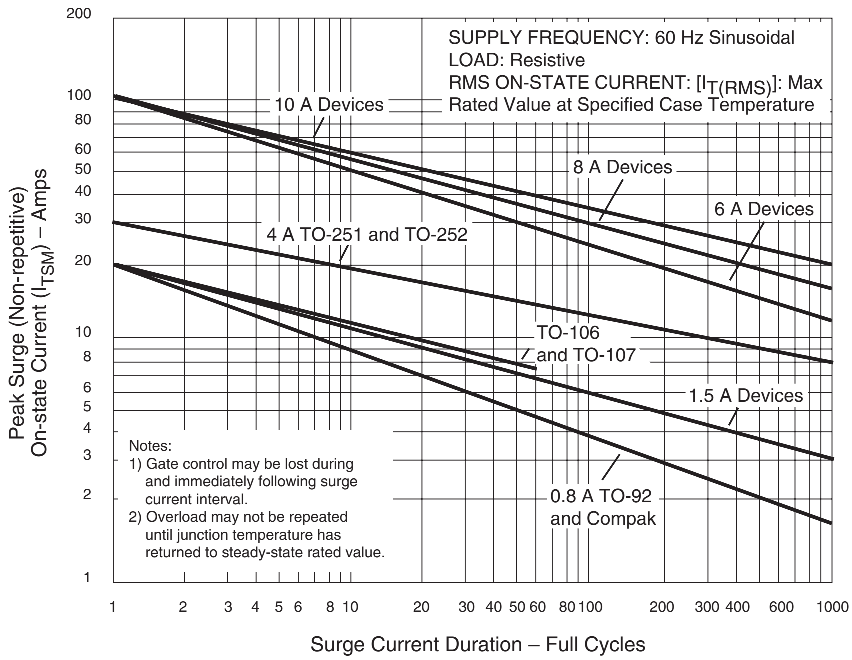


Figure E5.14 Peak Surge On-state Current versus Surge Current Duration

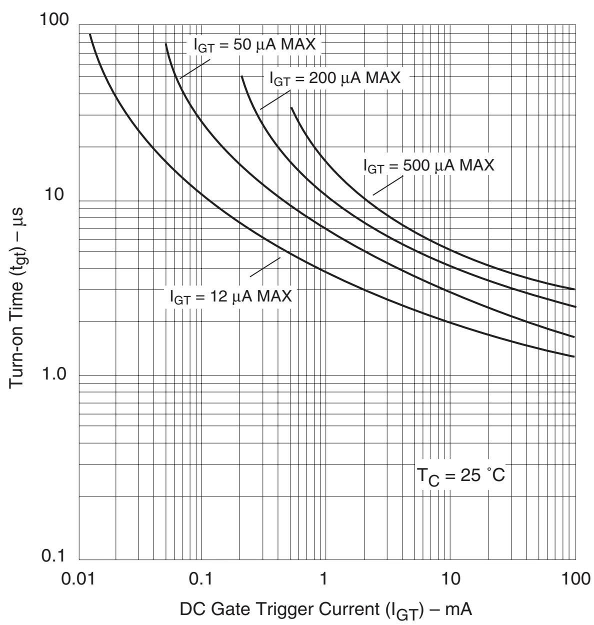


Figure E5.15 Typical Turn-on Time versus Gate Trigger Current

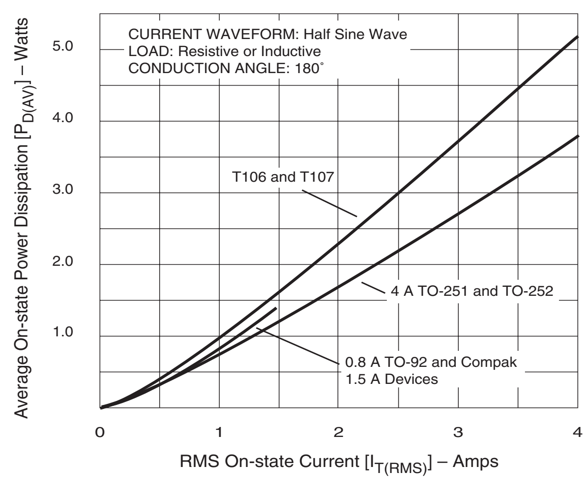


Figure E5.16 Power Dissipation (Typical) versus RMS On-state Current

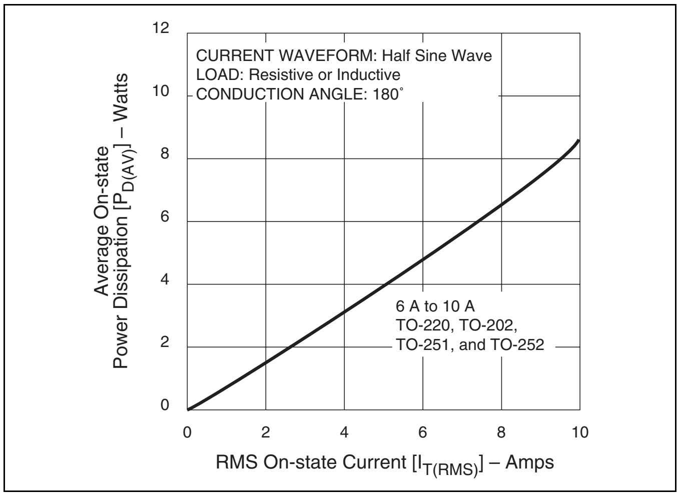


Figure E5.17 Power Dissipation (Typical) versus RMS On-state Current

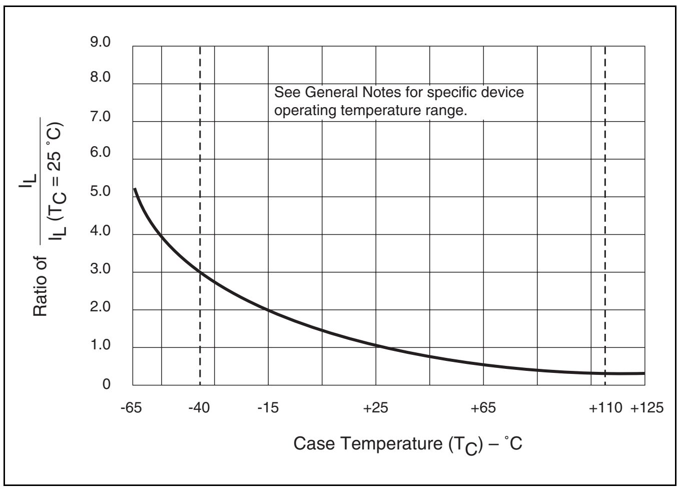


Figure E5.18 Normalized DC Latching Current versus Case Temperature

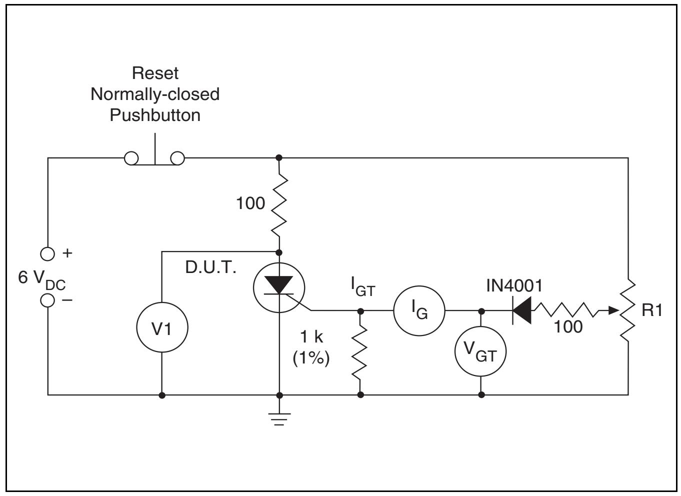


Figure E5.19 Simple Test Circuit for Gate Trigger Voltage and Current Measurement

Note: V1 — 0 V to 10 V dc meter
V_{GT} — 0 V to 1 V dc meter
I_G — 0 mA to 1 mA dc milliammeter
R1 — 1 k potentiometer

To measure gate trigger voltage and current, raise gate voltage (V_{GT}) until meter reading V1 drops from 6 V to 1 V. Gate trigger voltage is the reading on V_{GT} just prior to V1 dropping. Gate trigger current I_{GT} can be computed from the relationship

$$I_{GT} = I_G - \frac{V_{GT}}{1000} \text{ Amps}$$

where I_G is reading (in amperes) on meter just prior to V1 dropping.

Note: I_{GT} may turn out to be a negative quantity (trigger current flows out from gate lead).

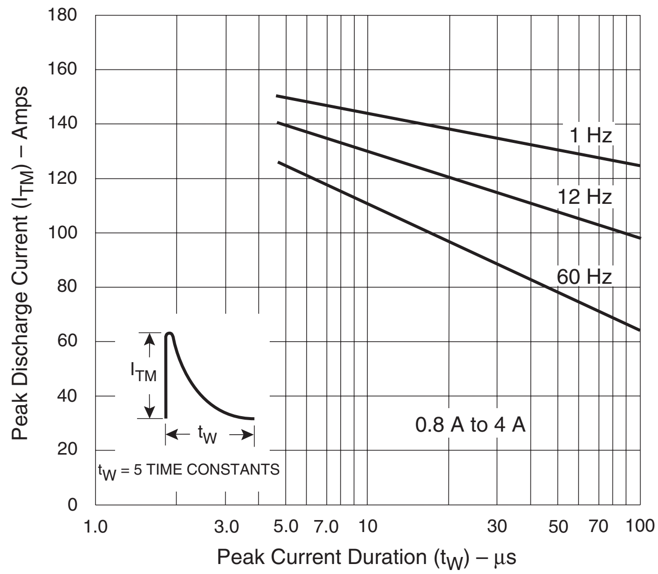


Figure E5.20 Peak Repetitive Capacitor Discharge Current

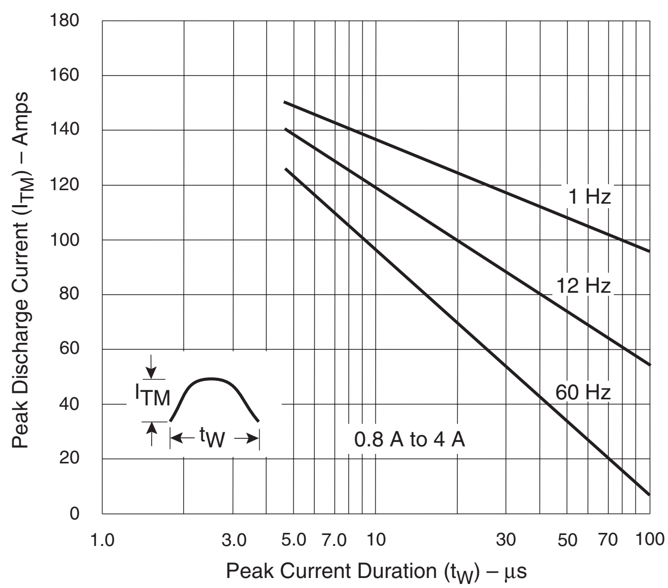


Figure E5.21 Peak Repetitive Sinusoidal Curve

Notes