

## TRIAC For High Power

### TG40E80

$I_{T(RMS)}=40A, V_{DRM}=800V$

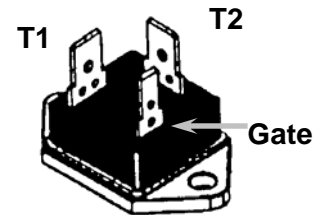
SanRex Triac **TG40E80** is specially designed use for high power AC switching application. Thanks to SanRex's new isolated diffusion technology, the Triac **TG40E80** features high  $dv/dt$ ,  $dv/dt/c$  and very low on-state voltage. These benefits make this design an extremely reliable and efficient device for use in wide variety of applications.

#### Features

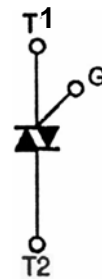
- \* High Power
- \* High Surge Current
- \* Low On-State Voltage
- \* High Commutation Performance
- \* UL registered E76102

#### Typical Applications

- \* Home Appliances
- \* Water Heaters
- \* Heater Controls
- \* Lighting Controls
- \* Temperature Controls



Isolated Fast-on Package



Internal schematic diagram

#### < Maximum Ratings >

( $T_j = 25^\circ C$  unless otherwise noted)

Symbol	Item	Conditions	Ratings	Unit
$V_{DRM}$	Repetitive Peak Off-state Voltage		800	V
$I_{T(RMS)}$	R.M.S. On-state Current	$T_C = 64^\circ C$	40	A
$I_{TSM}$	Surge On-state Current	One cycle, 60Hz, Peak, non-repetitive	420	A
$I^2 t$	$I^2 t$ (for fusing)	Value for one cycle surge current	730	$A^2 s$
$P_{GM}$	Peak Gate Power Dissipation		10	W
$P_{G(AV)}$	Average Gate Power Dissipation		1	W
$I_{GM}$	Peak Gate Current		3	A
$V_{GM}$	Peak Gate Voltage		10	V
$di/dt$	Critical Rate of Rise of On-State Current	$I_G = 100mA, V_D = 1/2V_{DRM}, di_g/dt = 1A/\mu s$	50	A/Fs
$T_j$	Operation Junction Temperature		-40 to +125	$^\circ C$
$T_{stg}$	Storage Temperature		-40 to +150	$^\circ C$
$V_{ISO}$	Isolation Breakdown Voltage	R.M.S. , A.C. 1 minute	2500	V
	Mounting Torque (M4)	Recommended value 1.0 – 1.4 N*m	1.5	N*m
	Mass	Typical Value	23	g

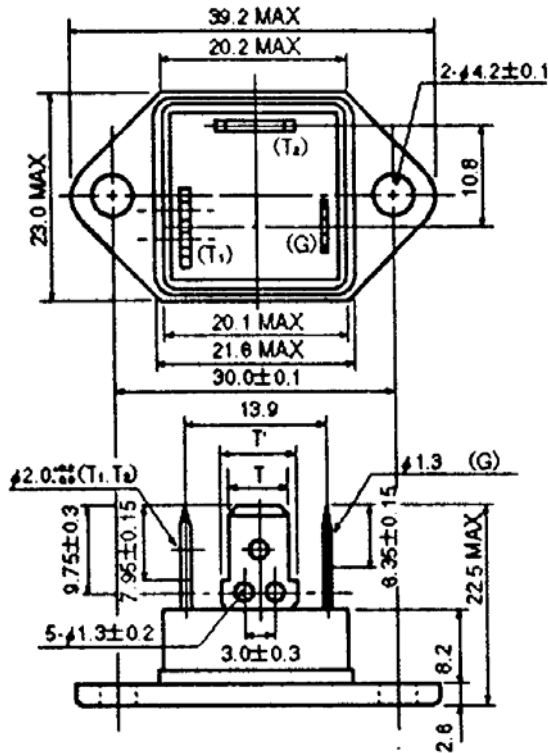
## TRIAC for High Power

## TG40E80

< Electrical Characteristics >

(T<sub>j</sub> = 25°C unless otherwise noted)

Symbol	Item	Conditions	Ratings			Unit
			Min.	Typ.	Max.	
I <sub>DRM</sub>	Repetitive Peak Off-state Current	T <sub>j</sub> = 125°C, V <sub>D</sub> = V <sub>DRM</sub>			5	mA
V <sub>TM</sub>	Peak On-State Voltage	I <sub>T</sub> = 60A, Instant measurement			1.4	V
I <sub>GT1+</sub>	QI	V <sub>D</sub> = 6V, I <sub>T</sub> = 1A			50	mA
I <sub>GT1-</sub>	QII				50	mA
I <sub>GT3+</sub>	QIV				-	mA
I <sub>GT3-</sub>	QIII				50	mA
V <sub>GT1+</sub>	QI	V <sub>D</sub> = 6V, I <sub>T</sub> = 1A			1.5	V
V <sub>GT1-</sub>	QII				1.5	V
V <sub>GT3+</sub>	QIV				-	V
V <sub>GT3-</sub>	QIII				1.5	V
V <sub>GD</sub>	Non-Trigger Gate Voltage	T <sub>j</sub> = 125°C, V <sub>D</sub> = 1/2V <sub>DRM</sub>	0.2			V
dv/dt	Critical Rate of Rise of Off-State Voltage	T <sub>j</sub> = 125°C, V <sub>D</sub> = 1/2V <sub>DRM</sub> , Exponential wave	500			V/Fs
(dv/dt) <sub>c</sub>	Critical Rate of Rise of Commutation Voltage	T <sub>j</sub> = 125°C, V <sub>D</sub> = 2/3V <sub>DRM</sub> , (di/dt) <sub>c</sub> = 10 A/ms	6			V/Fs
I <sub>H</sub>	Holding Current			30		mA
R <sub>th(j-c)</sub>	Thermal Resistance	Junction to case			1.3	°C/W



T<sub>1</sub>: TAB250 (T=6.35, T'=8.25, t=0.8)

T<sub>2</sub>: TAB250 (T=6.35, T'=8.25, t=0.8)

G: TAB187 (T=4.75, T'=5.7, t=0.8)

\* Dimensions in millimeters