

TRIAC (ISOLATED MOLD TYPE)

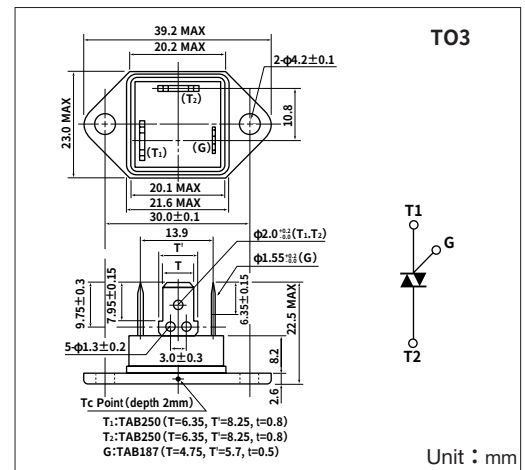
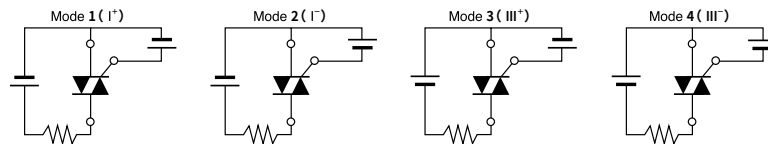
TG16C

UL:E76102(M)

SanRex Triac **TG16C** is isolated mold TRIAC suitable for wide range of applications like Copier Machines, Micro Wave Ovens, Solid State Switches, Motor Controls, Light Controls and Heater Controls.

- $I_T(AV)$ 16A
- High surge capability 160A
- Isolated Mounting (AC2500V)
- Tab Terminals

Trigger mode of the triac



Maximum Ratings

($T_j=25^{\circ}\text{C}$ unless otherwise specified)

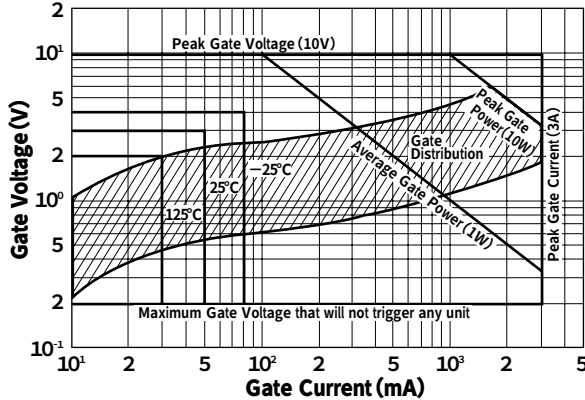
Symbol	Item	Ratings		Unit
		TG16C40	TG16C60	
V_{DRM}	Repetitive Peak Off-State Voltage	400	600	V

Symbol	Item	Conditions	Ratings	Unit
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=83^{\circ}\text{C}$	16	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, peak, non-repetitive	140/160	A
I^2t	I^2t	Value for one cycle of surge current	106	A^2S
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	$I_G=100\text{mA}$, $T_j=25^{\circ}\text{C}$, $V_D=\frac{1}{2}V_{DRM}$, $dI_G/dt=1\text{A}/\mu\text{s}$	50	$\text{A}/\mu\text{s}$
T_j	Operating Junction Temperature		-25 to +125	$^{\circ}\text{C}$
T_{stg}	Storage Temperature		-40 to +125	$^{\circ}\text{C}$
V_{iso}	Isolation Breakdown Voltage (R.M.S.)	A.C.1 minute	2500	V
	Mounting Torque (M4)	Recommended Value 1.0~1.4 (10~14)	1.5 (15)	$\text{N}\cdot\text{m}$ ($\text{kgf}\cdot\text{cm}$)
	Mass	Typical value (Excluding bolt, nut and wrapping material)	23	g

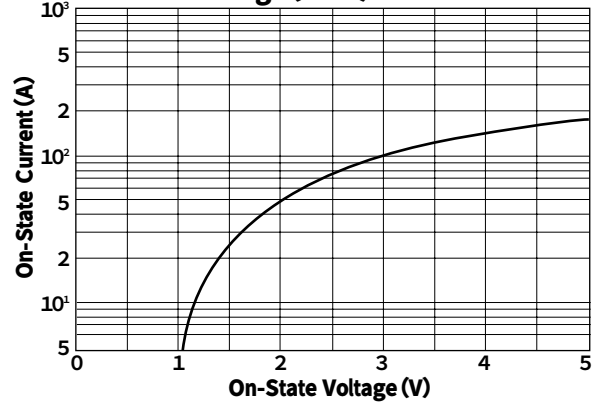
Electrical Characteristics

Symbol	Item	Conditions	Ratings	Unit
I_{DRM}	Reptitive Peak Off-State Current, max	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^{\circ}\text{C}$	3	mA
V_{TM}	Peak On-State Voltage, max	On-State Current $[\sqrt{2} \times I_{T(RMS)}]$, Inst. measurement	1.5	V
I_{GT1}^{+}	Gate Trigger Current, max	$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	50	mA
I_{GT1}^{-}		$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	50	
I_{GT3}^{+}			—	
I_{GT3}^{-}		$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	50	
V_{GT1}^{+}	Gate Trigger Voltage, max	$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	3	V
V_{GT1}^{-}		$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	3	
V_{GT3}^{+}			—	
V_{GT3}^{-}		$T_j=25^{\circ}\text{C}$, $I_T=1\text{A}$, $V_D=6\text{V}$	3	
V_{GD}	Non-Trigger Gate Voltage, min	$T_j=125^{\circ}\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	0.2	V
t_{gt}	Turn On Time, max.	$I_{T(RMS)}$, $I_G=100\text{mA}$, $V_D=\frac{1}{2}V_{DRM}$, $T_j=25^{\circ}\text{C}$, $dI_G/dt=1\text{A}/\mu\text{s}$	10	μs
dv/dt	Critical Rate of Rise on-State Voltage, min.	$T_j=125^{\circ}\text{C}$, $V_D=\frac{2}{3}V_{DRM}$, Exponential wave.	50	$\text{V}/\mu\text{s}$
$(dv/dt)_c$	Critical Rate of Rise off-State Voltage at commutation, min	$T_j=125^{\circ}\text{C}$, $V_D=\frac{2}{3}V_{DRM}$, $(di/dt)_c=8\text{A}/\text{ms}$	6	$\text{V}/\mu\text{s}$
I_H	Holding Current, typ.	$T_j=25^{\circ}\text{C}$	30	mA
$R_{th(j-c)}$	Thermal Impedance, max	Junction to case	2.0	$^{\circ}\text{C}/\text{W}$

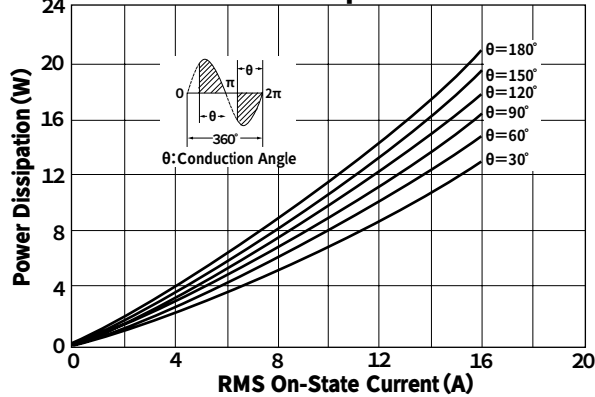
Gate Characteristics



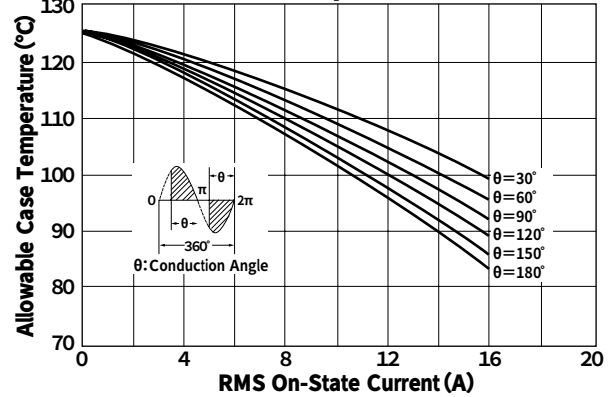
On-State Voltage (MAX)



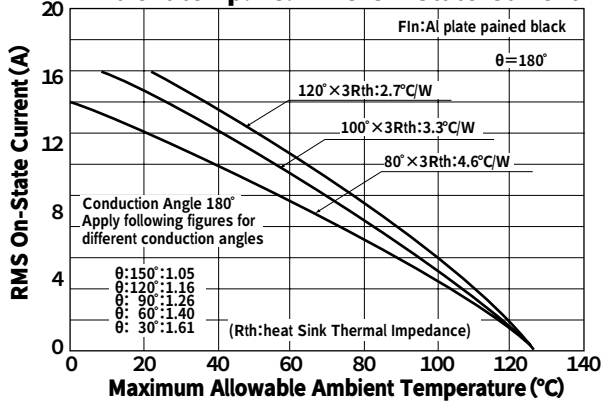
On State Current vs. Maximum Power Dissipation



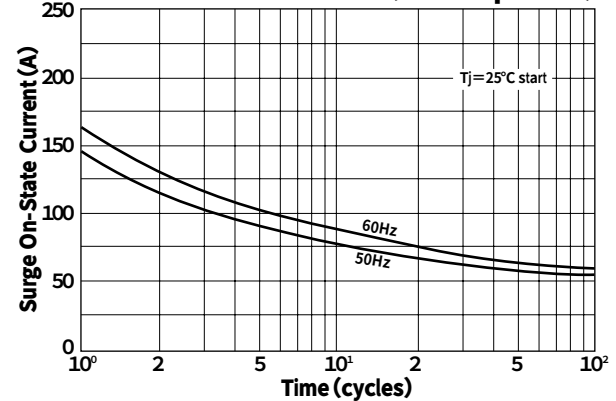
On State Current vs. Allowable Case Temperature



Ambient temp. vs. RMS On-State Current



Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance

