

TRIAC(Through Hole / Non-isolated)

TMG12D60

(Sensitive Gate)

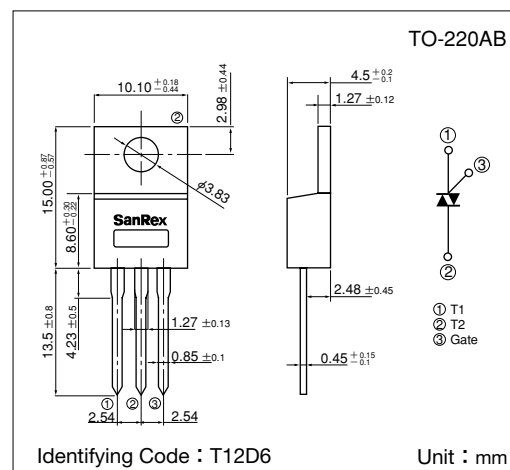
SanRex Triac TMG12D60 is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

Typical Applications

- Home Appliances : Washing Machines, Vacuum Cleaners, Rice Cookers, Micro Wave Ovens, Hair Dryers, other control applications
- Industrial Use : SMPS, Copier Machines, Motor Controls, Dimmer, SSR, Heater Controls, Vending Machines, other control applications

Features

- $I_T(RMS)=12A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

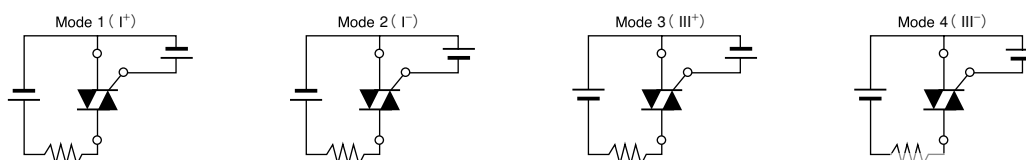
($T_j=25^{\circ}C$ unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage		600	V
$I_T(RMS)$	R.M.S. On-State Current	$T_c=100^{\circ}C$	12	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	119/130	A
I^2t	I^2t (for fusing)		71	A^2S
PGM	Peak Gate Power Dissipation		5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.5	W
I_{GM}	Peak Gate Current		2	A
V_{GM}	Peak Gate Voltage		10	V
T_j	Operating Junction Temperature		$-40 \sim +125$	$^{\circ}C$
T_{stg}	Storage Temperature		$-40 \sim +150$	$^{\circ}C$
	Mass		2	g

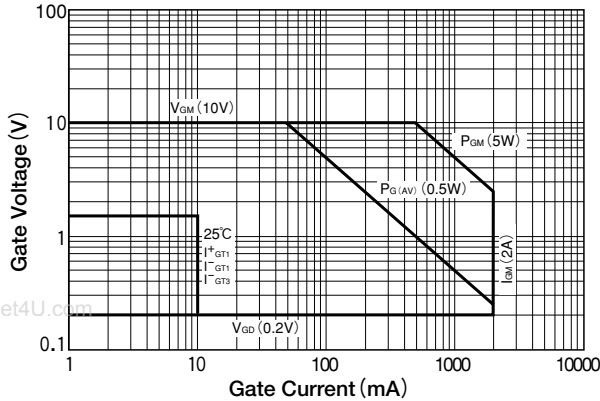
Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit
			Min.	Typ.	Max.	
IDRM	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^{\circ}C$			2	mA
VTM	Peak On-State Voltage	$I_T=20A$, Inst. measurement			1.4	V
I_{GT1}^{+}	1	$V_D=6V$, $R_L=10\Omega$			10	mA
I_{GT1}^{-}	2				10	
I_{GT3}^{+}	3				—	
I_{GT3}^{-}	4				10	
V_{GT1}^{+}	1				1.5	V
V_{GT1}^{-}	2				1.5	
V_{GT3}^{+}	3				—	
V_{GT3}^{-}	4				1.5	
VGD	Non-Trigger Gate Voltage	$T_j=125^{\circ}C$, $V_D=1/2V_{DRM}$	0.2			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation	$T_j=125^{\circ}C$, (di/dt)c=−6A/ms, $V_D=2/3V_{DRM}$	10			V/μs
IH	Holding Current			20		mA
Rth	Thermal Resistance	Junction to case			1.8	°C/W

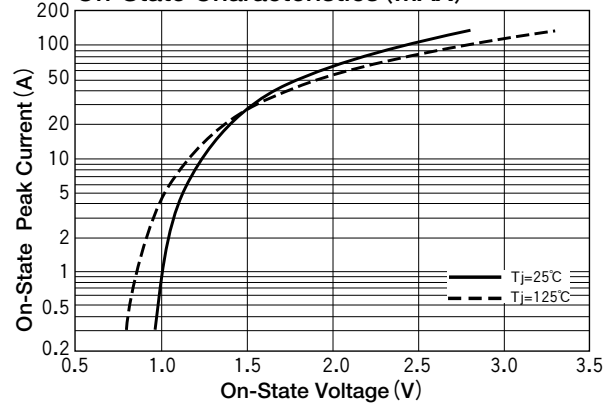
Trigger mode of the triac



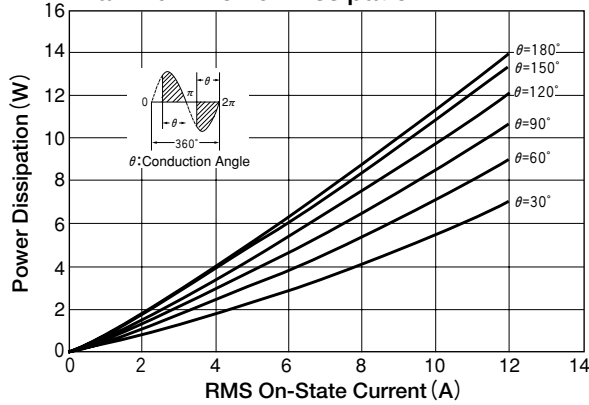
Gate Characteristics



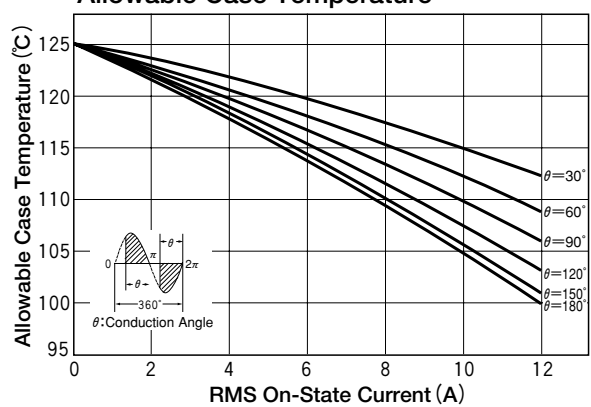
On-State Characteristics (MAX)



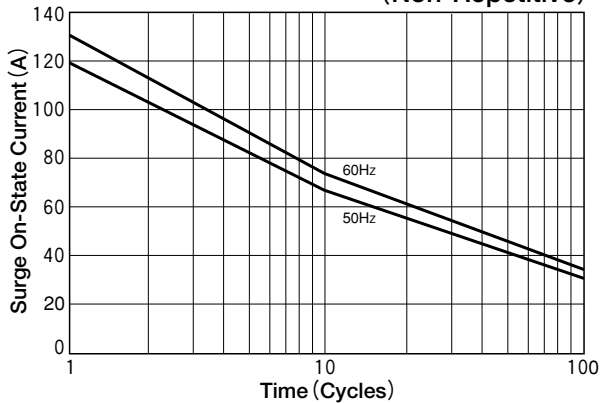
RMS On-State Current vs Maximum Power Dissipation



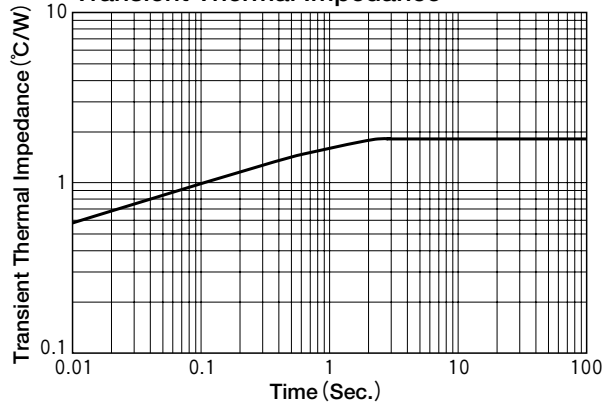
RMS On-State vs Allowable Case Temperature



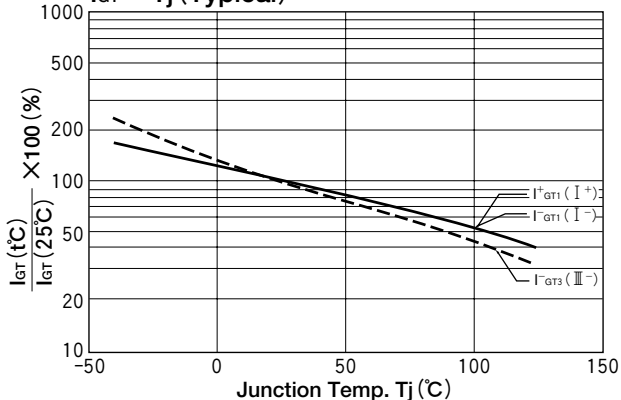
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_j$ (Typical)



$V_{GT} - T_j$ (Typical)

