

TRIAC(Through Hole / Non-isolated)

TMG12C60

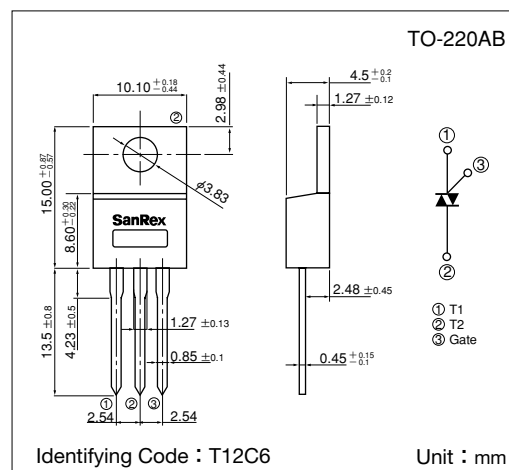
SanRex Triac TMG12C60 is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

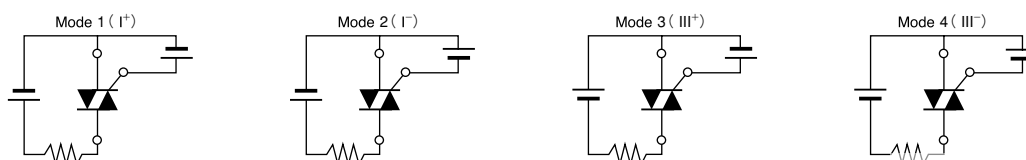
($T_j=25^{\circ}C$ unless otherwise specified)

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

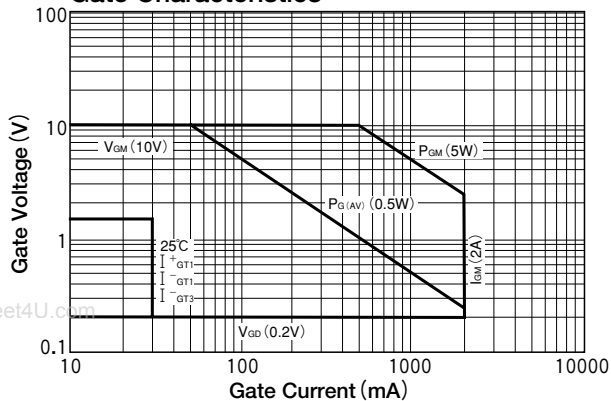
Electrical Characteristics

Symbol	Item		Reference	Ratings			Unit
				Min.	Typ.	Max.	
IDRM	Repetitive Peak Off-State Current		VD=VDRM, Single phase, half wave, Tj=125°C			2	mA
VTM	Peak On-State Voltage		IT=20A, Inst. measurement			1.4	V
IGT1 ⁺	1	Gate Trigger Current	VD=6V, RL=10 Ω			30	mA
IGT1 [−]	2					30	
IGT3 ⁺	3					—	
IGT3 [−]	4					30	
VGT1 ⁺	1	Gate Trigger Voltage				1.5	V
VGT1 [−]	2					1.5	
VGT3 ⁺	3					—	
VGT3 [−]	4					1.5	
VGD	Non-Trigger Gate Voltage		Tj=125°C, VD=1/2VDRM	0.2			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation		Tj=125°C, (di/dt)c=−6A/ms, VD=2/3VDRM	10			V/μs
IH	Holding Current				20		mA
Rth	Thermal Resistance		Junction to case			1.8	°C/W

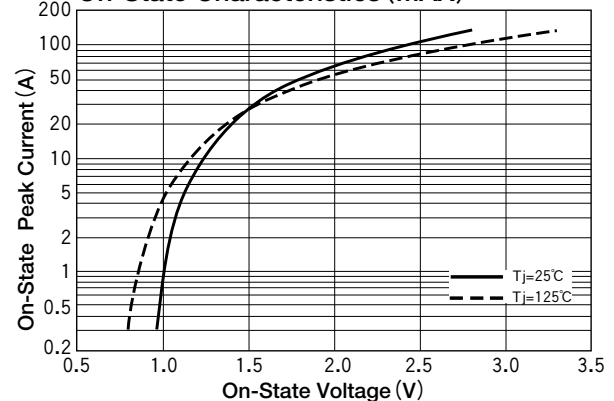
Trigger mode of the triac



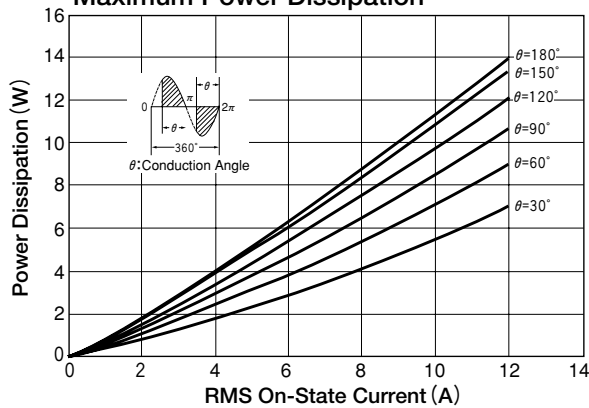
Gate Characteristics



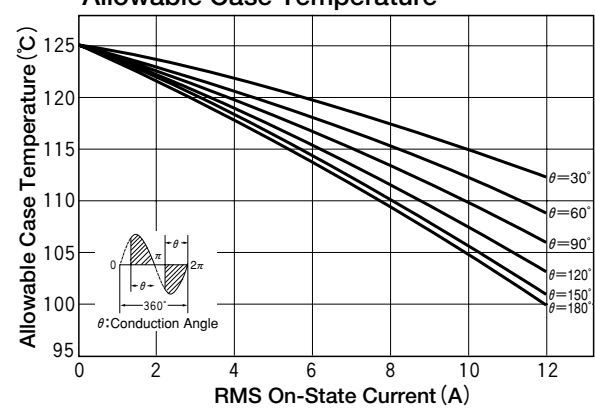
On-State Characteristics (MAX)



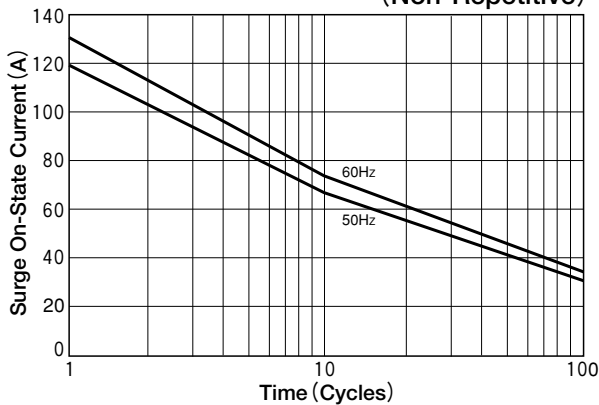
RMS On-State Current vs Maximum Power Dissipation



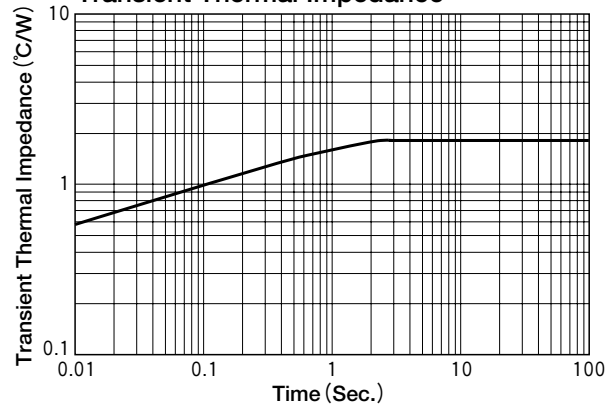
RMS On-State vs Allowable Case Temperature



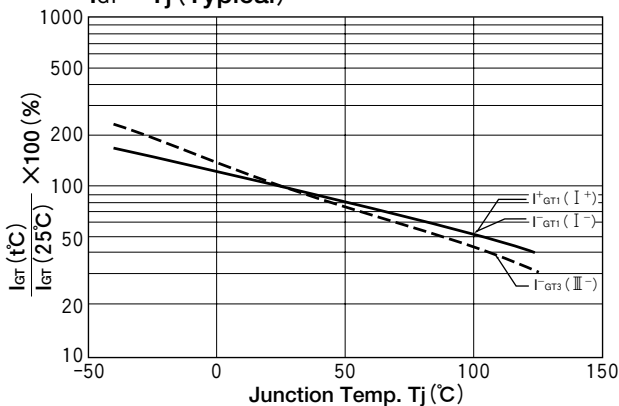
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

