

TRIAC(Through Hole / Non-isolated)

TMG12CQ60

(Tj=150℃)

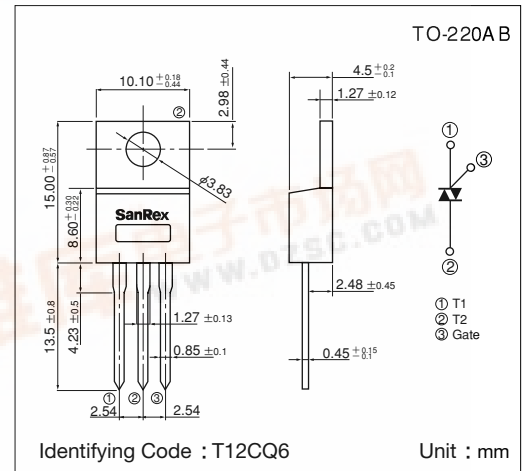
SanRex Triac **TMG12CQ60** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

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



Maximum Ratings

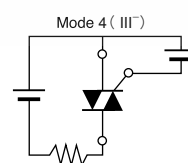
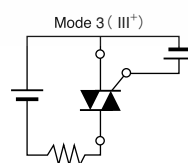
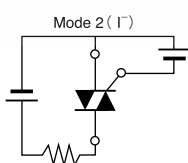
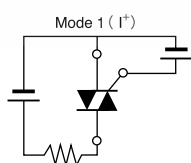
(Tj=25℃ unless otherwise specified)

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 =124℃	12	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	119/130	A
I _{pt}	I _{pt} (for fusing)		71	A ² S
P _{GM}	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 ~ +150	℃
T _{stg}	Storage Temperature		-40 ~ +150	℃
	Mass		2	g

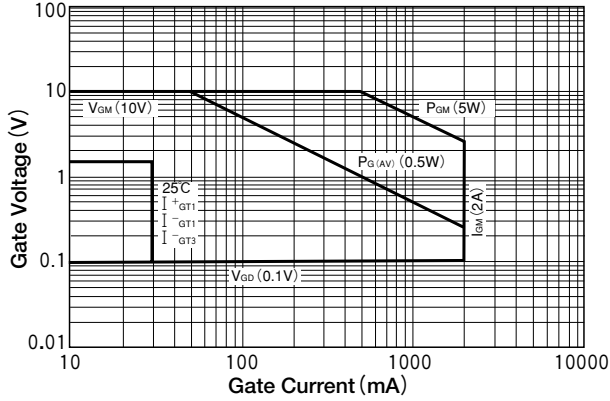
Electrical Characteristics

Symbol	Item		Reference	Ratings			Unit
				Min.	Typ.	Max.	
IDRM	Repetitive Peak Off-State Current		$V_D=V_{DRM}$, Single phase, half wave, $T_j=150^{\circ}\text{C}$			2	mA
VTM	Peak On-State Voltage		$I_T=20\text{A}$, Inst. measurement			1.4	V
I_{GT1}^{+}	1	Gate Trigger Current	$V_D=6\text{V}$, $R_L=10\Omega$			30	mA
I_{GT1}^{-}	2					30	
I_{GT3}^{+}	3					—	
I_{GT3}^{-}	4					30	
V_{GT1}^{+}	1	Gate Trigger Voltage				1.5	V
V_{GT1}^{-}	2					1.5	
V_{GT3}^{+}	3					—	
V_{GT3}^{-}	4					1.5	
VGD	Non-Trigger Gate Voltage		$T_j=150^{\circ}\text{C}$, $V_D=\frac{1}{2}V_{DRM}$	0.1			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation		$T_j=150^{\circ}\text{C}$, (di/dt)c=−6A/ms, $V_D=\frac{2}{3}V_{DRM}$	5			V/ μs
IH	Holding Current				20		mA
Rth	Thermal Resistance		Junction to case			1.8	$^{\circ}\text{C}/\text{W}$

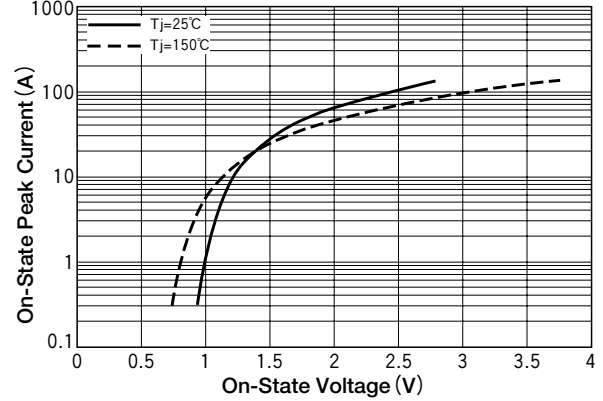
Trigger mode of the triac



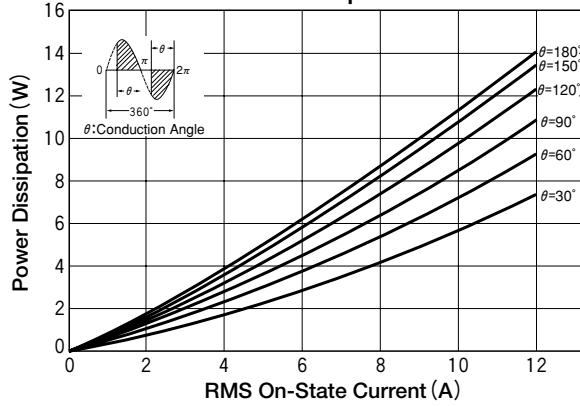
Gate Characteristics



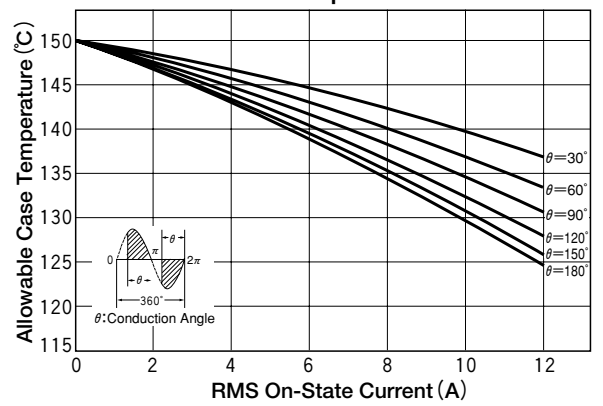
On-State Characteristics (MAX)



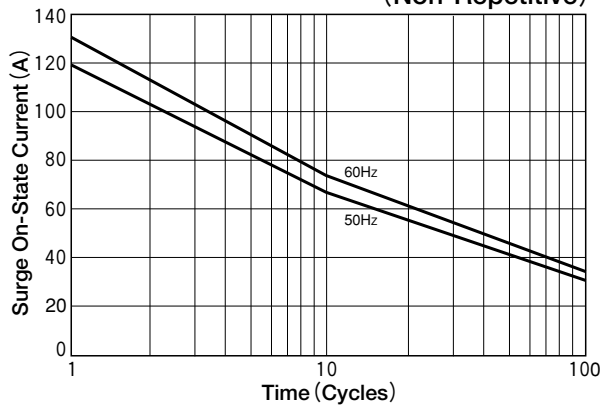
RMS On-State Current vs Maximum Power Dissipation



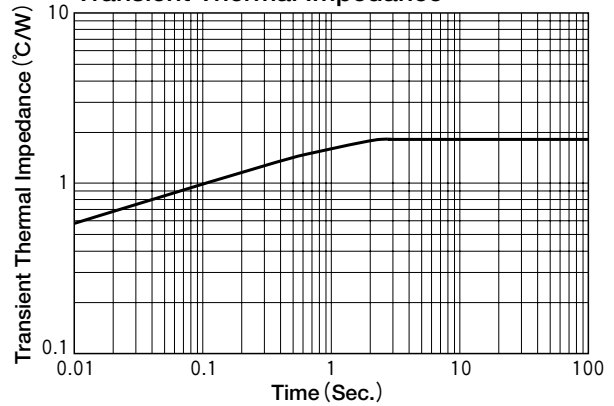
RMS On-State vs Allowable Case Temperature



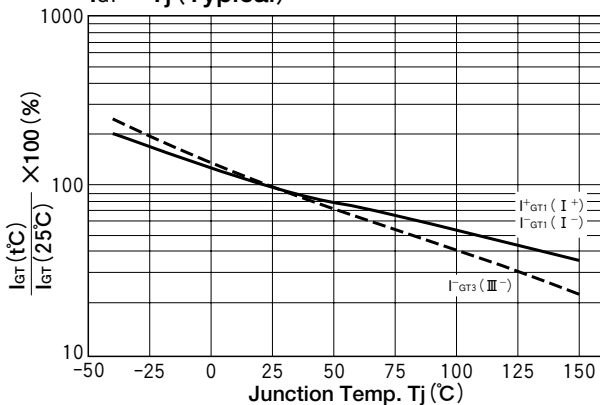
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

