

TRIAC(Surface Mount Device / Non-isolated)

TMG12CQ60H

(T_j=150°C)

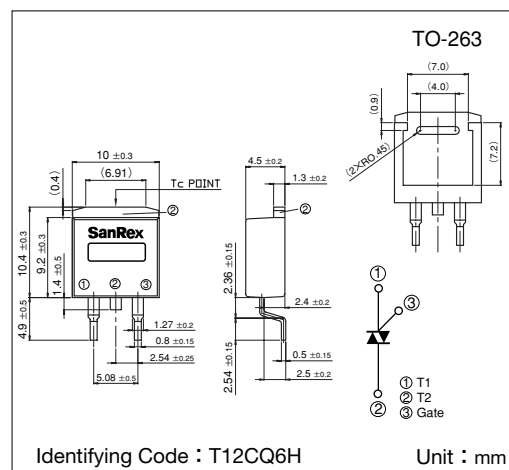
SanRex Triac TMG12CQ60H is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

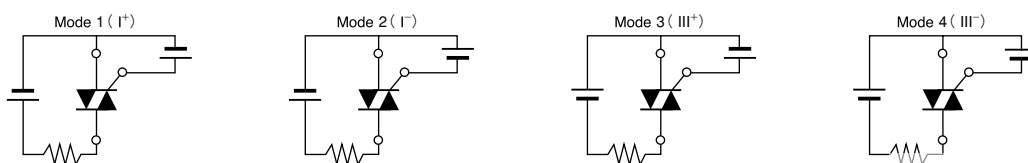
(T_j=25°C unless otherwise specified)

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 =124°C	12	A
I _{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	119/130	A
I _{ft}	I _{ft} (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	°C
T _{stg}	Storage Temperature		-40~+150	°C
	Mass		1.2	g

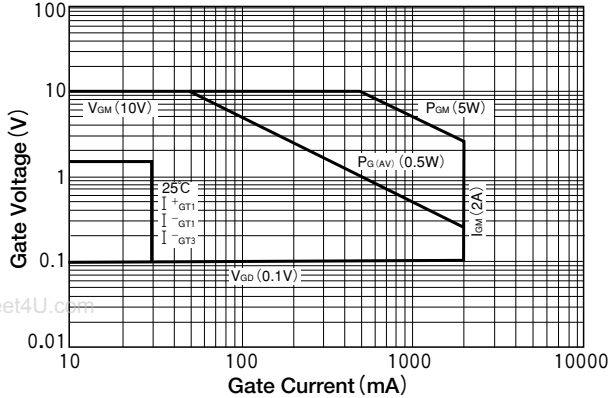
Electrical Characteristics

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	$V_D=6\text{V}$, $R_L=10\ \Omega$			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	$T_j=150^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.1			V	
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation	$T_j=150^{\circ}\text{C}$, $[di/dt]_c=-6\text{A/ms}$, $V_D=2/3V_{DRM}$	5			V/ μs	
IH	Holding Current			20		mA	
Rth	Thermal Resistance	Junction to case			1.8	$^{\circ}\text{C/W}$	

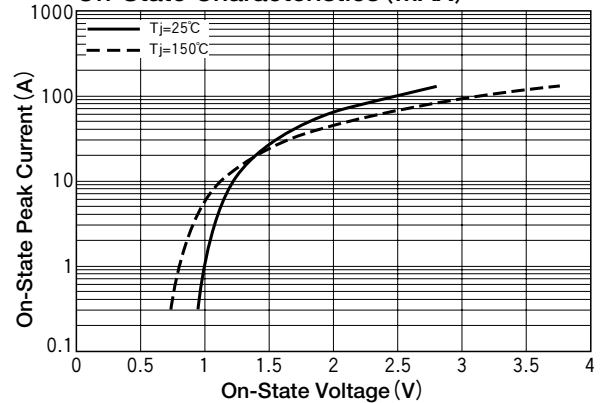
Trigger mode of the triac



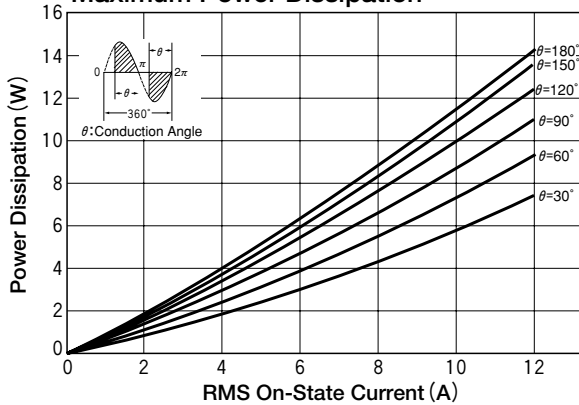
Gate Characteristics



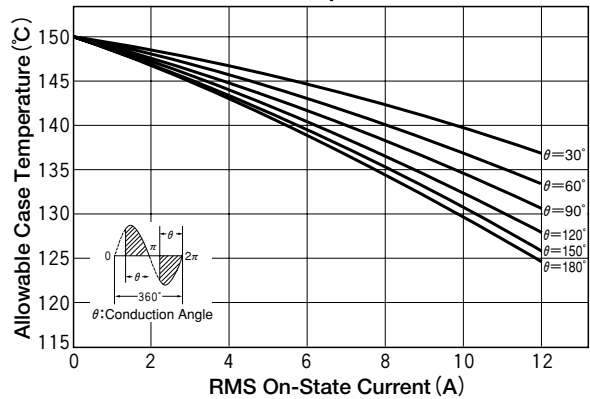
On-State Characteristics (MAX)



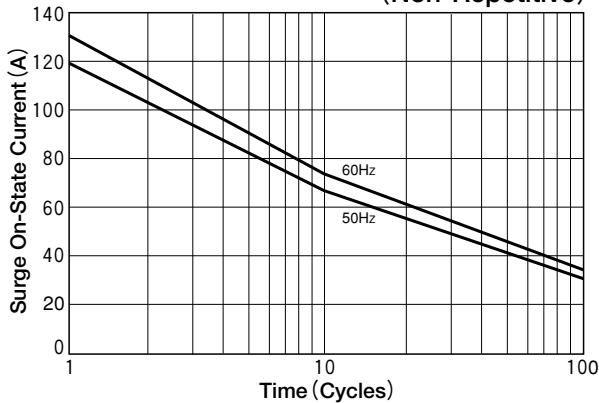
RMS On-State Current vs Maximum Power Dissipation



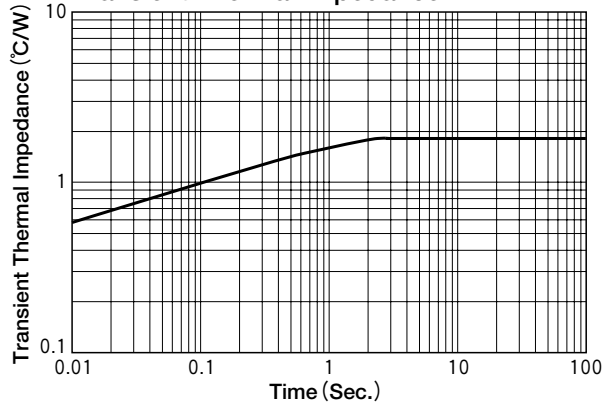
RMS On-State vs Allowable Case Temperature



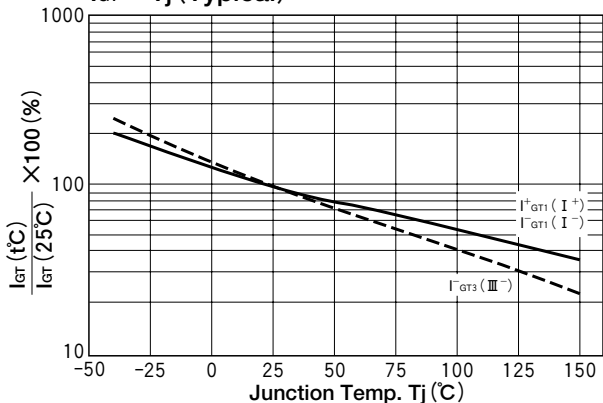
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

