

TRIAC(Surface Mount Device / Non-isolated)

TMG12D60H

(Sensitive Gate)

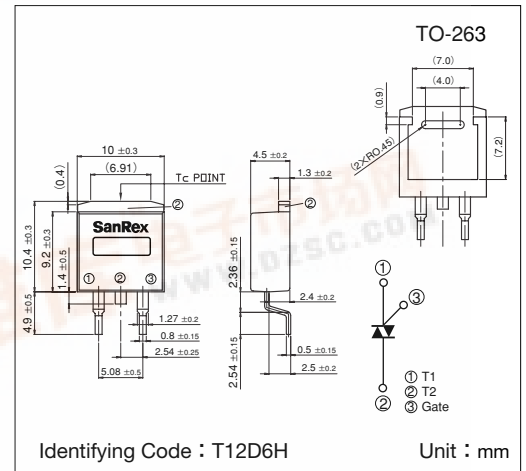
SanRex Triac **TMG12D60H** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

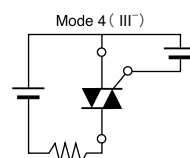
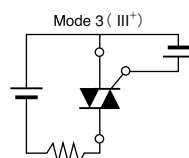
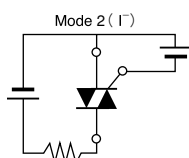
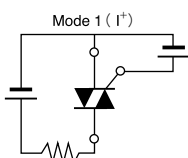
($T_j=25^{\circ}C$ unless otherwise specified)

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 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		$-40 \sim +125$	$^{\circ}C$
T_{stg}	Storage Temperature		$-40 \sim +150$	$^{\circ}C$
	Mass		2	g

Electrical Characteristics

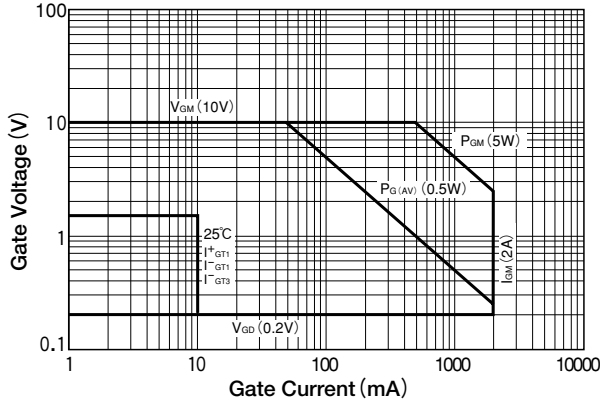
Symbol	Item		Reference	Ratings			Unit
				Min.	Typ.	Max.	
IDRM	Repetitive Peak Off-State Current		VD=VDRM, Single phase, half wave, Tj=125℃			2	mA
VTM	Peak On-State Voltage		It=20A, Inst. measurement			1.4	V
I_{GT1}^{+}	1	Gate Trigger Current	VD=6V, RL=10Ω			10	mA
I_{GT1}^{-}	2					10	
I_{GT3}^{+}	3					—	
I_{GT3}^{-}	4					10	
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		Tj=125℃, VD=1/2VDRM	0.2			V
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation		Tj=125℃, [di/dt]c=−6A/ms, VD=2/3VDRM	10			V/μs
IH	Holding Current				20		mA
Rth	Thermal Resistance		Junction to case			1.8	℃/W

Trigger mode of the triac

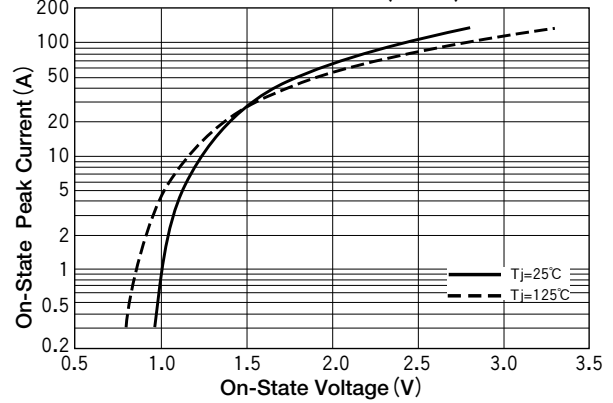


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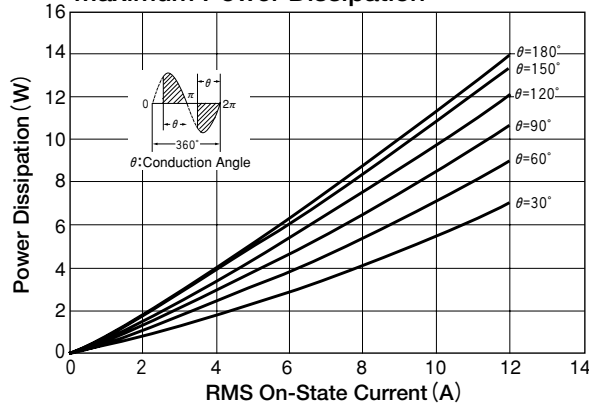
Gate Characteristics



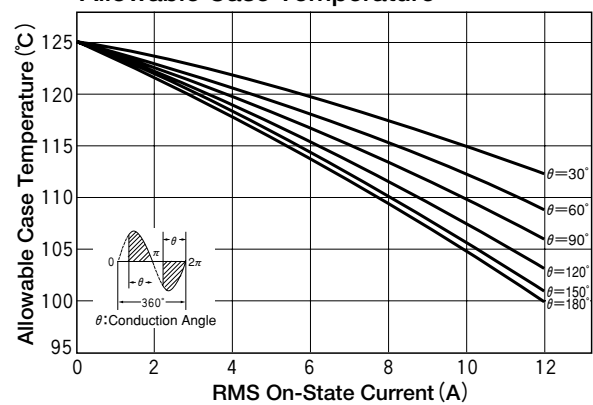
On-State Characteristics (MAX)



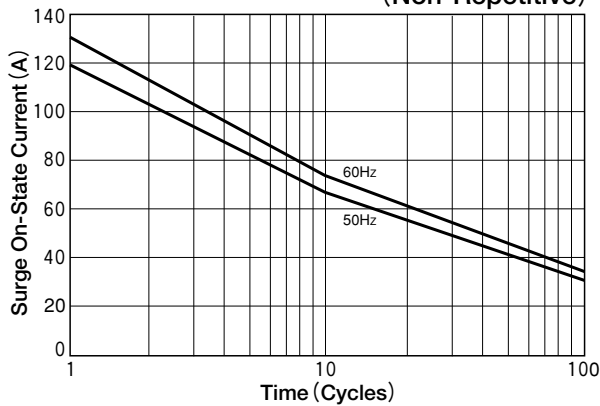
RMS On-State Current vs Maximum Power Dissipation



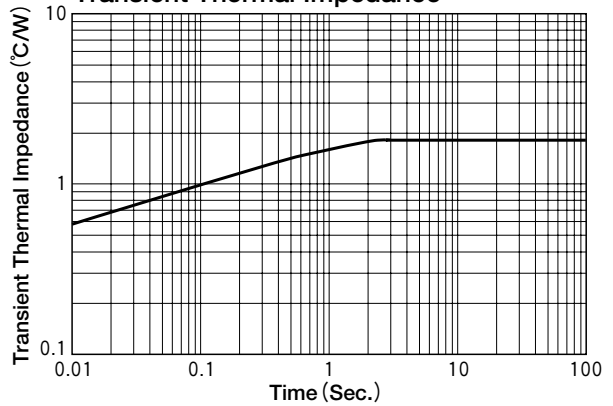
RMS On-State vs Allowable Case Temperature



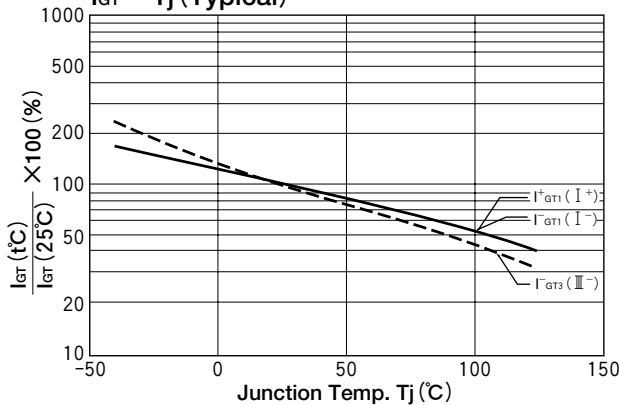
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

