

TRIAC(Through Hole / Isolated)

TMG12D60F

(Sensitive Gate)

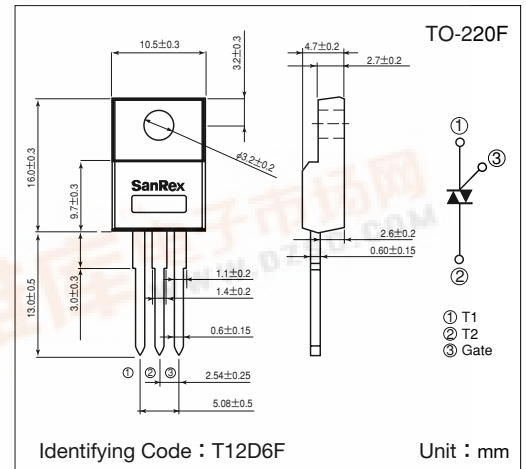
SanRex Triac TMG12D60F is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

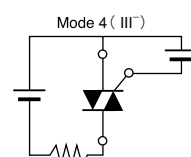
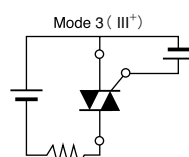
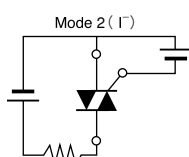
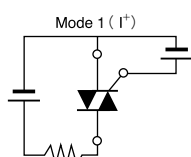
(Tj=25°C unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage		600	V
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=79^\circ C$	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
V_{ISO}	Isolation Breakdown Voltage (R.M.S.)	A.C. 1minute	1500	V
T_j	Operating Junction Temperature		-40~+125	°C
T_{stg}	Storage Temperature		-40~+150	°C
	Mass		2	g

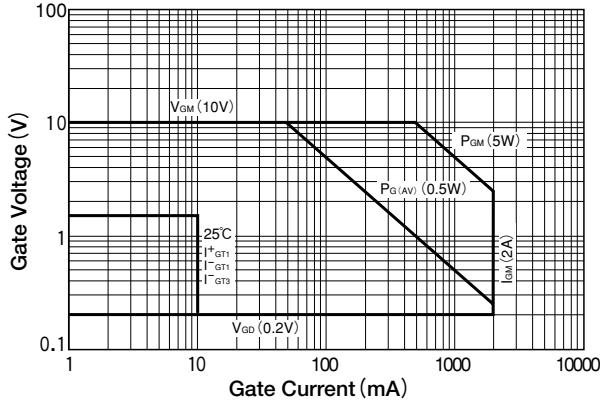
Electrical Characteristics

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		Gate Trigger Voltage			1.5	V
V_{GT1}^{-}	2					1.5	
V_{GT3}^{+}	3					—	
V_{GT3}^{-}	4					1.5	
VGD	Non-Trigger Gate Voltage	$T_j=125^{\circ}C$, $V_D=\frac{1}{2}V_{DRM}$	0.2			V	
(dv/dt)c	Critical Rate of Rise of Off-State Voltage at Commutation	$T_j=125^{\circ}C$, $[di/dt]_c=-6A/ms$, $V_D=\frac{2}{3}V_{DRM}$	10			V/ μs	
IH	Holding Current			20		mA	
Rth	Thermal Resistance	Junction to case			3.3	$^{\circ}C/W$	

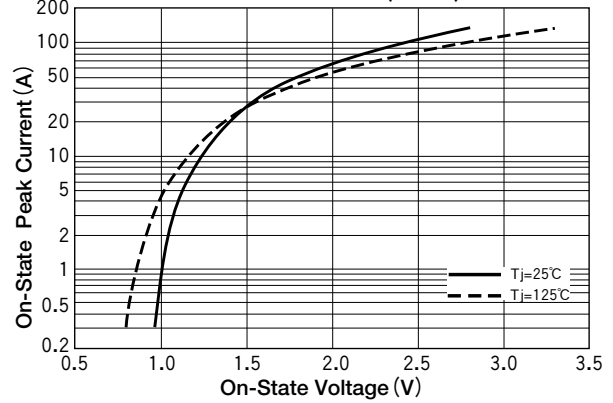
Trigger mode of the triac



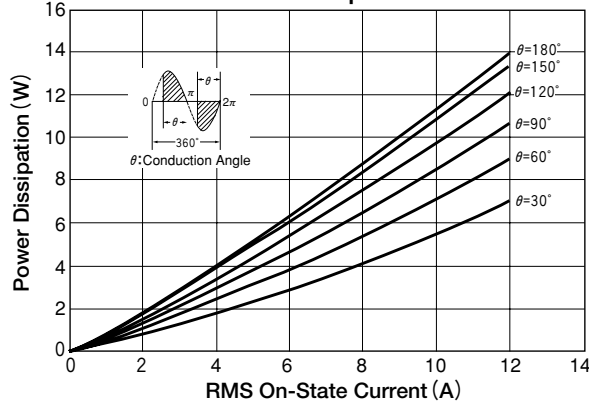
Gate Characteristics



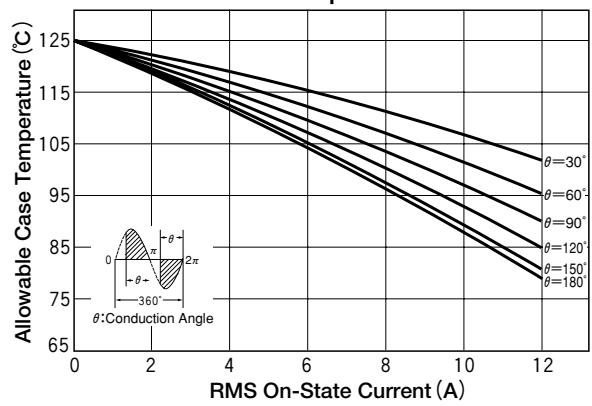
On-State Characteristics (MAX)



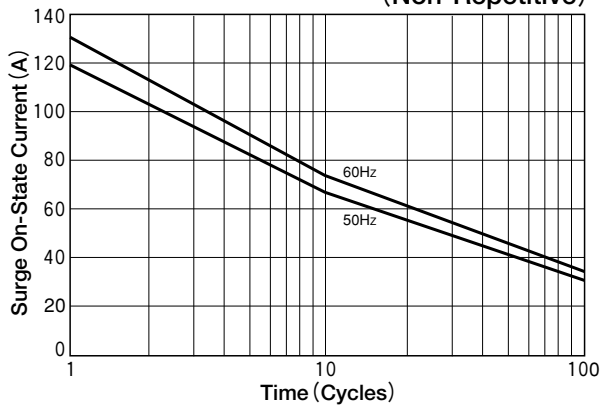
RMS On-State Current vs Maximum Power Dissipation



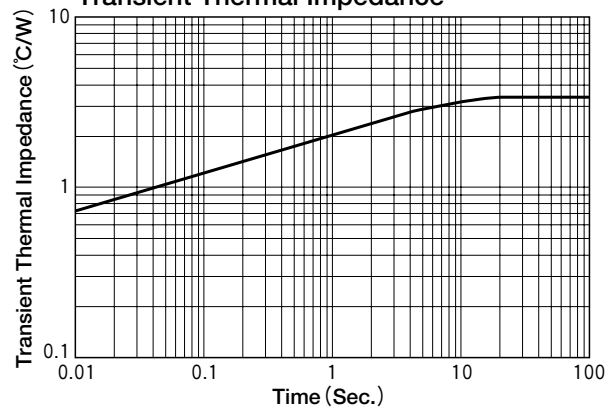
RMS On-State vs Allowable Case Temperature



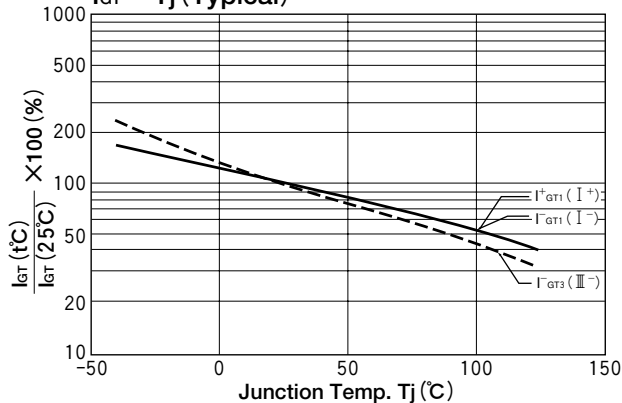
Surge On-State Current Rating (Non-Repetitive)



Transient Thermal Impedance



$I_{GT} - T_J$ (Typical)



$V_{GT} - T_J$ (Typical)

