

TRIAC(Surface Mount Device / Non-isolated)

TMG3D80D

(Sensitive Gate)

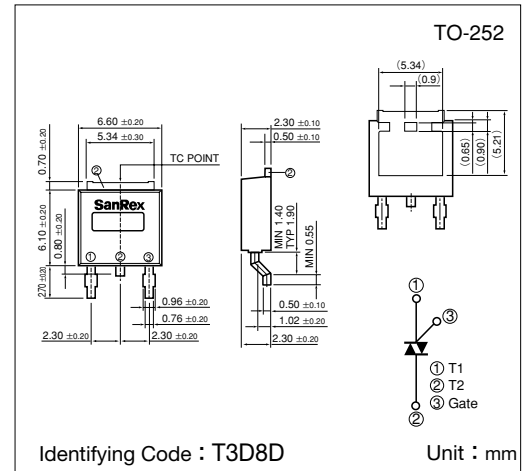
SanRex Triac TMG3D80D is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

- $I_{T(RMS)}=3A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

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

Symbol	Item	Reference	Ratings	Unit
V_{DRM}	Repetitive Peak Off-State Voltage		800	V
$I_{T(RMS)}$	R.M.S. On-State Current	$T_c=107^\circ\text{C}$	3	A
I_{TSM}	Surge On-State Current	One cycle, 50Hz/60Hz, Peak value non-repetitive	27/30	A
I^2t	I^2t (for fusing)		3.7	A^2S
P_{GM}	Peak Gate Power Dissipation		1.5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.1	W
I_{GM}	Peak Gate Current		1	A
V_{GM}	Peak Gate Voltage		7	V
T_j	Operating Junction Temperature		$-40 \sim +125$	$^\circ\text{C}$
T_{stg}	Storage Temperature		$-40 \sim +150$	$^\circ\text{C}$
	Mass		0.32	g

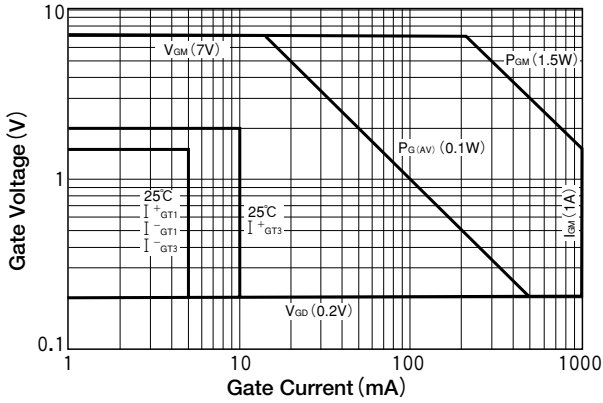
Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit	
			Min.	Typ.	Max.		
I_{DRM}	Repetitive Peak Off-State Current	$V_D=V_{DRM}$, Single phase, half wave, $T_j=125^\circ\text{C}$			1	mA	
V_{TM}	Peak On-State Voltage	$I_T=4.5A$, Inst. measurement			1.4	V	
I_{GT1}^+	Gate Trigger Current	$V_D=6V$, $R_L=10\Omega$			5	mA	
I_{GT1}^-					5		
I_{GT3}^+					10		
I_{GT3}^-					5		
V_{GT1}^+	Gate Trigger Voltage					1.5	V
V_{GT1}^-						1.5	
V_{GT3}^+						2.0	
V_{GT3}^-						1.5	
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^\circ\text{C}$, $V_D=1/2V_{DRM}$	0.2			V	
$[dv/dt]_c$	Critical Rate of Rise of Off-State Voltage at Commutation	$T_j=125^\circ\text{C}$, $[di/dt]_c=-1.5A/ms$, $V_D=400V$	5			$V/\mu s$	
I_H	Holding Current			2		mA	
$R_{th(j-c)}$	Thermal Resistance	Junction to case			3.8	$^\circ\text{C}/W$	
$R_{th(j-a)}$		Junction to ambient			60		

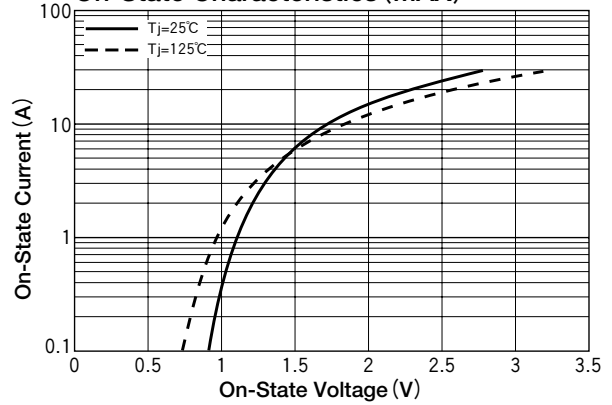
Trigger mode of the triac



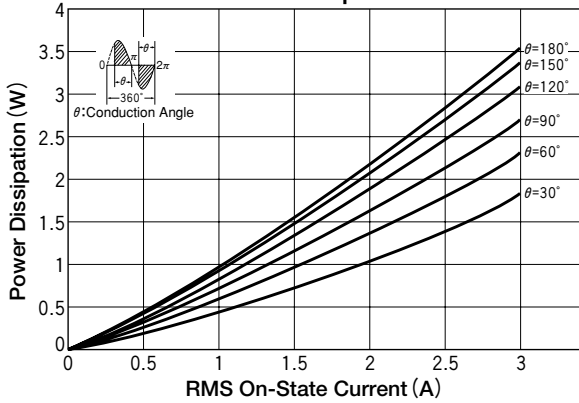
Gate Characteristics



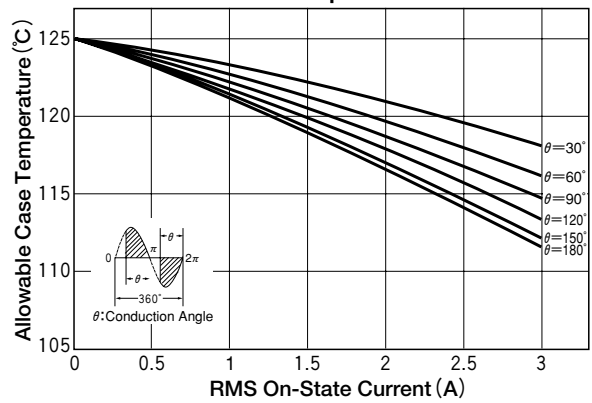
On-State Characteristics (MAX)



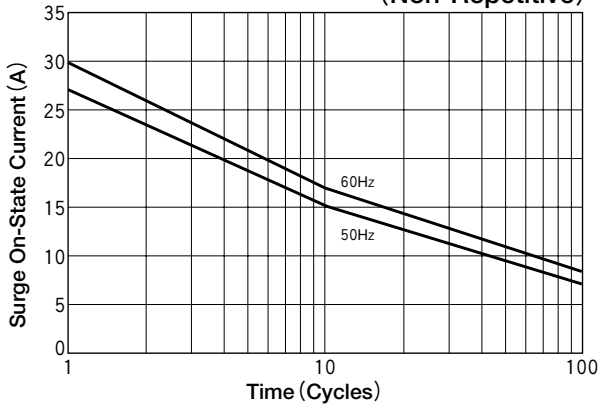
RMS On-State Current vs Maximum Power Dissipation



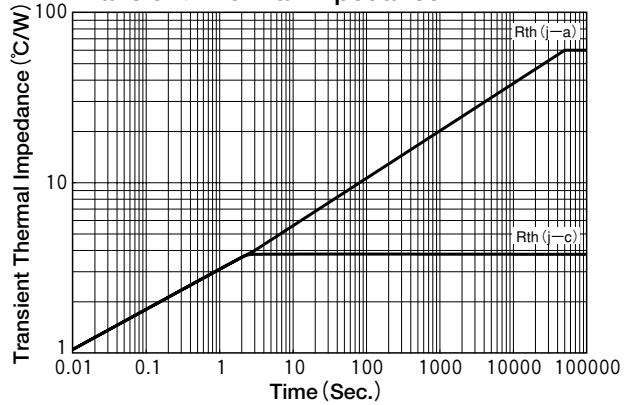
RMS On-State vs Allowable Case Temperature



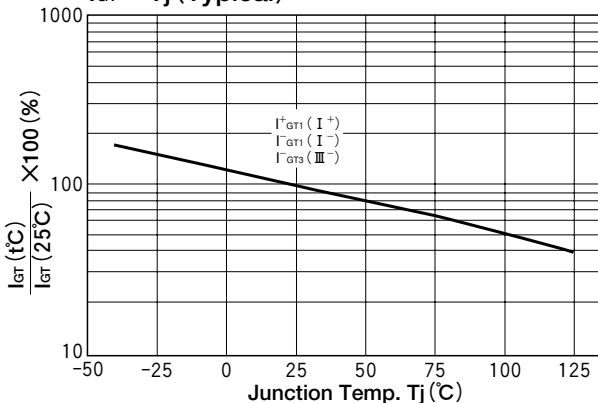
Surge On-State Current Rating (Non-Repetitive)



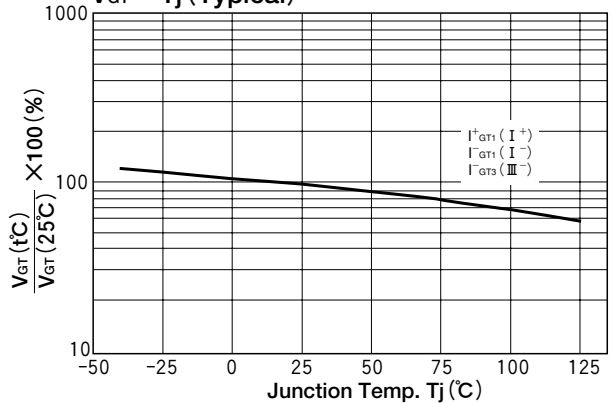
Transient Thermal Impedance



I_{GT} - T_j (Typical)



V_{GT} - T_j (Typical)



**RMS On-State vs
Allowable Ambient Temperature**