

THYRISTOR(Through Hole/Non-isolated)

SMG12C60

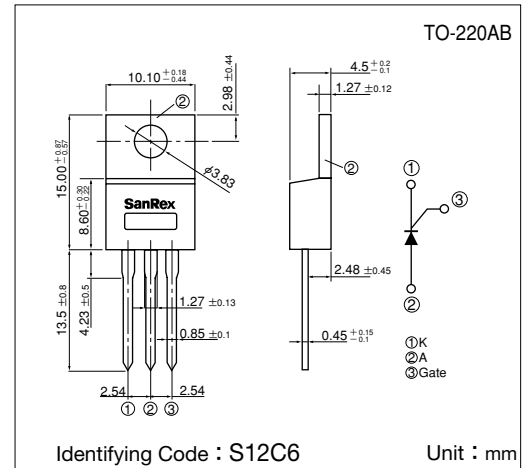
SanRex Thyristor **SMG12C60** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

Typical Applications

- Home Appliances : Electric Blankets, Starter for FL, other control applications
- Industrial Use : SMPS, Solenoid for Breakers, Motor Controls, Heater Controls, other control applications

Features

- $I_{T(AV)}=12A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



Maximum Ratings

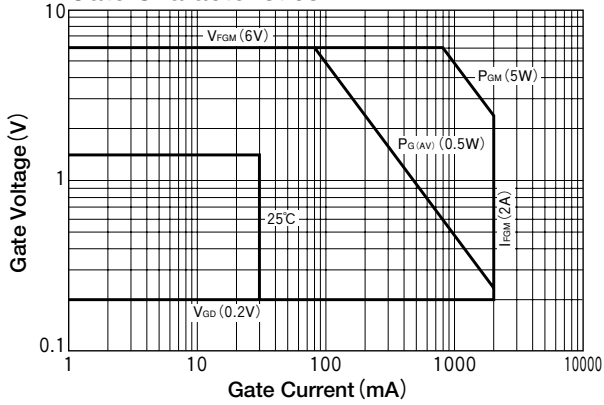
($T_j=25^{\circ}C$ unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		600	V
V_{RSM}	Non-Repetitive Peak Reverse Voltage		720	V
V_{DRM}	Repetitive Peak Off-State Voltage		600	V
$I_{T(AV)}$	Average On-State Current	Single phase, half wave, 180° conduction, $T_c=94^{\circ}C$	12	A
$I_{T(RMS)}$	R.M.S. On-State Current	Single phase, half wave, 180° conduction, $T_c=94^{\circ}C$	18.8	A
I_{TSM}	Surge On-State Current	50Hz/60Hz, $1/2$ cycle Peak value, non-repetitive	180/197	A
I^2t	I^2t		162	A^2S
P_{GM}	Peak Gate Power Dissipation		5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.5	W
I_{FGM}	Peak Gate Current		2	A
V_{FGM}	Peak Gate Voltage (Forward)			V
V_{RGM}	Peak Gate Voltage (Reverse)		10	V
T_j	Operating Junction Temperature		$-40 \sim +125$	$^{\circ}C$
T_{stg}	Storage Temperature		$-40 \sim +150$	$^{\circ}C$
	Mass		2	g

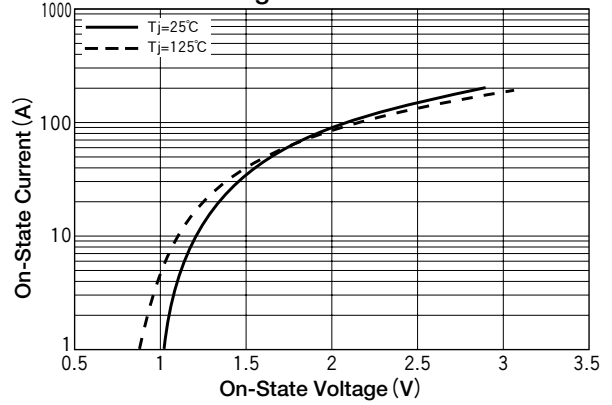
Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive Peak Off-State Current	$T_j=125^{\circ}C, V_D=V_{DRM},$			2	mA
I_{RRM}	Repetitive Peak Reverse Current	$T_j=125^{\circ}C, V_R=V_{RRM},$			2	mA
V_{TM}	Peak On-State Voltage	$I_T=35A, \text{Inst. measurement}$			1.5	V
I_{GT}	Gate Trigger Current	$V_D=6V, R_L=10\Omega$			30	mA
V_{GT}	Gate Trigger Voltage				1.4	V
V_{GD}	Non-Trigger Gate Voltage	$T_j=125^{\circ}C, V_D=1/2V_{DRM},$	0.2			V
I_H	Holding Current			15		mA
$R_{th(j-c)}$	Thermal Resistance	Junction to case			1.8	$^{\circ}C/W$

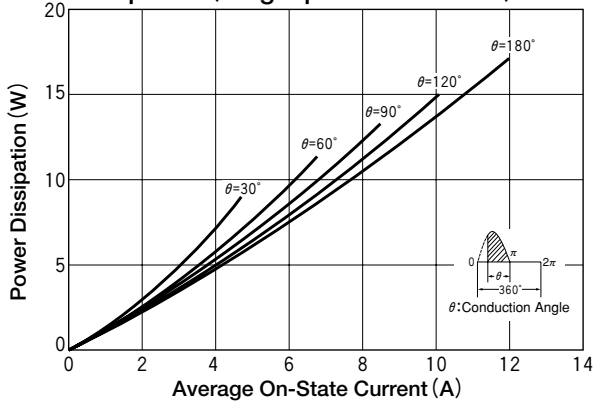
Gate Characteristics



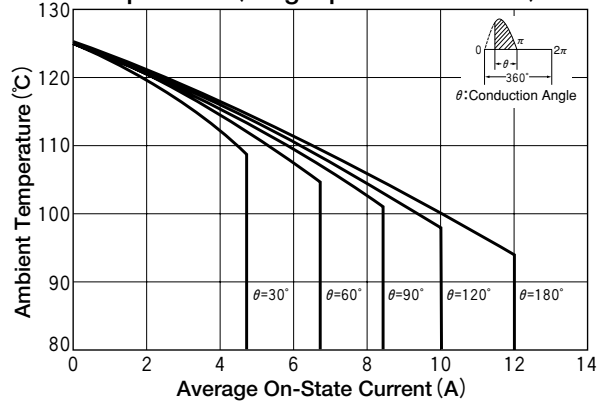
On-State Voltage Max



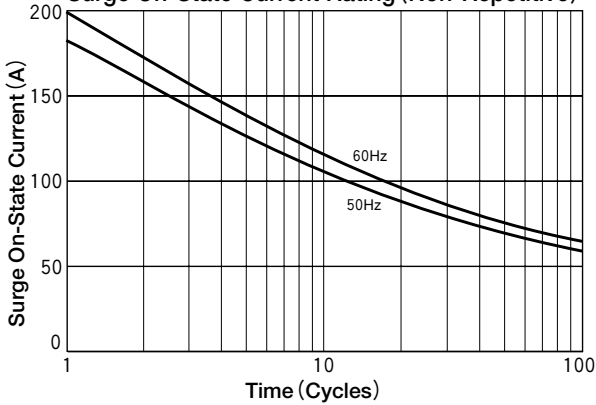
Average On-State Current vs Power Dissipation (Single phase half wave)



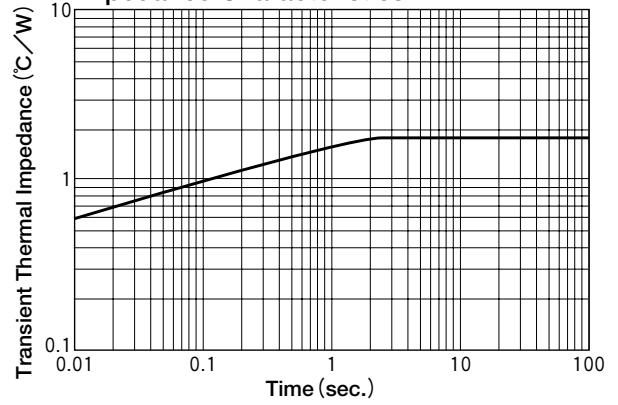
Average On-State Current vs Ambient Temperature (Single phase half wave)



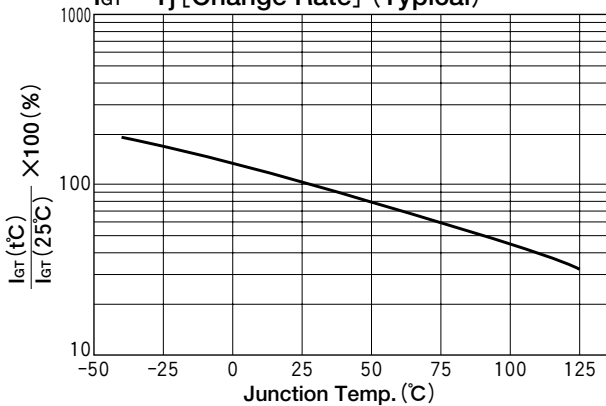
Surge On-State Current Rating (Non-Repetitive)



Maximum Transient Thermal Impedance Characteristics



$I_{GT} - T_j$ [Change Rate] (Typical)



$V_{GT} - T_j$ (Typical)

