

# THYRISTOR(Surface Mount Device/Non-isolated)

# SMG05C60A

(Sensitive Gate)

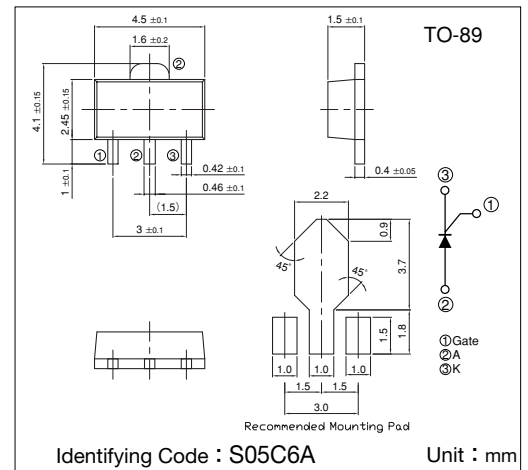
**SanRex** Thyristor SMG05C60A is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

### 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

- $I_{T(AV)}=0.5A$
- High Surge Current
- Lead-Free Package



### Maximum Ratings

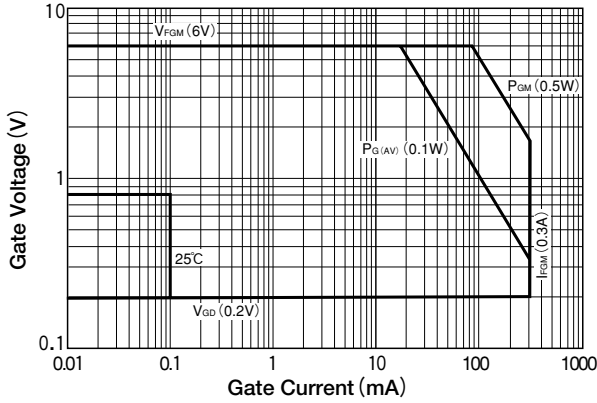
( $T_j=25^{\circ}C$  unless otherwise specified)

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, $180^{\circ}$ conduction, $T_c=60^{\circ}C$	0.5	A
$I_{T(RMS)}$	R.M.S. On-State Current	Single phase, half wave, $180^{\circ}$ conduction, $T_c=60^{\circ}C$	0.78	A
$I_{TSM}$	Surge On-State Current	50Hz/60Hz, $1/2$ cycle Peak value, non-repetitive	9.1/10	A
$I^2t$	$I^2t$		0.4	$A^2S$
$P_{GM}$	Peak Gate Power Dissipation		0.5	W
$P_{G(AV)}$	Average Gate Power Dissipation		0.1	W
$I_{FGM}$	Peak Gate Current		0.3	A
$V_{FGM}$	Peak Gate Voltage (Forward)		6	V
$V_{RGM}$	Peak Gate Voltage (Reverse)		6	V
$T_j$	Operating Junction Temperature		$-40 \sim +125$	$^{\circ}C$
$T_{stg}$	Storage Temperature		$-40 \sim +150$	$^{\circ}C$
	Mass		0.05	g

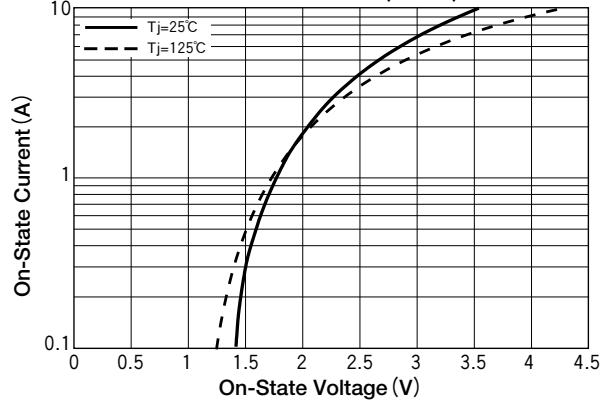
### Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit
			Min.	Typ.	Max.	
$I_{DRM}$	Repetitive Peak Off-State Current	$T_j=125^{\circ}C, V_D=V_{DRM}, R_{GK}=1k\Omega$			0.5	mA
$I_{RRM}$	Repetitive Peak Reverse Current	$T_j=125^{\circ}C, V_R=V_{RRM}, R_{GK}=1k\Omega$			0.5	mA
$V_{TM}$	Peak On-State Voltage	$I_T=1.5A$ , Inst. measurement			1.9	V
$I_{GT}$	Gate Trigger Current	$V_D=6V, R_L=100\Omega$			100	$\mu A$
$V_{GT}$	Gate Trigger Voltage				0.8	V
$V_{GD}$	Non-Trigger Gate Voltage	$T_j=125^{\circ}C, V_D=1/2V_{DRM}, R_{GK}=1k\Omega$	0.2			V
$I_H$	Holding Current			300		$\mu A$
$R_{th(j-a)}$	Thermal Resistance	Junction to ambient			70	$^{\circ}C/W$

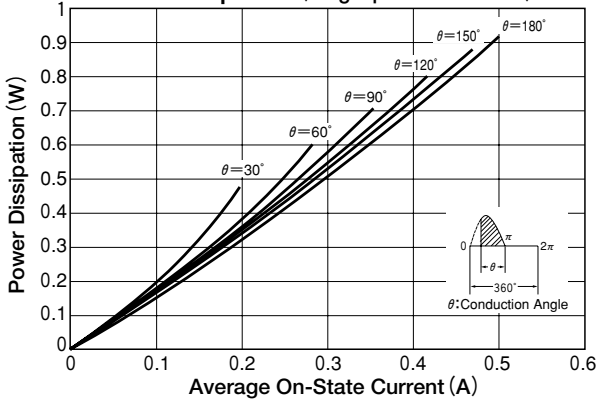
### Gate Characteristics



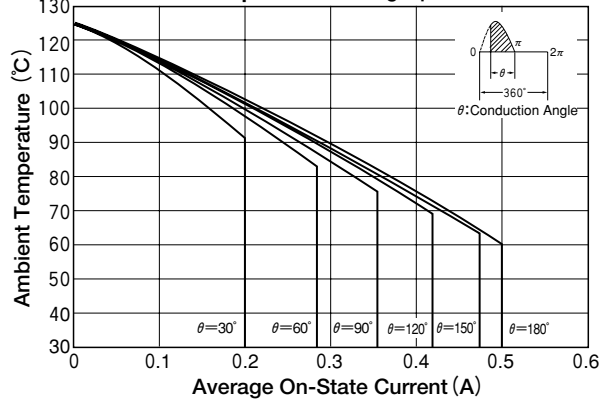
### On-State Characteristics (MAX)



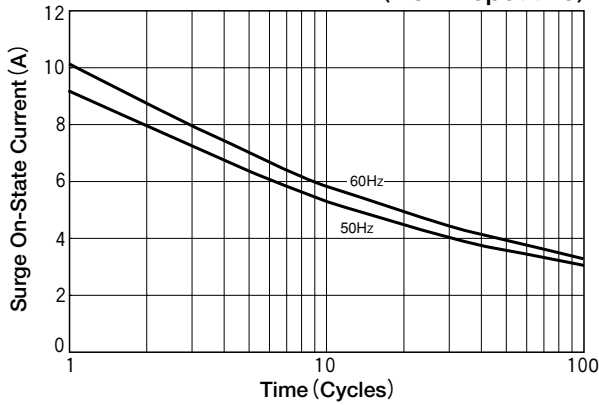
### Average On-State Current vs Power Dissipation (Single phase half wave)



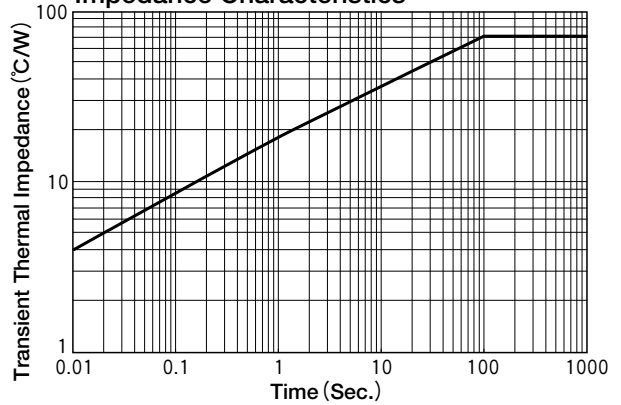
### Average On-State Current vs Ambient Temperature (Single phase half wave)



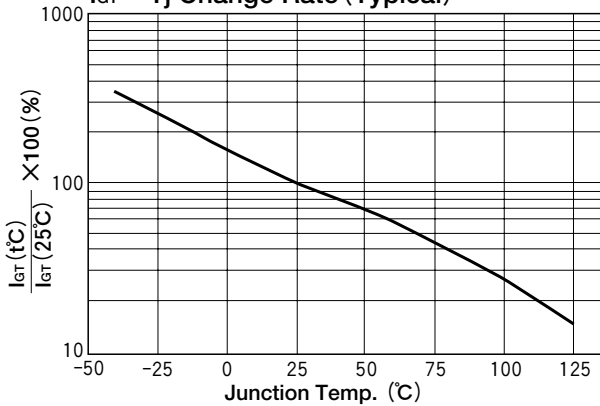
### Surge On-State Current Rating (Non-Repetitive)



### Maximum Transient Thermal Impedance Characteristics



### I<sub>GT</sub> - T<sub>j</sub> Change Rate (Typical)



### V<sub>GT</sub> - T<sub>j</sub> (Typical)

