

# THYRISTOR(Through Hole/Non-isolated)

# SMG16C60

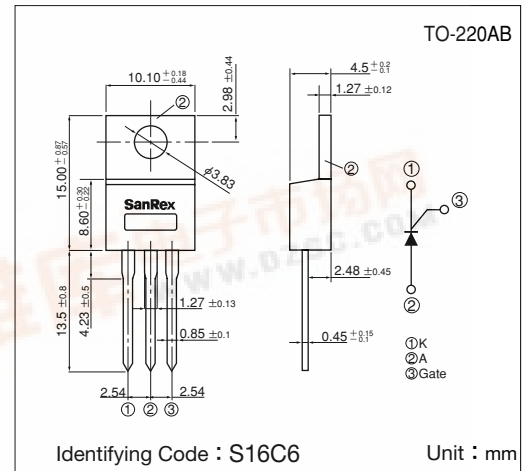
**SanRex** Thyristor **SMG16C60** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

### 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

- $I_{T(AV)}=16A$
- High Surge Current
- Low Voltage Drop
- Lead-Free Package



### Maximum Ratings

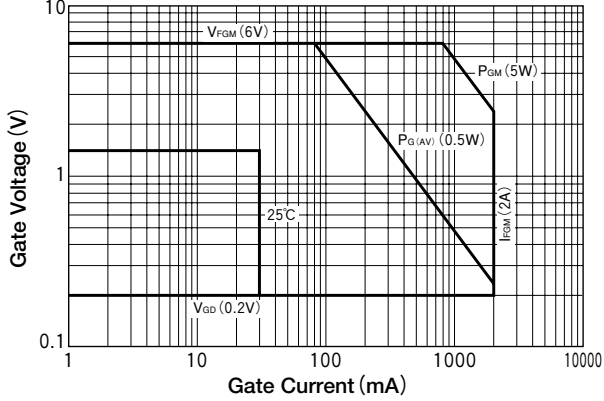
(Tj=25°C unless otherwise specified)

Symbol	Item	Reference	Ratings	Unit
V <sub>RRM</sub>	Repetitive Peak Reverse Voltage		600	V
V <sub>RSM</sub>	Non-Repetitive Peak Reverse Voltage		720	V
V <sub>DRM</sub>	Repetitive Peak Off-State Voltage		600	V
I <sub>T(AV)</sub>	Average On-State Current	Single phase, half wave, 180°, conduction, T <sub>c</sub> =93°C	16	A
I <sub>T(RMS)</sub>	R.M.S. On-State Current	Single phase, half wave, 180°, conduction, T <sub>c</sub> =93°C	25.1	A
I <sub>TSM</sub>	Surge On-State Current	50Hz/60Hz, 1/2 cycle Peak value, non-repetitive	240/263	A
I <sup>2</sup> t	I <sup>2</sup> t		288	A <sup>2</sup> S
P <sub>GM</sub>	Peak Gate Power Dissipation		5	W
P <sub>G(AV)</sub>	Average Gate Power Dissipation		0.5	W
I <sub>FGM</sub>	Peak Gate Current		2	A
V <sub>FGM</sub>	Peak Gate Voltage (Forward)		6	V
V <sub>RGM</sub>	Peak Gate Voltage (Reverse)		10	V
T <sub>j</sub>	Operating Junction Temperature		-40~+125	°C
T <sub>stg</sub>	Storage Temperature		-40~+150	°C
	Mass		2	g

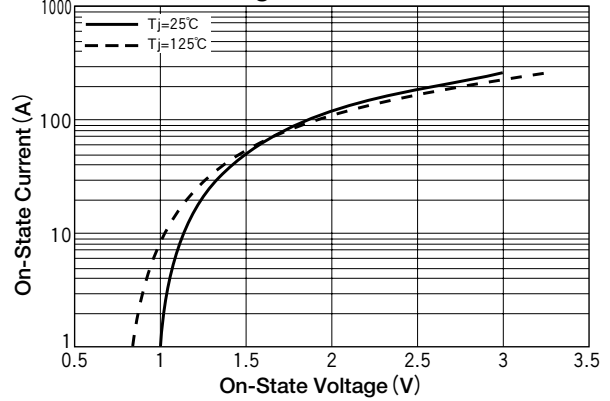
### Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit
			Min.	Typ.	Max.	
I <sub>DRM</sub>	Repetitive Peak Off-State Current	T <sub>j</sub> =125°C, V <sub>D</sub> =V <sub>DRM</sub> ,			2	mA
I <sub>RRM</sub>	Repetitive Peak Reverse Current	T <sub>j</sub> =125°C, V <sub>R</sub> =V <sub>RRM</sub> ,			2	mA
V <sub>TM</sub>	Peak On-State Voltage	I <sub>T</sub> =50A, Inst. measurement			1.5	V
I <sub>GT</sub>	Gate Trigger Current	V <sub>D</sub> =6V, R <sub>L</sub> =10 Ω			30	mA
V <sub>GT</sub>	Gate Trigger Voltage				1.4	V
V <sub>GD</sub>	Non-Trigger Gate Voltage	T <sub>j</sub> =125°C, V <sub>D</sub> =1/2V <sub>DRM</sub> ,	0.2			V
I <sub>H</sub>	Holding Current			15		mA
R <sub>th(j-c)</sub>	Thermal Resistance	Junction to case			1.4	°C/W

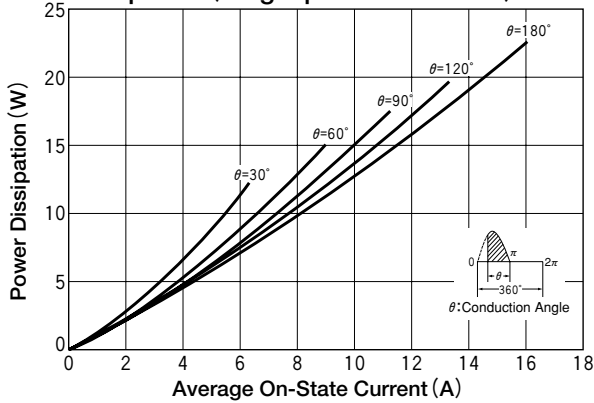
### Gate Characteristics



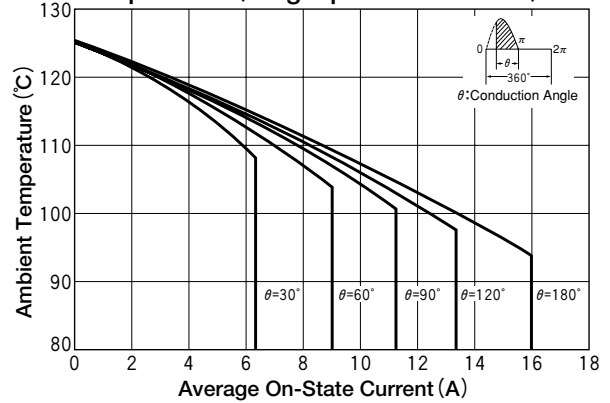
### On-State Voltage Max



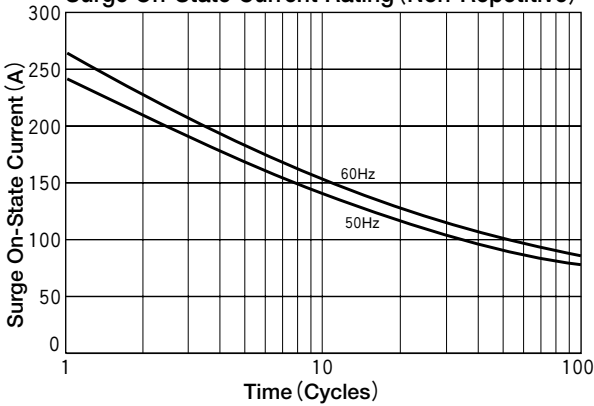
### Average On-State Current vs Power Dissipation (Single phase half wave)



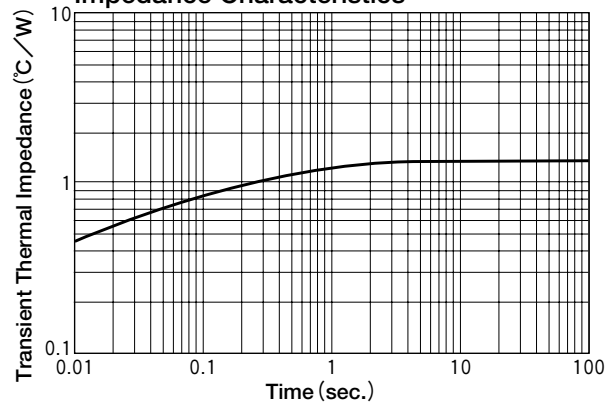
### Average On-State Current vs Ambient Temperature (Single phase half wave)



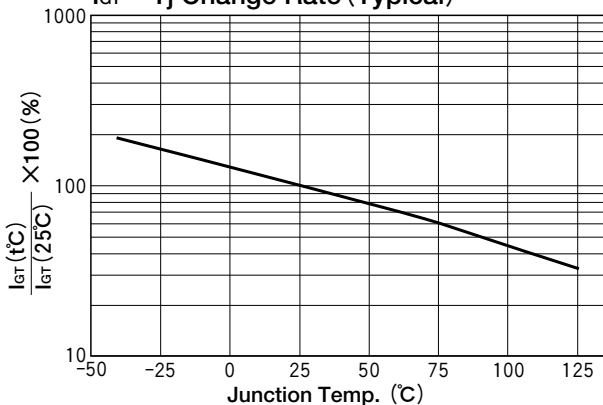
### Surge On-State Current Rating (Non-Repetitive)



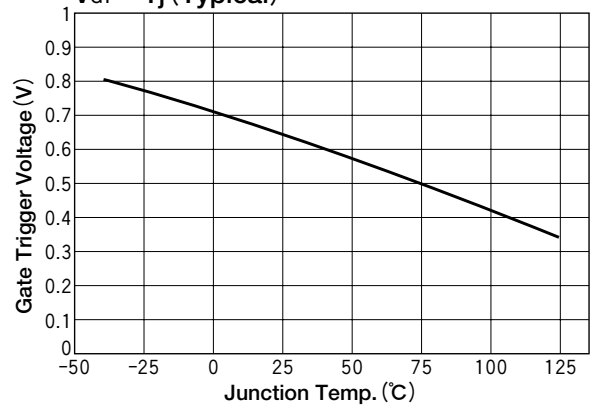
### Maximum Transient Thermal Impedance Characteristics



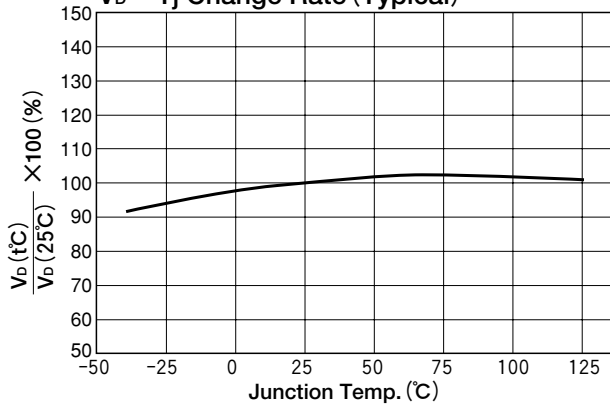
### I<sub>GT</sub> - T<sub>J</sub> Change Rate (Typical)



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



$V_D - T_j$  Change Rate (Typical)



$V_R - T_j$  Change Rate (Typical)

