

THYRISTOR(Surface Mount Device/Non-isolated)

SMG12C60H

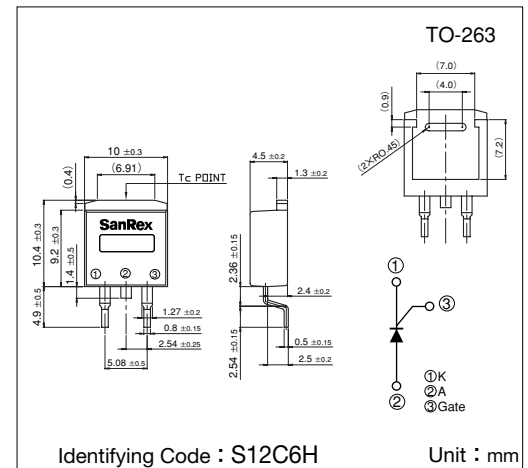
SanRex Thyristor **SMG12C60H** is designed for full wave AC control applications. It can be used as an ON/OFF function or for phase control operation.

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

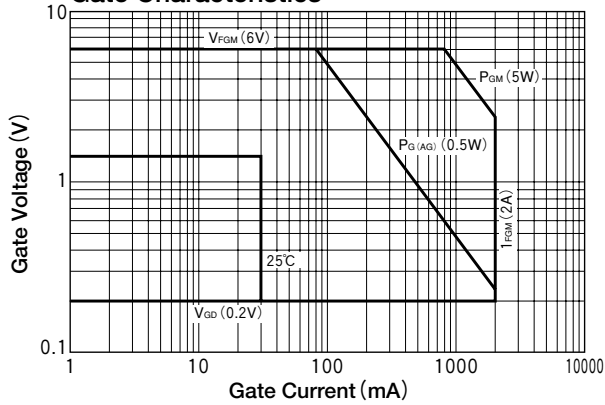
(T_j=25°C unless otherwise specified)

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°C	12	A
I _{T(RMS)}	R.M.S. On-State Current	Single phase, half wave, 180°, conduction, T _c =94°C	18.8	A
I _{TSM}	Surge On-State Current	50Hz/60Hz, 1/2 cycle Peak value, non-repetitive	180/197	A
I ² _t	I ² _t		167	A ² S
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)		6	V
V _{RGM}	Peak Gate Voltage (Reverse)		10	V
T _j	Operating Junction Temperature		-40~+125	°C
T _{stg}	Storage Temperature		-40~+150	°C
	Mass		1.2	g

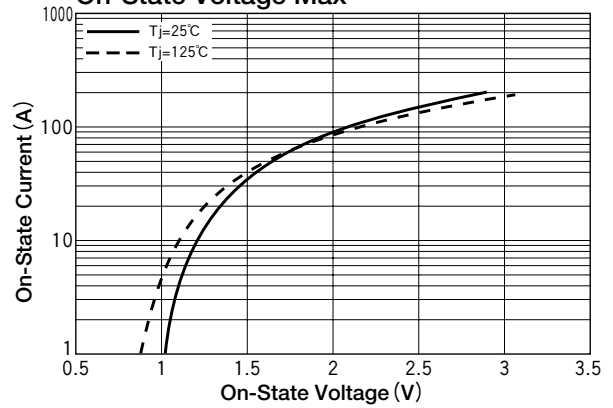
Electrical Characteristics

Symbol	Item	Reference	Ratings			Unit
			Min.	Typ.	Max.	
I _{DRM}	Repetitive Peak Off-State Current	T _j =125°C, V _D =V _{DRM}			2	mA
I _{RRM}	Repetitive Peak Reverse Current	T _j =125°C, V _R =V _{RRM}			2	mA
V _{TM}	Peak On-State Voltage	I _T =35A, Inst. measurement			1.5	V
I _{GT}	Gate Trigger Current	V _D =6V, R _L =10 Ω			30	mA
V _{GT}	Gate Trigger Voltage				1.4	V
V _{GD}	Non-Trigger Gate Voltage	T _j =125°C, V _D =1/2 V _{DRM}	0.2			V
I _H	Holding Current			15		mA
R _{th(j-c)}	Thermal Resistance	Junction to case			1.8	°C/W

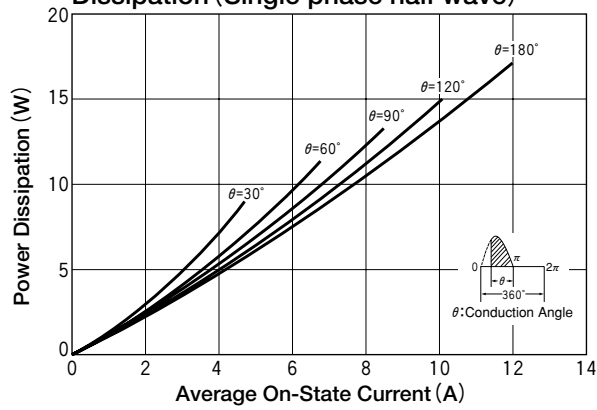
Gate Characteristics



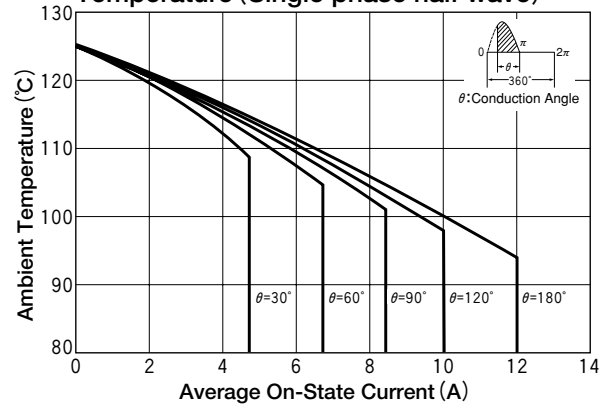
On-State Voltage Max



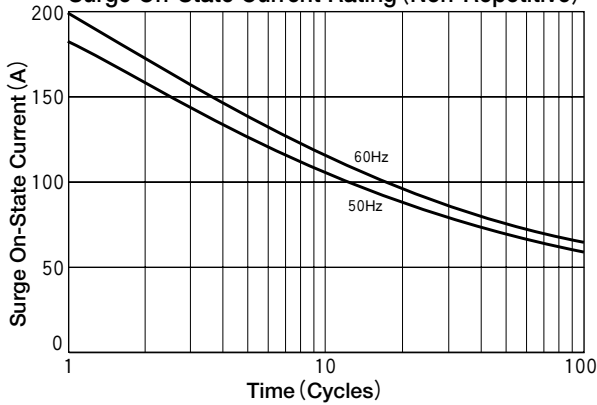
Average On-State Current vs Power Dissipation (Single phase half wave)



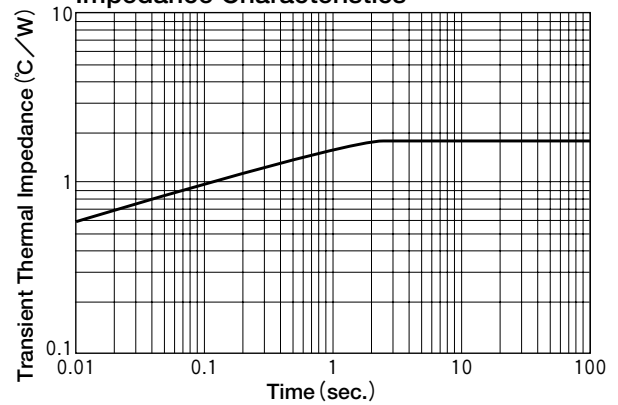
Average On-State Current vs Ambient Temperature (Single phase half wave)



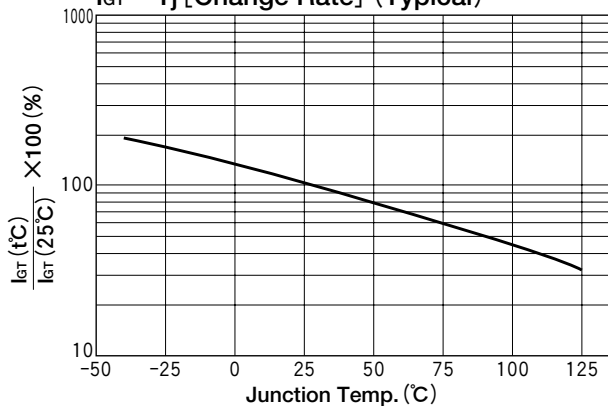
Surge On-State Current Rating (Non-Repetitive)



Maximum Transient Thermal Impedance Characteristics



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



$V_{GT} - T_j$ (Typical)

