

SCR Thyristor

03P2J/03P4J/03P5J

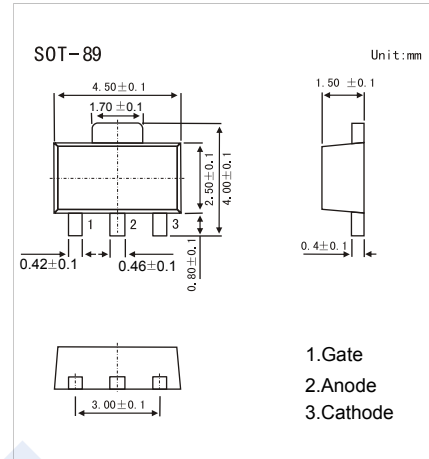
■ Features

- High Anode to Cathode Voltage

$V_{DRM}, V_{RRM}=200V(03P2J)$

$V_{DRM}, V_{RRM}=400V(03P4J)$

$V_{DRM}, V_{RRM}=500V(03P5J)$



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	03P2J	03P4J	03P5J	Unit
Repetitive Peak Reverse Voltages @ $I_{RRM}=100\mu\text{A}$	V_{RRM}	200	400	500	
Repetitive Peak Off-State Voltages @ $I_{DRM}=100\mu\text{A}$	V_{DRM}	200	400	500	
Average on-state Current ($T_a = 77^\circ\text{C}$ Single phase half wave)	$I_{T(AV)}$	0.3			A
Forward Current RMS	$I_{T(RMS)}$	0.47			
Non-Repetitive Peak on-state Current ($f=50\text{Hz}, 1\text{cycle}$)	I_{TSM}	6			
Circuit Fusing Considerations ($1\text{ms} \leq t \leq 10\text{ms}$)	I^2t	0.15			A^2s
Peak Gate Current — Forward ($f \geq 50\text{Hz}, \text{duty} \leq 10\%$)	I_{GFM}	0.1			A
Peak Gate Voltage — Reverse	V_{GRM}	6			V
Peak Gate Power — Forward ($f \geq 50\text{Hz}, \text{duty} \leq 10\%$)	P_{GM}	100			mW
Average Gate Power — Forward	$P_{GF(AV)}$	10			
Thermal Resistance Junction to Ambient	$R_{th(j-a)}$	65			$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	125			$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150			

■ Electrical Characteristics ($T_a = 25^\circ\text{C}$, unless otherwise noted.)

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
Gate Non-Trigger Voltage	V_{GD}	$V_{DM}=1/2V_{DRM}, T_J = 125^\circ\text{C}$	0.1			V
Off-state Leakage Current	$I_{D,IR}$	$V_{DRM}=V_{RRM}, R_{GK}=1\text{K}\Omega, T_J=25^\circ\text{C};$			10	μA
		$V_{DRM}=V_{RRM}, T_J=125^\circ\text{C};$			100	
On-state Voltage	V_{TM}	$I_T=1\text{A}$			1.6	V
Gate Trigger Voltage	V_{GT}	$V_{DM}=6\text{V}, R_L=100\Omega$			0.8	
Gate Trigger Current (Continuous dc)	I_{GT}	$V_{DM}=6\text{V}, R_L=100\Omega$			200	μA
Holding Current	I_H	$V_D=12\text{V}, I_T=1\text{A}$			5	mA
Critical Rate of rise of off-state Voltage	dV/dt	$V_{DM}=2/3V_{DRM}, T_J=125^\circ\text{C}$		40		V/us
Circuit Commutated turn-off time	t_q	$V_D=2/3V_{DRM}, T_J=125^\circ\text{C}, T_M=200\text{mA};$ $V_R \geq 25\text{V}, dI_{TM}/dt=15\text{A/us}, dV_D/dt=20\text{V/us};$		25		μs

■ Marking

NO	03P2J	03P4J	03P5J
Marking	03P2J	03P4J	03P5J

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■ Typical Characteristics

Fig. 1 $I_{TM} - V_{TM}$ CHARACTERISTICS

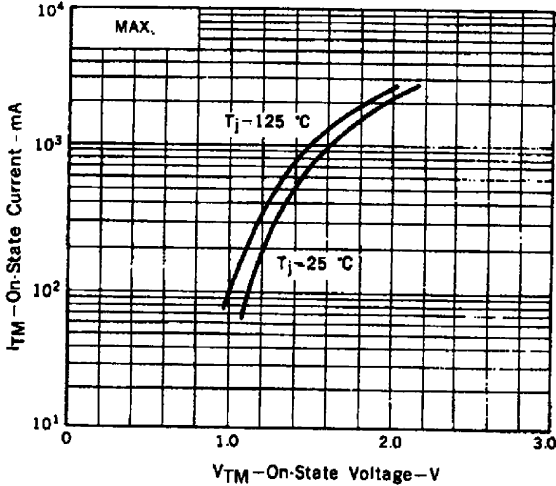


Fig. 2 I_{TSM} RATING

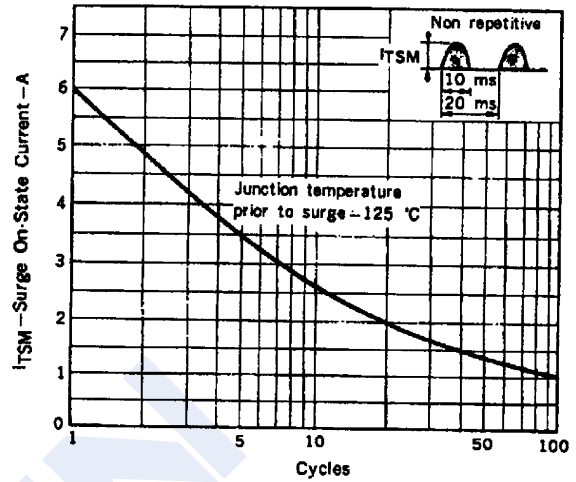


Fig. 3 GATE POWER RATINGS

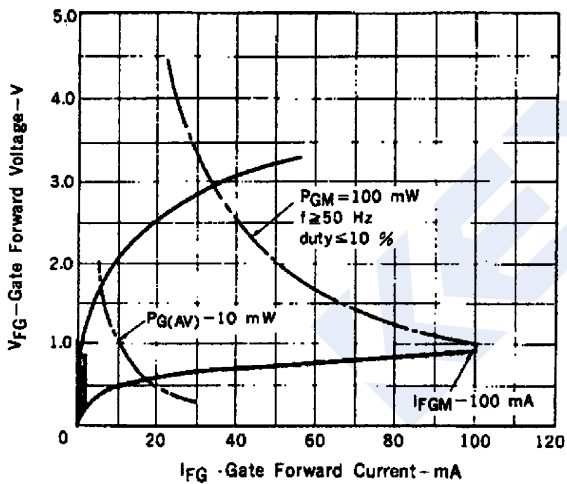


Fig. 4 $I_{GS} - V_{GT}$ DISTRIBUTION

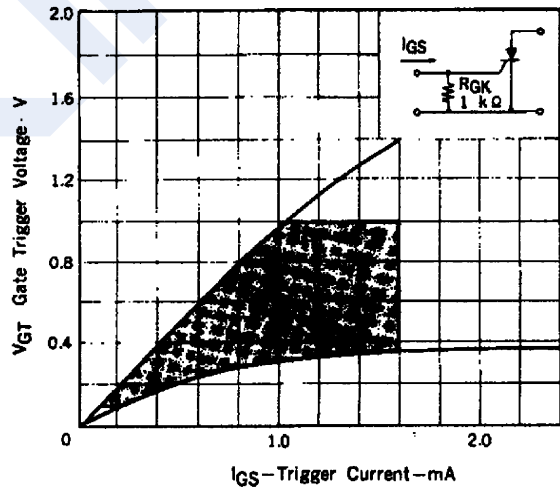


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

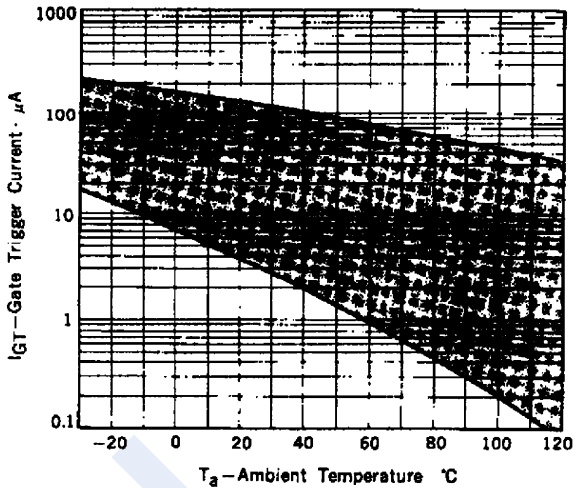
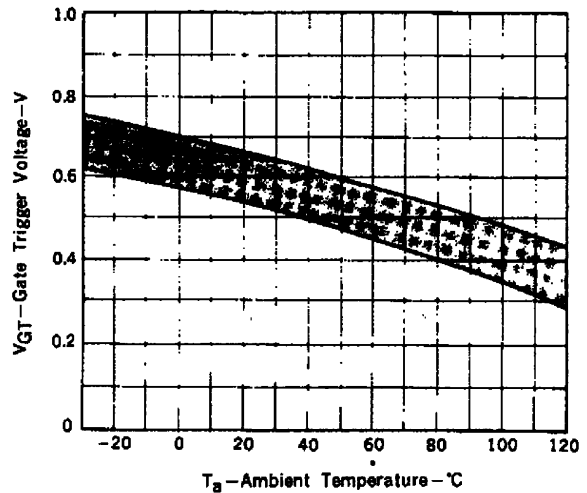


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION



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■ Typical Characteristics

