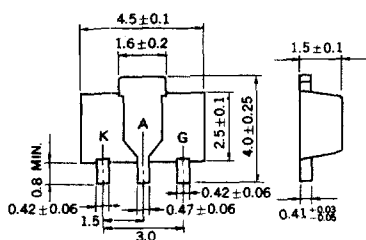


THYRISTORS

03P2J, 03P4J, 03P5J

0.47 Ar.m.s. ALL DIFFUSED TYPE SCR POWER MINI MOLD

PACKAGE DIMENSIONS in millimeters



K: Cathode
A: Anode
G: Gate SOT-89

DESCRIPTION

The 03P2J, 03P4J and 03P5J are designed for many switching applications, especially in Hybrid Integrated Circuits.

FEATURES

- World Standard Miniature Package: SOT-89
- High Anode to Cathode Voltage
 - : $V_{DRM}, V_{RRM} = 200$ V (03P2J)
 - : $V_{DRM}, V_{RRM} = 400$ V (03P4J)
 - : $V_{DRM}, V_{RRM} = 500$ V (03P5J)

APPLICATIONS

- Cassette tape recorder
- Solid-state relay
- Strobe flasher
- Ground fault detector
- Automobile equipment

MAXIMUM RATINGS ($R_{GK} = 1$ k Ω)

ITEM	SYMBOL	03P2J	03P4J	03P5J	UNIT
Non-Repertitive Peak Reverse Voltage	V_{RSM}	300	500	600	V
Non-Repertitive Peak Off-State Voltage	V_{DSM}	300	500	600	V
Repetitive Peak Reverse Voltage	V_{RRM}	200	400	500	V
Repetitive Peak Off-State Voltage	V_{DRM}	200	400	500	V
Average On-State Current	$I_T(AV)$	0.3 ($T_a = 77^\circ\text{C}$, Single phase half wave)			A
RMS On-State Current	$I_T(RMS)$	0.47			A
Surge On-State Current	I_{TSM}	6 ($f = 50$ Hz, 1 cycle)			A
Fusing Current	$\int i_T^2 dt$	0.15 ($1\text{ ms} \leq t \leq 10\text{ ms}$)			A ² s
Peak Gate Power Dissipation	PGM	0.1 ($f \geq 50$ Hz, duty $\leq 10\%$)			W
Average Gate Power Dissipation	PG(AV)	0.01			W
Peak Gate Forward Current	I_{FGM}	0.1 ($f \geq 50$ Hz, duty $\leq 10\%$)			A
Peak Gate Reverse Voltage	V_{RGM}	6			V
Junction Temperature	T_j	-55 to $+125$			$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to $+150$			$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (T_J = 25 °C, R_{GK} = 1 kΩ)

ITEM	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Repetitive Peak Reverse Current	I _{RRM}	V _{RM} = V _{RRM}	T _J = 25 °C	—	10	μA
			T _J = 125 °C	—	100	
Repetitive Peak Off-State Current	I _{DRM}	V _{DM} = V _{DRM}	T _J = 25 °C	—	10	μA
			T _J = 125 °C	—	100	
Critical Rate of Rise of Off-State Voltage	dv/dt	V _{DM} = $\frac{2}{3}$ V _{DRM} , T _J = 125 °C	—	40	—	V/μs
On-State Voltage	V _{TM}	I _{TM} = 1 A	—	—	1.6	V
Gate Trigger Current	I _{GT}	V _{DM} = 6 V, R _L = 100 Ω	—	—	200	μA
Gate Trigger Voltage	V _{GT}	V _{DM} = 6 V, R _L = 100 Ω	—	—	0.8	V
Gate Non-Trigger Voltage	V _{GD}	V _{DM} = $\frac{1}{2}$ V _{DRM} , T _J = 125 °C	0.1	—	—	V
Holding Current	I _H	V _{DM} = 24 V, I _{TM} = 1 A	—	—	5	mA
Commutating Turn-Off Time	t _q	I _{TM} = 200 mA, di _T /dt = 15 A/μs V _{RM} ≥ 25 V, V _{DM} = $\frac{2}{3}$ V _{DRM} dv/dt = 20 V/μs, T _J = 125 °C	—	25	—	μs
Thermal Resistance	R _{th(j-a)}	Junction to Ambient*	—	—	65	°C/W

*Mounted on 0.7 mm × 2.5 cm² ceramic substrate

Fig. 1 I_{TM} – V_{TM} CHARACTERISTICS

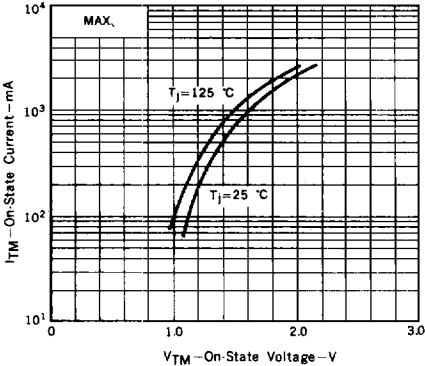


Fig. 2 I_{TSM} RATING

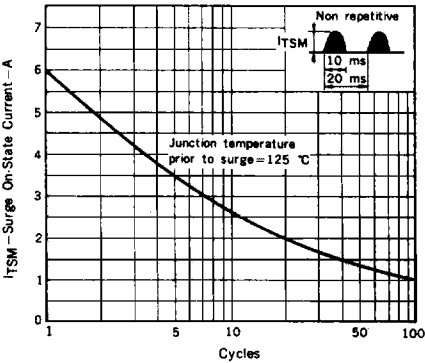


Fig. 3 GATE POWER RATINGS

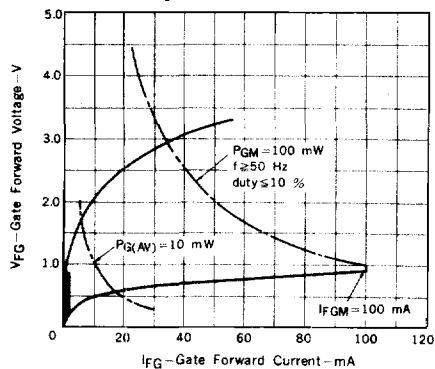
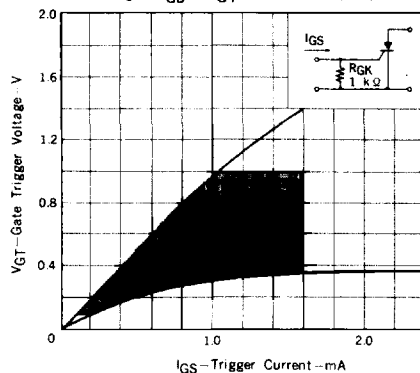
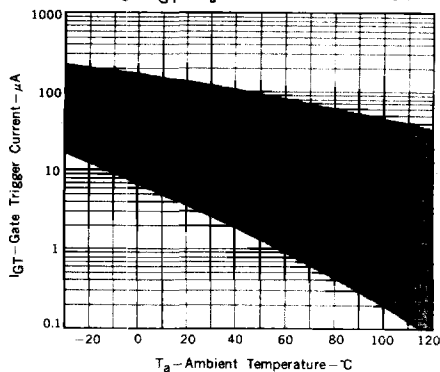
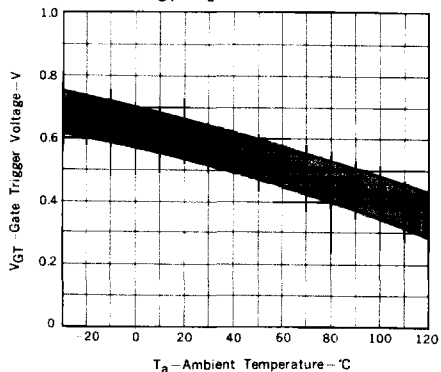
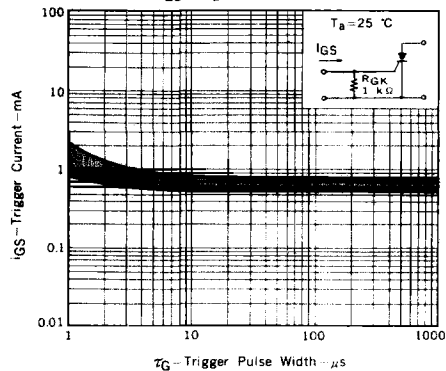
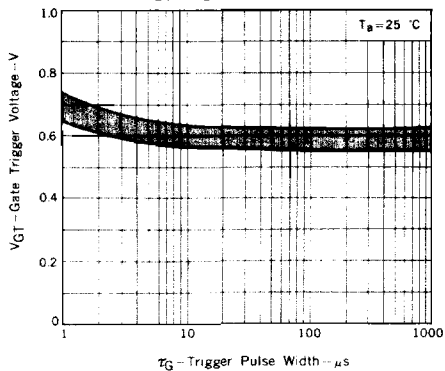
Fig. 4 $I_{GS} - V_{GT}$ DISTRIBUTIONFig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTIONFig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTIONFig. 7 $I_{GS} - \tau_G$ TYPICAL DISTRIBUTIONFig. 8 $V_{GT} - \tau_G$ TYPICAL DISTRIBUTION

Fig. 9 $P_T(AV) - I_T(AV)$ CHARACTERISTICS

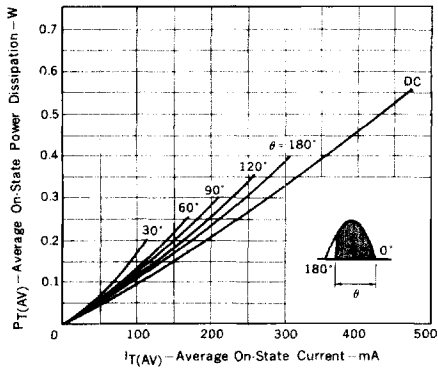


Fig. 10 $I_T(AV) - T_a$ RATINGS

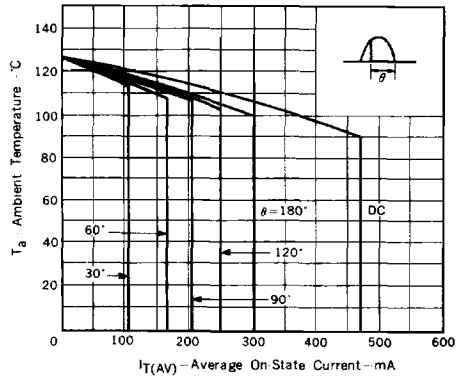


Fig. 11 $I_H - T_a$ TYPICAL DISTRIBUTION

