

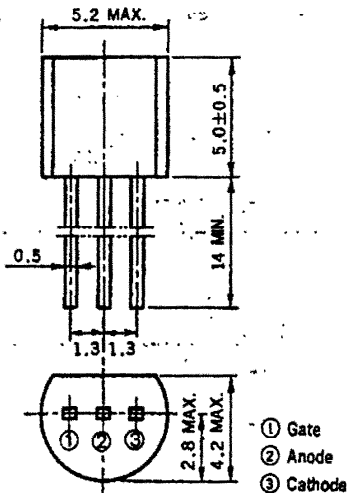
THYRISTORS

03P2M, 03P4M

0.47 A(R.M.S.) ALL DIFFUSED MOLD TYPE SCR

PACKAGE DIMENSIONS

in millimeters



DESCRIPTION

The 03P2M and 03P4M are P-gate all diffused mold type SCR rated at 0.47 Amps RMS maximum on-state current, with rated voltages up to 400 volts.

FEATURES

- Plastic TO-92 package.
- 200 μ A gate sensitivity.
- 5 mA holding current.
- 8 A surge current.

APPLICATIONS

Cassette tape recorder, Television
 Automobile equipment
 Photoflash
 Automatic gas lighter,
 Solid-state relay
 Light display equipment
 Motor, solenoid and temperature control etc.

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MAXIMUM RATINGS (R_{GK} = 1 k Ω)

ITEM	SYMBOL	03P2M	03P4M	UNIT
Non-Repetitive Peak Reverse Voltage	V _{RSM}	300	500	V
Non-Repetitive Peak Off-State Voltage	V _{DSM}	300	500	V
Repetitive Peak Reverse Voltage	V _{RRM}	200	400	V
Repetitive Peak Off-State Voltage	V _{DRM}	200	400	V
Average On-State Current	I _{T(AV)}	0.3 (T _a = 30 °C, Single phase half wave)		A
RMS On-State Current	I _{T(RMS)}	0.47		A
Surge On-State Current	I _{TSM}	8 (f = 50 Hz, 1 cycle)		A
Fusing Current	$\int i_T^2 dt$	0.15 (1 ms \leq t \leq 10 ms)		A ² s
Peak Gate Power Dissipation	P _{GM}	0.1 (f \geq 50 Hz, duty \leq 10 %)		W
Average Gate Power Dissipation	P _{G(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	-40 to +125		°C
Storage Temperature	T _{stg}	-40 to +150		°C

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$, $R_{GK} = 1\text{ k}\Omega$)

ITEM	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT	
Repetitive Peak Reverse Current	I_{RRM}	$V_{RM} = V_{RRM}$	$T_j = 25^\circ\text{C}$	—	—	10	μA
			$T_j = 125^\circ\text{C}$	—	—	100	
Repetitive Peak Off-State Current	I_{DRM}	$V_{DM} = V_{DRM}$	$T_j = 25^\circ\text{C}$	—	—	10	μA
			$T_j = 125^\circ\text{C}$	—	—	100	
Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{DM} = \frac{2}{3} V_{DRM}$, $T_j = 125^\circ\text{C}$	—	40	—	$\text{V}/\mu\text{s}$	
On-State Voltage	V_{TM}	$I_{TM} = 4\text{ A}$	—	—	2.5	V	
Gate Trigger Current	I_{GT}	$V_{DM} = 6\text{ V}$, $R_L = 100\ \Omega$	—	—	200	μA	
Gate Trigger Voltage	V_{GT}	$V_{DM} = 6\text{ V}$, $R_L = 100\ \Omega$	—	—	0.8	V	
Gate Non-Trigger Voltage	V_{GD}	$V_{DM} = \frac{1}{2} V_{DRM}$, $T_j = 125^\circ\text{C}$	0.1	—	—	V	
Holding Current	I_H	$V_{DM} = 24\text{ V}$, $I_{TM} = 4\text{ A}$	—	—	5	mA	
Commutating Turn-Off Time	t_q	$I_{TM} = 200\text{ mA}$, $di/dt = 15\text{ A}/\mu\text{s}$ $V_{RM} \geq 25\text{ V}$, $V_{DM} = \frac{2}{3} V_{DRM}$ $dv/dt = 20\text{ V}/\mu\text{s}$, $T_j = 125^\circ\text{C}$	—	25	—	μs	
			Thermal Resistance	$R_{th(j-c)}$	Junction to Case (flat side of case is temperature reference point)	—	—
	$R_{th(j-a)}$	Junction to Ambient	—	—	230		

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

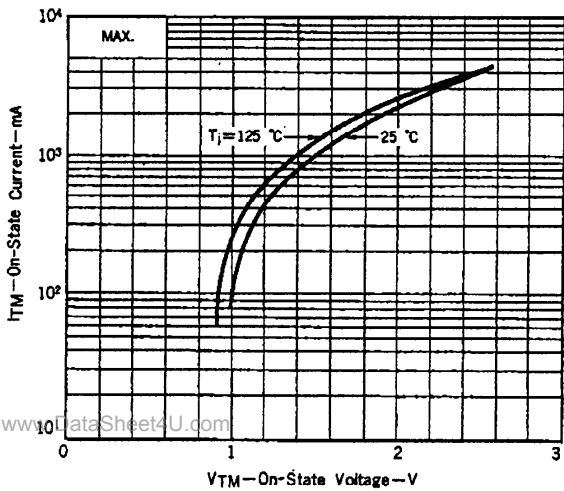


Fig. 2 I_{TSM} RATING

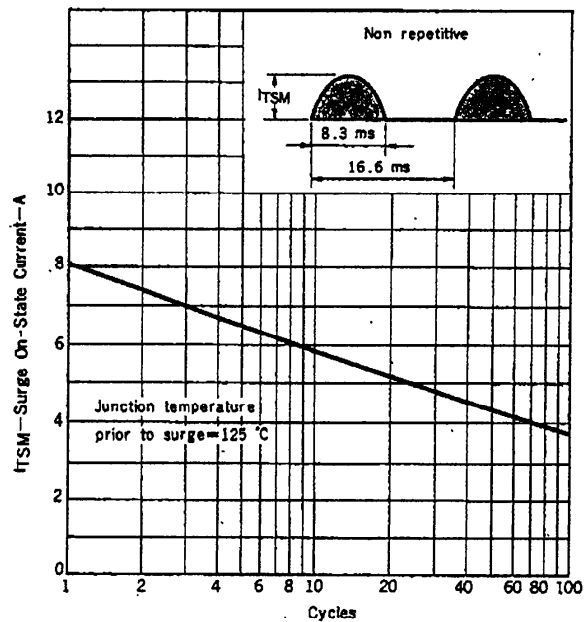


Fig. 3 GATE POWER RATINGS

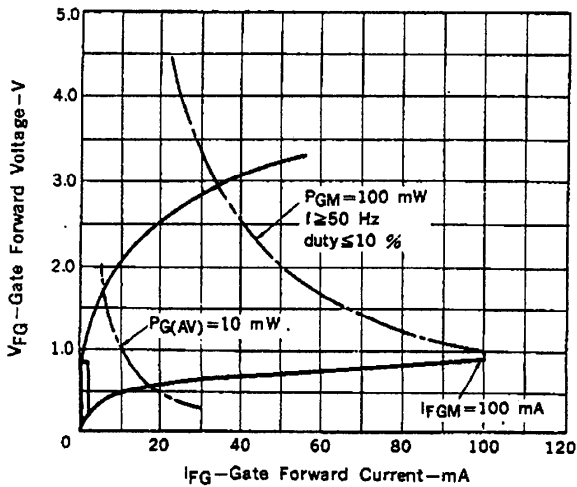


Fig. 4 $I_{GS} - V_{GT}$ DISTRIBUTION

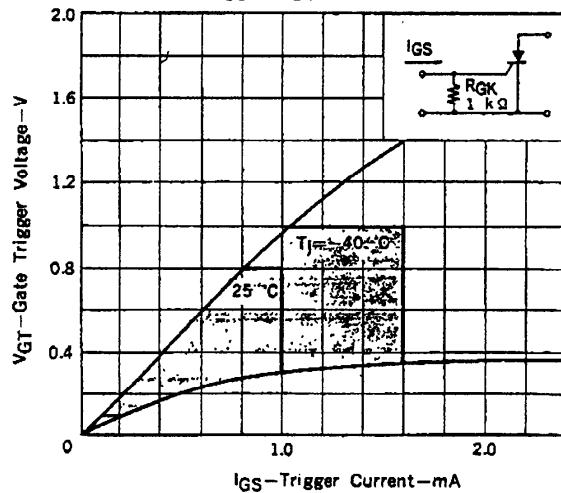


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

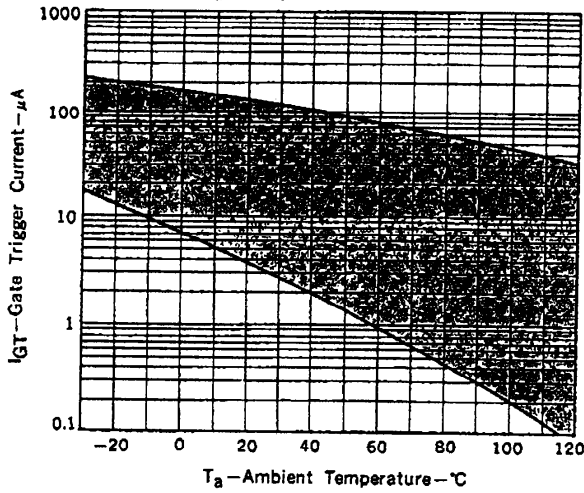


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

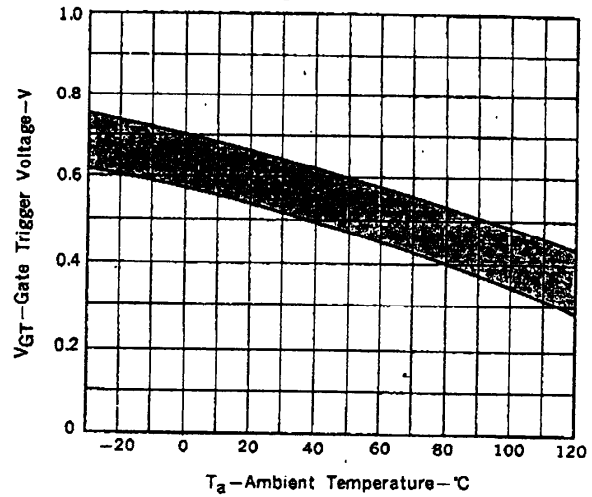


Fig. 7 $I_{GS} - \tau_G$ TYPICAL DISTRIBUTION

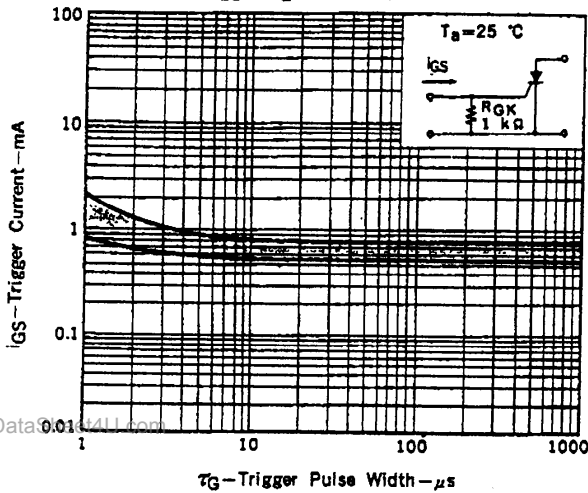


Fig. 8 $V_{GT} - \tau_G$ TYPICAL DISTRIBUTION

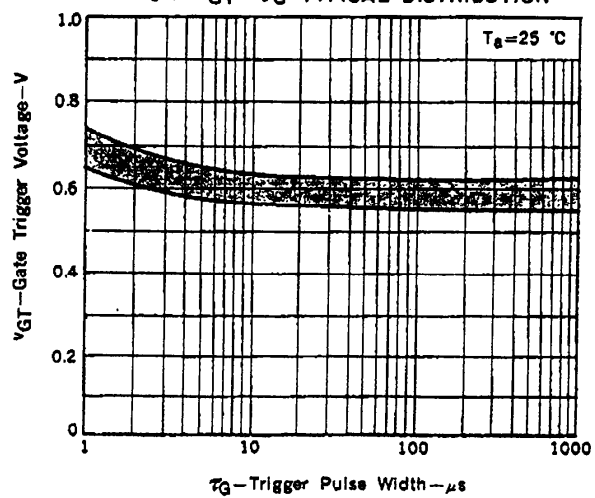


Fig. 9 $P_{T(AV)} - I_{T(AV)}$ CHARACTERISTICS

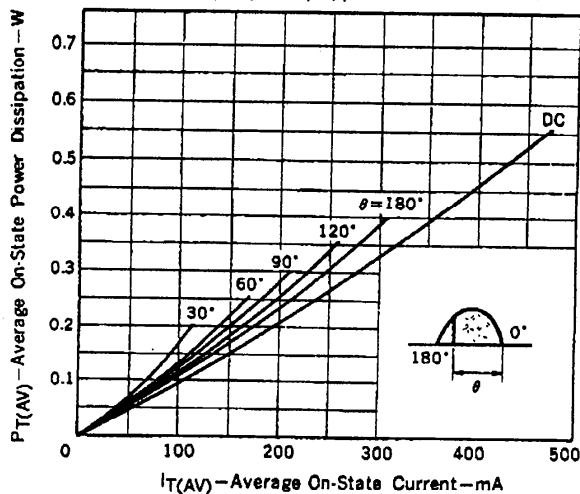


Fig. 10 $I_{T(AV)} - T_a$ RATINGS

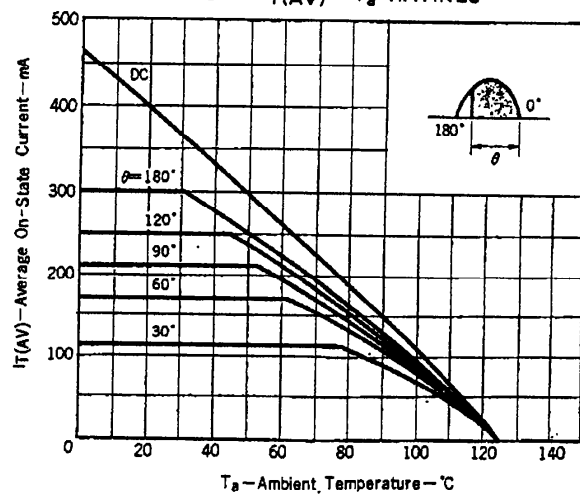


Fig. 11 $I_H - T_a$ TYPICAL DISTRIBUTION

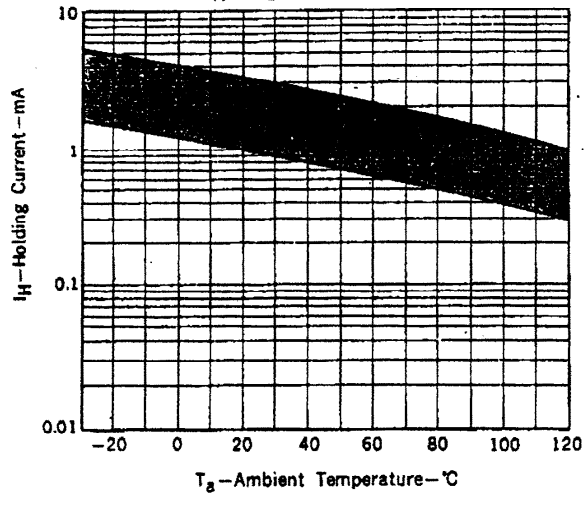
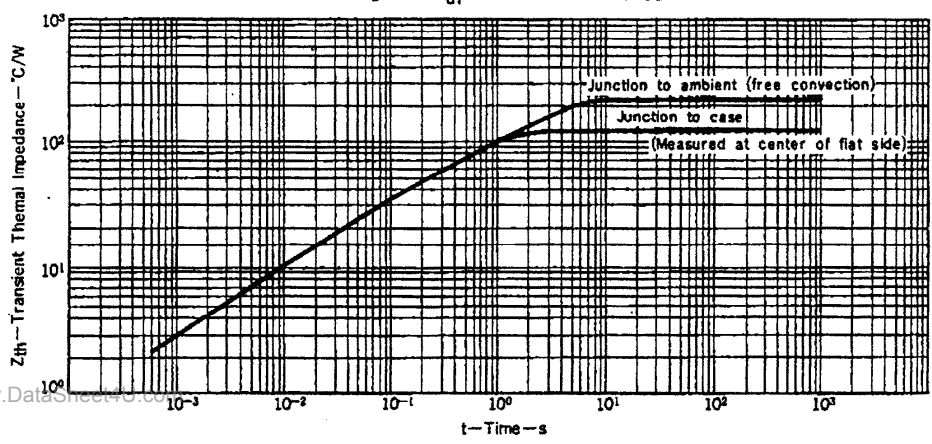


Fig. 12 Z_{th} CHARACTERISTICS



NEC Corporation

INTERNATIONAL ELECTRON DEVICES DIV.
 NEC Building, 33-1, Shiba Gochome
 Minato-ku, Tokyo 108, Japan
 Tel: Tokyo 454-1111
 Telex Address: NECTOK J22686
 Cable Address: MICROPHONE TOKYO

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