

TRIACS AC03DSM, AC03FSM AC03DSMA, AC03FSMA

3 A MOLD ISOLATED TRIAC

The AC03□SM and AC03□SMA are all diffused mold type triac granted RMS On-state current 3 Amps, with rated voltages up to 600 volts.

FEATURES

- Isolated plastic package (Modified TO-220AB)
- 30 A Surge current

APPLICATIONS

- Motor speed control
- Lamp dimmer, Temperature controllers
- Various solid state switches, etc.

MAXIMUM RATINGS

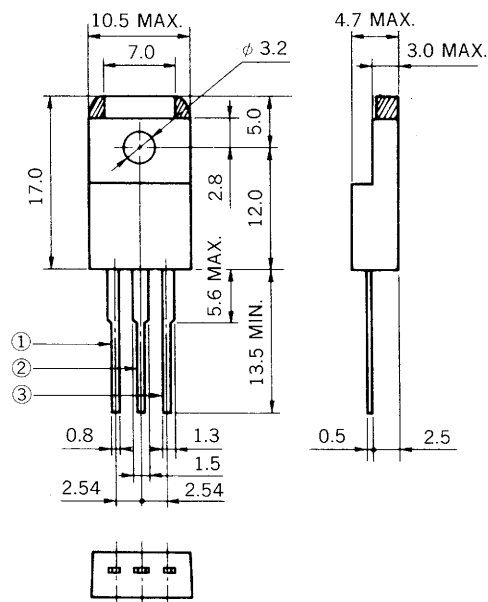
ITEM	SYMBOL	AC03DSM AC03DSMA	AC03FSM AC03FSMA	UNIT	NOTE
Repetitive Peak Off-State Voltage	V_{DRM}	400	600	V	
Non-repetitive Peak Off-State Voltage	V_{DSM}	500	700	V	
RMS On-State Current	$I_T(RMS)$	3 ($T_C = 109^\circ C, \theta = 180^\circ$)		A	See Fig. 12, 13
Surge On-State Current	I_{TSM}	30 (50 Hz 1 cycle)		A	See Fig. 2
Fusing Current	$\int i^2 dt$	4.0		$A^2 s$	
Peak Gate Power Dissipation	P_{GM}	3 ($f \geq 50$ Hz, Duty $\leq 10\%$)		W	
Average Gate Power Dissipation	$P_{G(AV)}$	0.3		W	
Peak Gate Current	I_{GM}	± 0.5 ($f \geq 50$ Hz, Duty $\leq 10\%$)		A	
Junction Temperature	T_j	-40 to $+125$		$^\circ C$	
Storage Temperature	T_{stg}	-55 to $+150$		$^\circ C$	
Isolation Voltage	—	1500 (AC 1 min)		V_{RMS}	Only AC03□SM

ELECTRICAL CHARACTERISTICS ($T_j = 25^\circ\text{C}$)

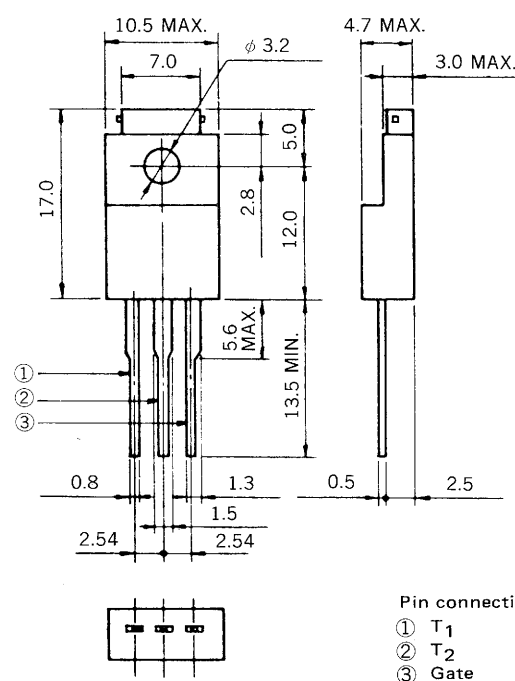
ITEM		SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT	NOTE
Peak Off-State Current		I_{DRM}	$V_{\text{DM}} = V_{\text{DRM}}$ $T_{\text{j}} = 125\text{ }^{\circ}\text{C}$		—	—	1	mA	
On-State Voltage		V_{TM}	$I_{\text{TM}} = 5\text{ A}$		—	—	1.8	V	See Fig. 1
Gate-trigger Current	Trigger Mode I	I_{GT}	$V_{\text{DM}} = 12\text{ V}$ $R_{\text{L}} = 30\text{ }\Omega$	$T_2 +, \text{G} +$	—	—	15	mA	See Fig. 4, 5
	II			$T_2 -, \text{G} +$	—	—	45		
	III			$T_2 +, \text{G} -$	—	—	15		
	IV			$T_2 -, \text{G} -$	—	—	15		
Gate-trigger Voltage	Trigger Mode I	V_{GT}	$V_{\text{DM}} = 12\text{ V}$ $R_{\text{L}} = 30\text{ }\Omega$	$T_2 +, \text{G} +$	—	—	1.5	V	See Fig. 4, 5
	II			$T_2 -, \text{G} +$	—	—	2.0		
	III			$T_2 -, \text{G} -$	—	—	1.5		
	IV			$T_2 +, \text{G} -$	—	—	1.5		
Gate Non-Trigger Voltage		V_{GD}	$T_{\text{j}} = 125\text{ }^{\circ}\text{C}$, $V_{\text{DM}} = \frac{1}{2} V_{\text{DRM}}$		0.2	—	—	V	
Commutating dV/dt		(dv/dt)C	$T_{\text{j}} = 125\text{ }^{\circ}\text{C}$ (di _T /dt)C = −1.6 A/ms $V_{\text{DM}} = 400\text{ V}$		5	—	—	V/μs	
Holding Current		I_{H}	$V_{\text{D}} = 24\text{ V}$, $I_{\text{TM}} = 5\text{ A}$		—	5	—	mA	
Thermal Resistance		$R_{\text{th(j-c)}}$	Junction to Case		—	—	4.5	$^{\circ}\text{C/W}$	See Fig. 7
		$R_{\text{th(j-a)}}$	Junction to Ambient		—	—	65	$^{\circ}\text{C/W}$	

PACKAGE DIMENSIONS (Unit : mm)

AC03DSM, AC03FSM



AC03DSMA, AC03FSMA



CHARACTERISTICS

Fig. 1 $i_T - v_T$ CHARACTERISTIC

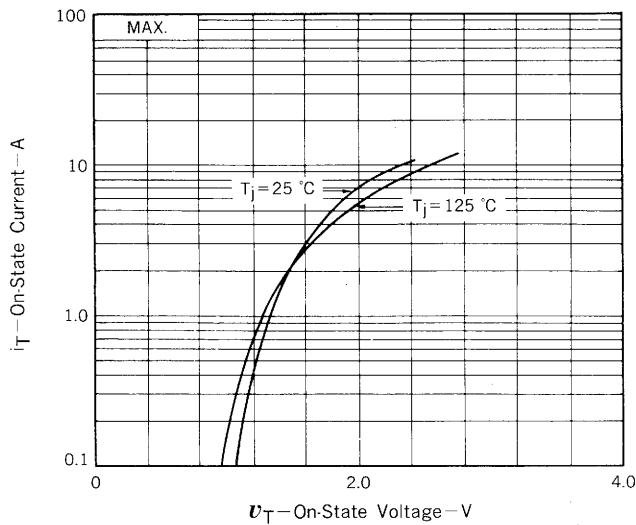


Fig. 2 I_{TSM} RATING

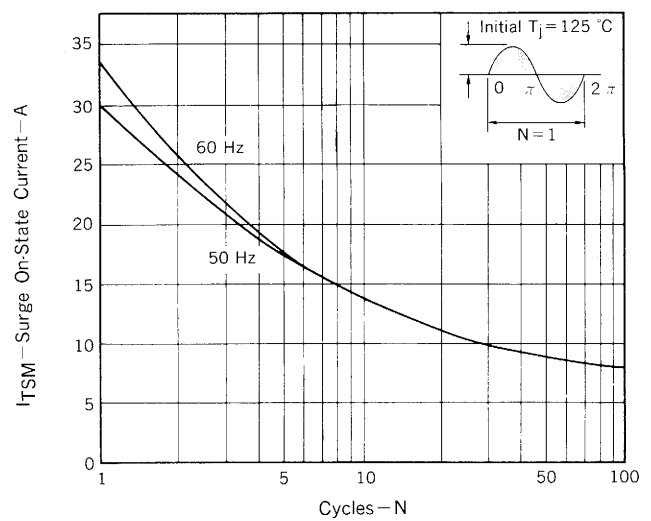


Fig. 3 $V_G - I_G$ RATING

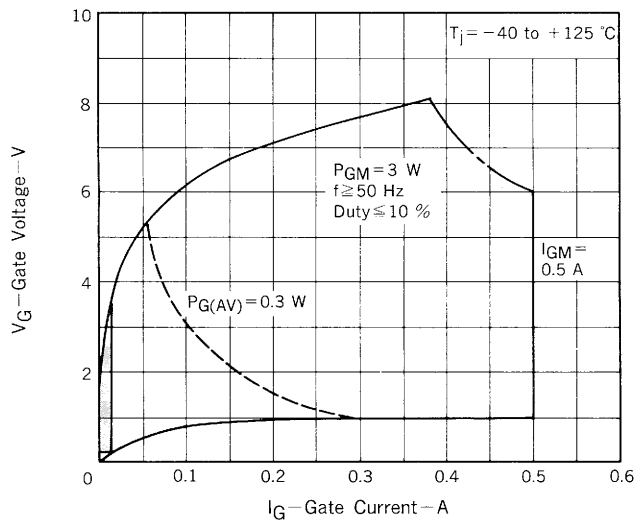


Fig. 4 $V_{GT} - I_{GT}$ CHARACTERISTIC

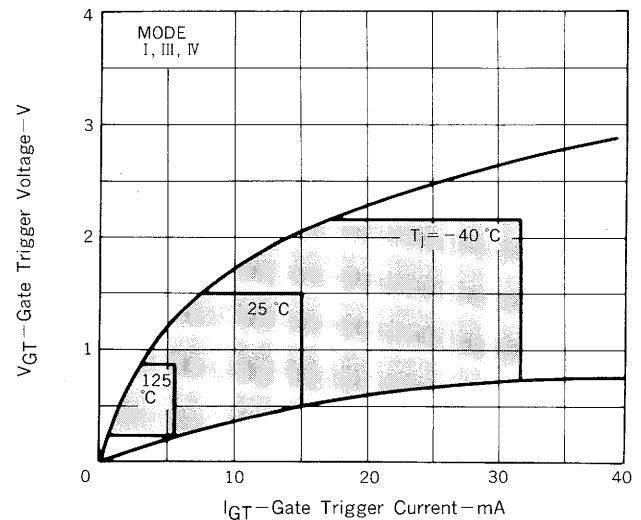


Fig. 5 $V_{GT} - I_{GT}$ CHARACTERISTIC

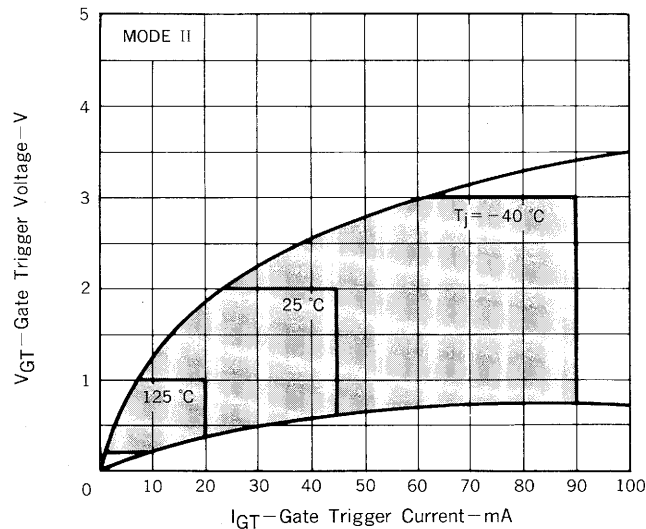


Fig. 6 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

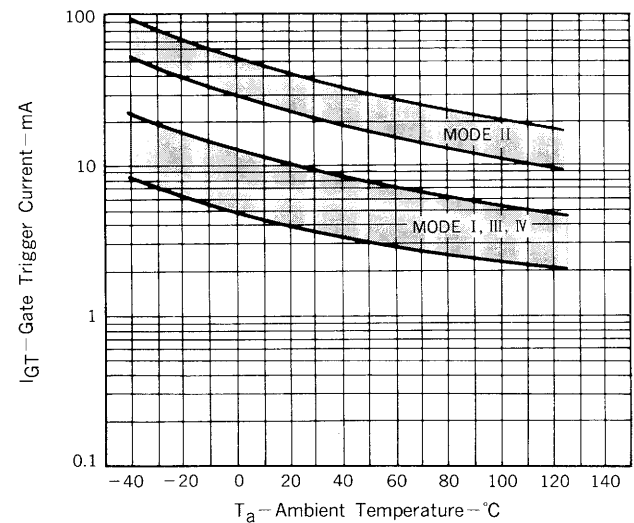


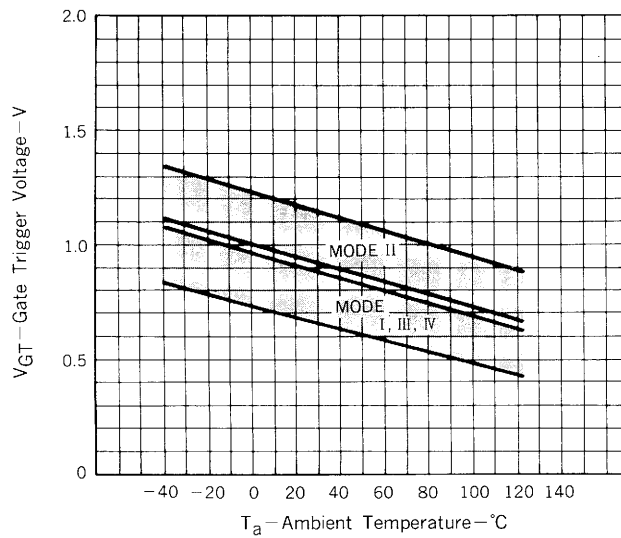
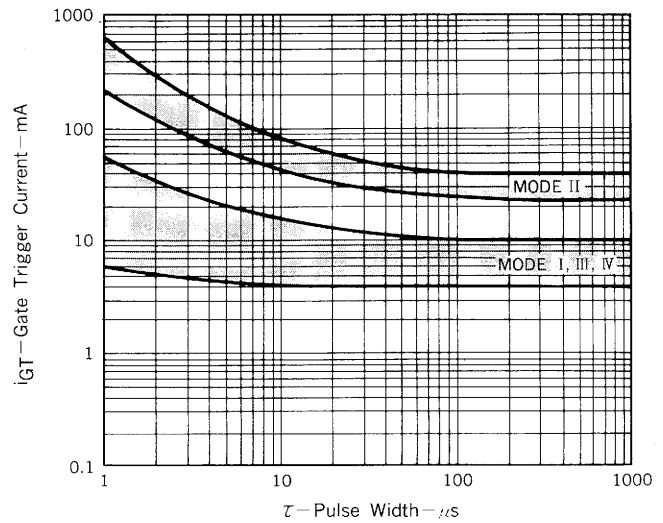
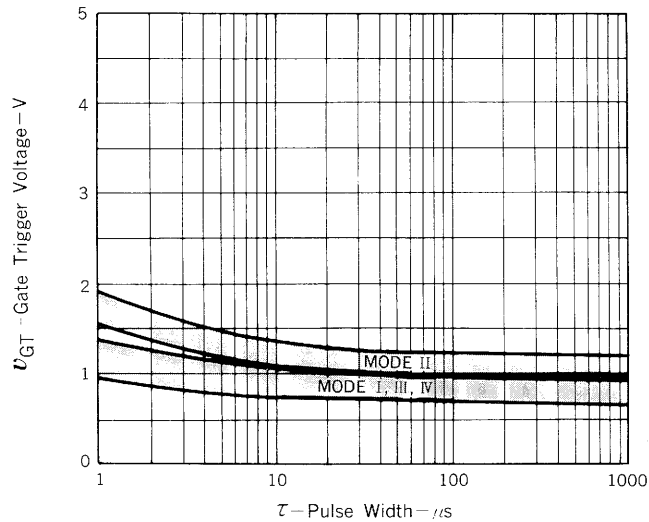
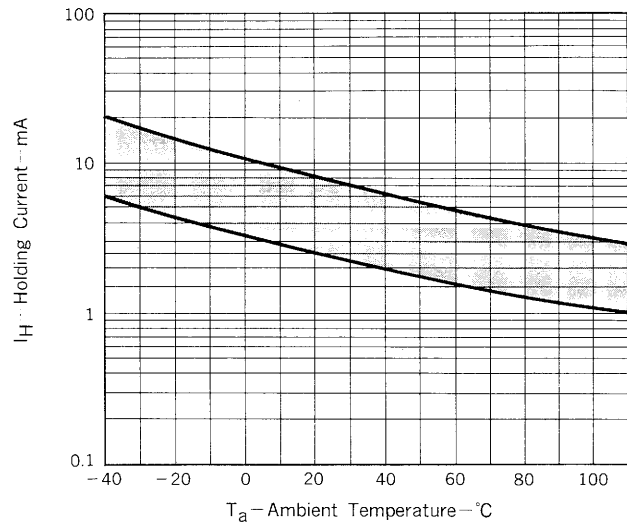
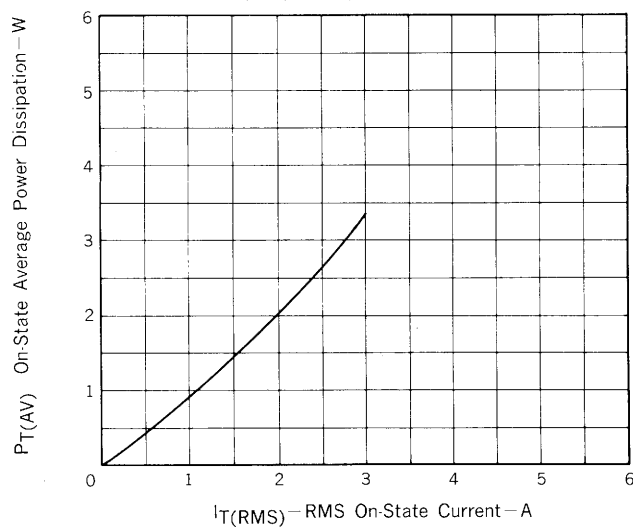
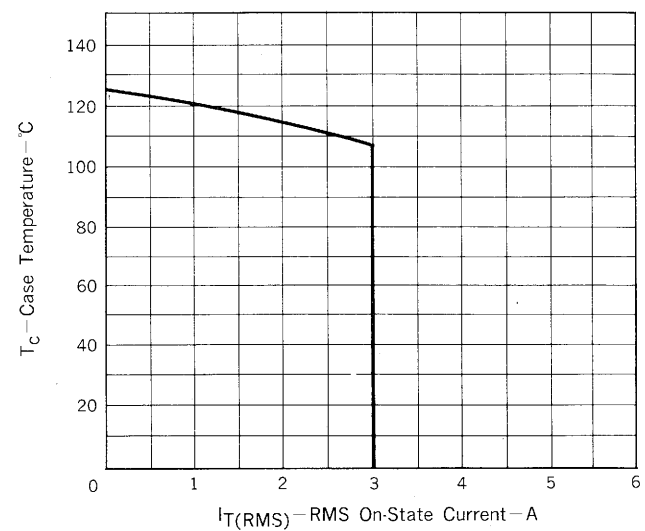
Fig. 7 $V_{GT} - T_a$ TYPICAL DISTRIBUTIONFig. 8 $i_{GT} - \tau$ TYPICAL DISTRIBUTIONFig. 9 $v_{GT} - \tau$ TYPICAL DISTRIBUTIONFig. 10 $I_H - T_a$ TYPICAL DISTRIBUTIONFig. 11 $P_{T(AV)} - I_{T(RMS)}$ CHARACTERISTICFig. 12 $T_c - I_{T(RMS)}$ RATING

Fig. 13 $T_a - I_{T(RMS)}$ RATING

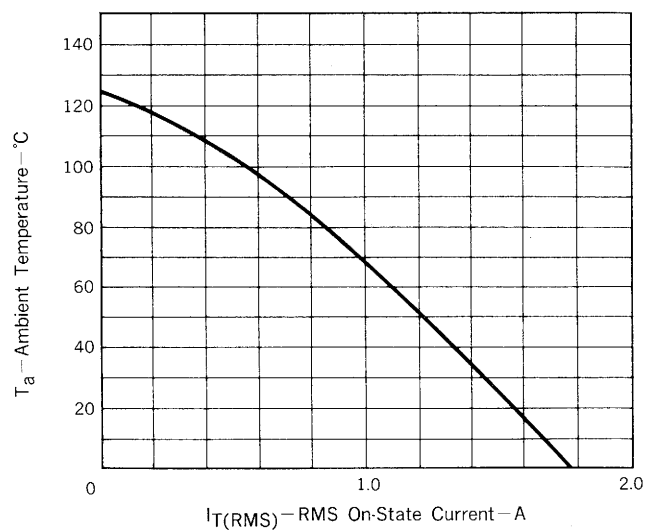


Fig. 14 Z_{th} CHARACTERISTIC

