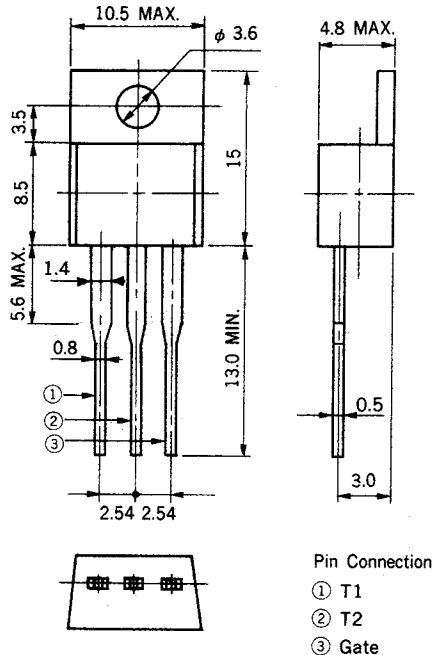


AC12DGM to AC12FGM

12 A MOLD TRIAC

PACKAGE DIMENSIONS (Unit: mm)



The AC12DGM to AC12FGM are all diffused mold type triac granted RMS On-state current 12 Amps, with rated voltages up to 600 volts.

FEATURES

- 100 A Surge Current
- TO-220AB mold package
- Low-cost

APPLICATIONS

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

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	AC12DGM	AC12EGM	AC12FGM	UNIT	NOTE
Repetitive Peak off Voltage	V_{DRM}	400	500	600	V	
Non-repetitive Peak off Voltage	V_{DSM}	500	600	700	V	
RMS On-State Current	I_T (RMS)	12 ($T_c = 98^\circ\text{C}$)			A	See Fig. 11, 12
Peak Surge On-State Current	I_{TSM}	100 (50 Hz, Non-repetitive)			A	See Fig. 2
Fusing Current	$\int i_T^2 dt$	45 ($1\text{ ms} \leq t \leq 10\text{ ms}$)			A^2s	
Peak Gate Power Dissipation	P_{GM}	5.0			W	
Average Gate Power Dissipation	P_G (AV)	0.5			W	
Peak Gate Current	I_{FGM}	± 3			A	
Junction Temperature	T_j	-40 to +125			$^\circ\text{C}$	
Storage Temperature	T_{stg}	-40 to +125			$^\circ\text{C}$	

ELECTRICAL CHARACTERISTICS (T_j = 25 °C)

CHARACTERISTIC		SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT	NOTE
Peak off-State Current		I _{DRM}	T _j = 125 °C, V _{DM} = V _{DRM}	—	—	2	mA	
On-State Voltage		V _{TM}	I _{TM} = 10 A	—	—	1.4	V	See Fig. 1
Gate Trigger Current	Trigger Mode I	I _{GT}	V _{DM} = 12 V R _L = 30 Ω	—	—	30	mA	See Fig. 4
	II			—	—	80		
	III			—	—	30		
	IV			—	—	30		
Gate Trigger Voltage	Trigger Mode I	V _{GT}	V _{DM} = 12 V R _L = 30 Ω	—	—	1.5	V	See Fig. 4
	II			—	—	2.0		
	III			—	—	1.5		
	IV			—	—	1.5		
Gate Non-Trigger Voltage		V _{GD}	T _j = 125 °C V _{DM} = 1/2 V _{DRM}	0.3	—	—	V	
Commutating dv/dt		(dv/dt) C	T _j = 125 °C (di _T /dt) C = -6 A/ms V _D = 400 V	10	—	—	V/μs	
Holding Current		I _H	V _D = 24 V	—	30	—	mA	
Thermal Resistance		R _{th (j-c)}	Junction to Case	—	—	1.8	°C/W	See Fig. 13

Trigger Mode & Test Circuit

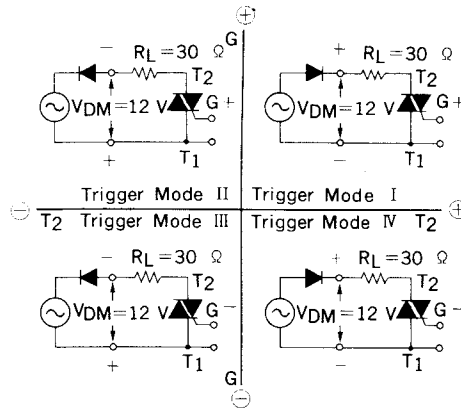


Fig. 1 i_T - v_T CHARACTERISTIC

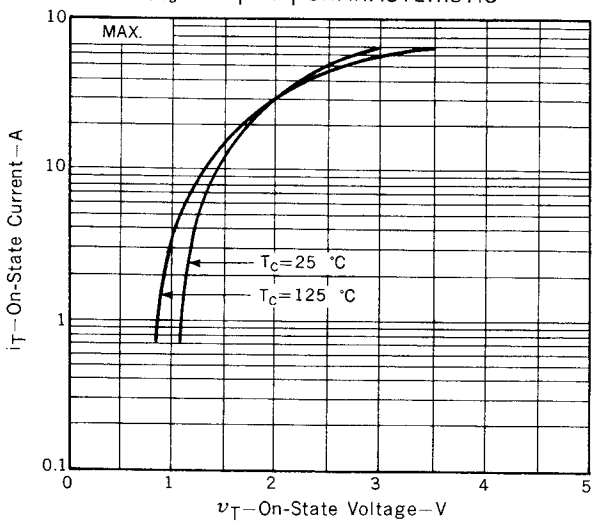


Fig. 2 I_{TSM} RATING

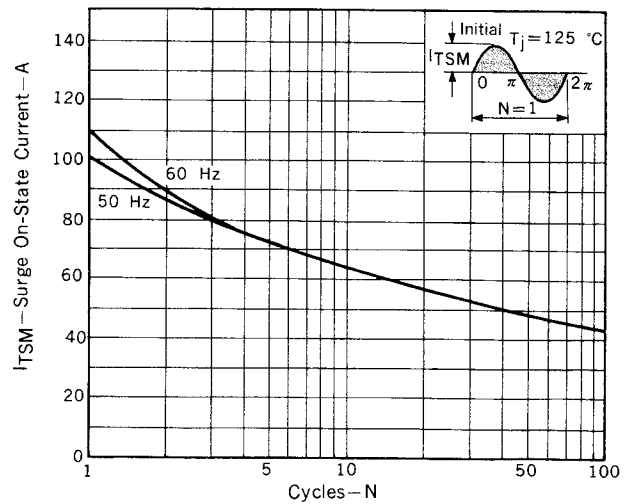


Fig. 3 $V_G - I_G$ RATING

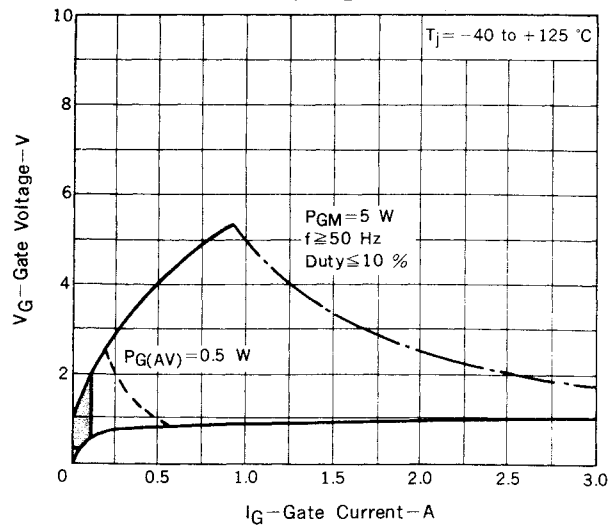


Fig. 4 $V_{GT} - I_{GT}$ CHARACTERISTIC

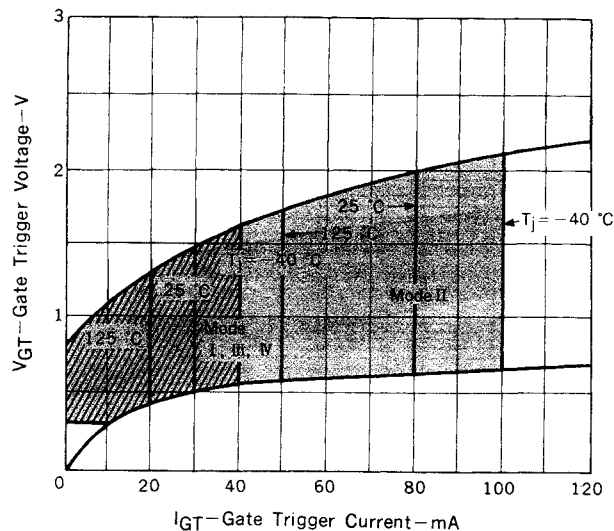


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

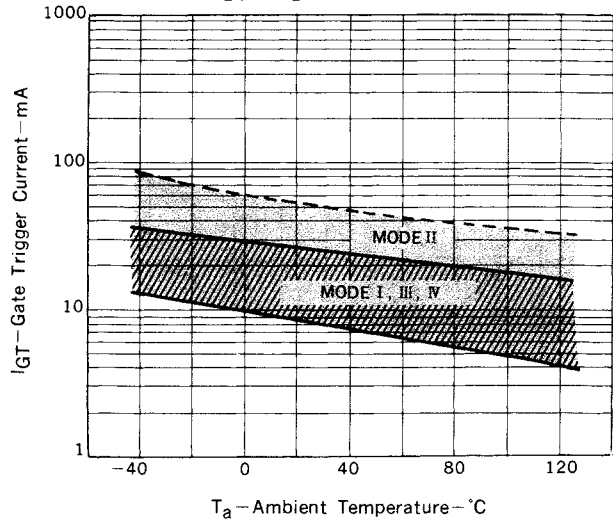


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

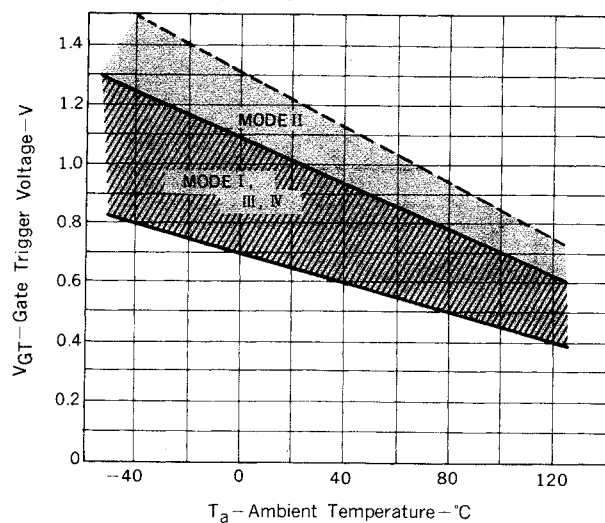


Fig. 7 $i_{GT} - \tau$ TYPICAL DISTRIBUTION

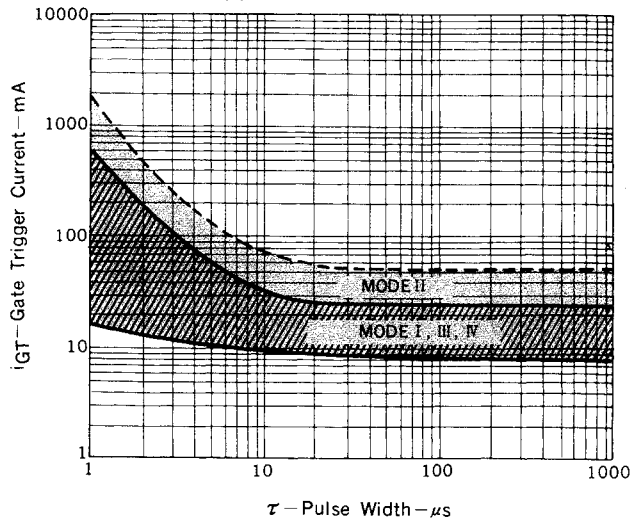


Fig. 8 $v_{GT} - \tau$ TYPICAL DISTRIBUTION

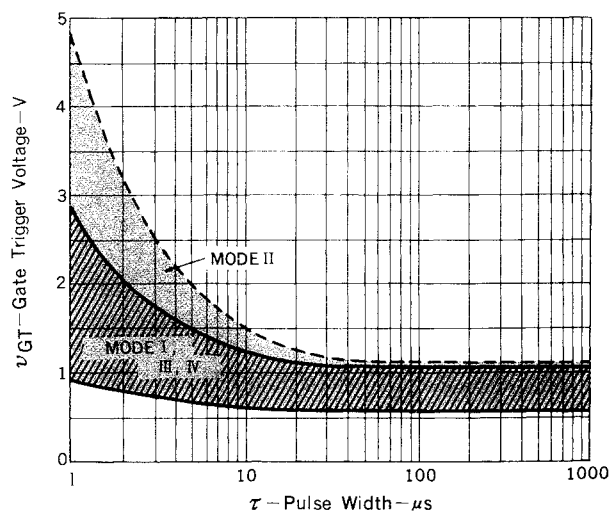


Fig. 9 $I_H - T_a$ TYPICAL DISTRIBUTION

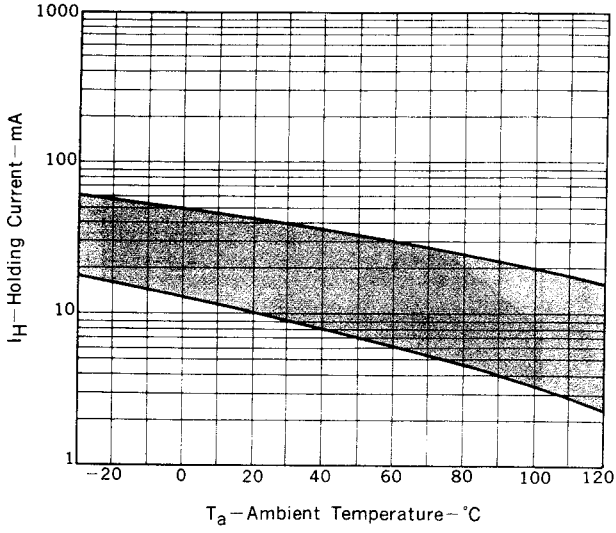


Fig. 10 $P_{T(AV)} - I_{T(RMS)}$ CHARACTERISTIC

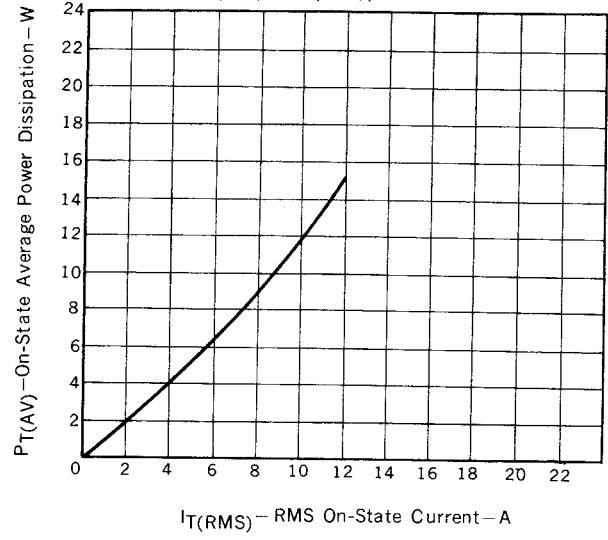


Fig. 11 $T_c - I_{T(RMS)}$ RATING

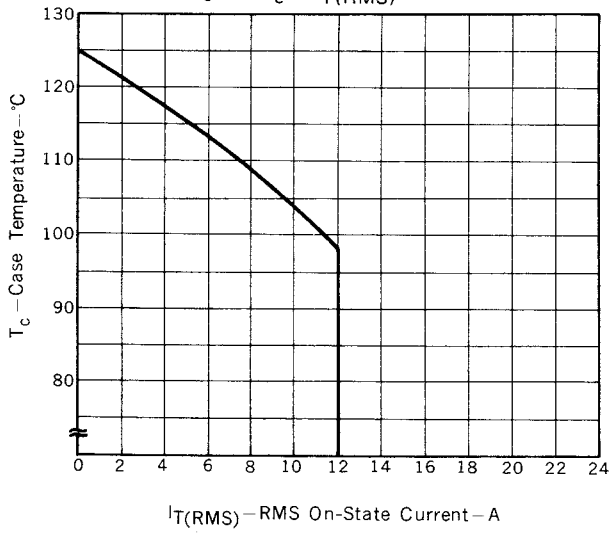


Fig. 12 $T_a - I_{T(RMS)}$ RATING

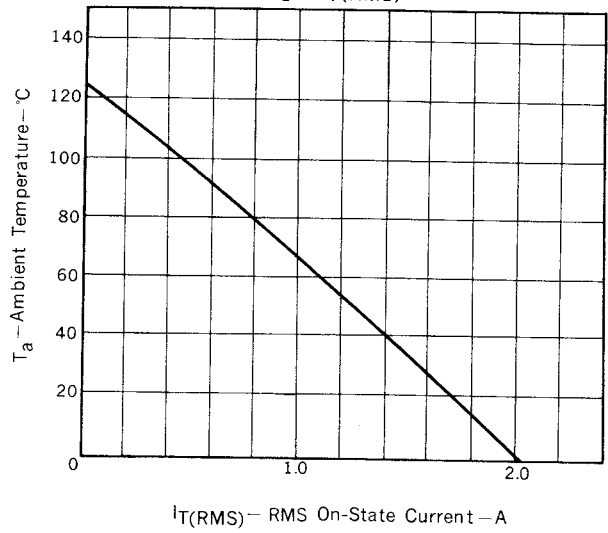
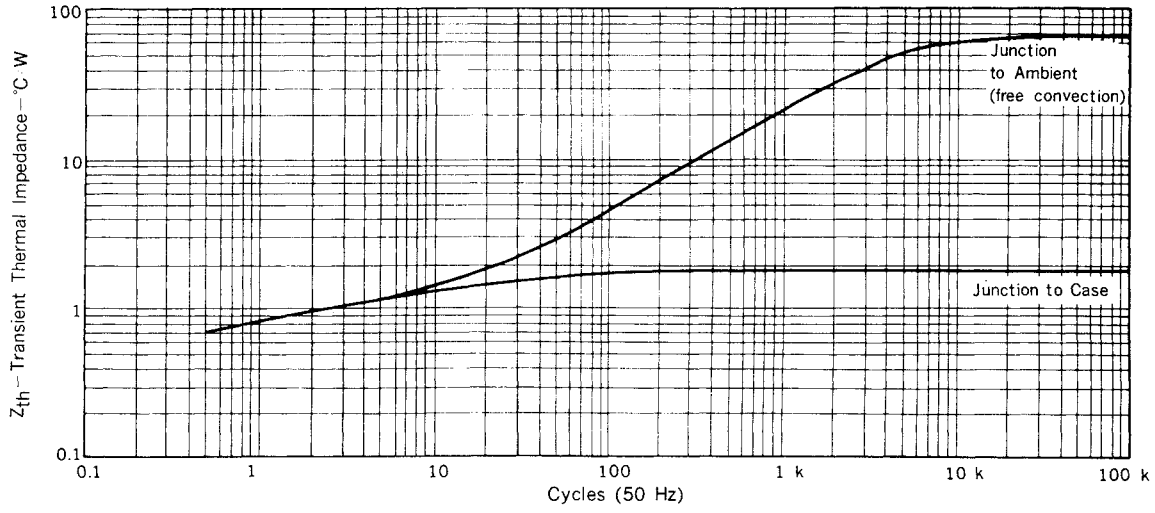


Fig. 13 Z_{th} CHARACTERISTIC



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