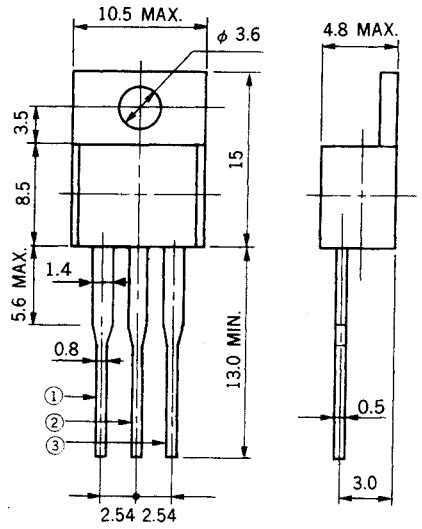
NEC
ELECTRON DEVICE

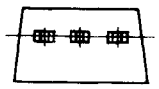
TRIACS

AC16DGM to AC16FGM

16 A MOLD TRIAC

PACKAGE DIMENSIONS
in millimeters





Pin Connection
① T1
② T2
③ Gate

The AC16DGM to AC16FGM are all diffused mold type TRIAC granted RMS On-state current 16 Amps, with rated voltages up to 600 Volts.

FEATURES

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

APPLICATIONS

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

MAXIMUM RATINGS

ITEM	SYMBOL	AC16DGM	AC16EGM	AC16FGM	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	$I_{T(RMS)}$	16 (T_c = 100 °C)			A	See Fig. 11, 12
Surge On-state Current	I_{TSM}	150 (50 Hz Non-repetitive)			A	See Fig. 2
Fusing Current	$\int i_T^2 dt$	100			A^2S	
Peak Gate Power Dissipation	P_{GM}	5			W	
Average Gate Power Dissipation	$P_{G(AV)}$	0.5			W	
Peak Gate Current	I_{GM}	±3			A	
Junction Temperature	T_j	−40 to +125			°C	
Storage Temperature	T_{stg}	−40 to +125			°C	

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ELECTRICAL CHARACTERISTICS (T_j = 25 °C)

ITEM		SYMBOL	TEST CONDITIONS		MIN.	TYP.	MAX.	UNIT	NOTE
Peak Off-State Current		I_{DRM}	$V_{DM}=V_{DRM}$	T_j=25 °C	–	–	0.1	mA	–
				T =125 °C	–	–	2		
On-State Voltage		V_{TM}	I_{TM} =25 A		–	–	1.4	V	See Fig. 1
Critical Rate of Rise of Off-state Voltage		dv/dt	T_j=125 °C $V_{DM}=\frac{2}{3}V_{DRM}$		–	100	–	V/μs	–
DC Gate Trigger Current	I	I_{GT}	V_{DM}=12 V R_L=30 Ω	T_2+, G+	–	–	30	mA	See Fig. 3, 4, 5, 7
	II			T_2−, G+	–	–	80		
	III			T_2−, G−	–	–	30		
	IV			T_2+, G−	–	–	30		
DC Gate Trigger Voltage	I	V_{GT}	V_{DM}=12 V R_L=30 Ω	T_2+, G+	–	–	1.5	V	See Fig. 3, 4, 6, 8
	II			T_2−, G+	–	–	2.0		
	III			T_2−, G−	–	–	1.5		
	IV			T_2+, G−	–	–	1.5		
Gate Non-Trigger Voltage		V_{GD}	T_j=125 °C $V_{DM}=\frac{1}{2}V_{DRM}$		0.3	–	–	V	–
DC Holding Current		I_H	V_D=24 V		–	30	–	mA	
Critical Rate of Rise of Commutating Off-State Voltage		(dv/dt)c	T_j=125 °C, I_{TM} = 22 A $(di_T/dt)_c$=−8 A/ms V_D = 400 V		10	–	–	V/μs	
Thermal Resistance		$R_{th(j-c)}$	Junction-to-Case		–	–	1.5	°C/W	See Fig. 13

Trigger Mode & Test Circuit

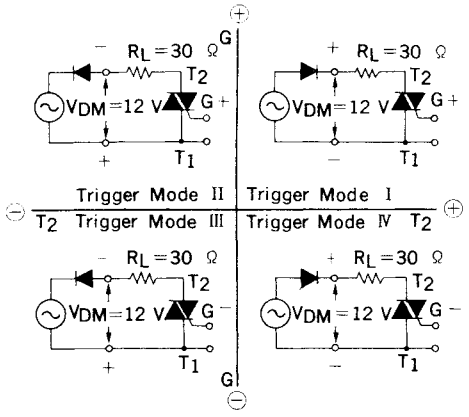


Fig. 1 $i_T - v_T$ CHARACTERISTIC

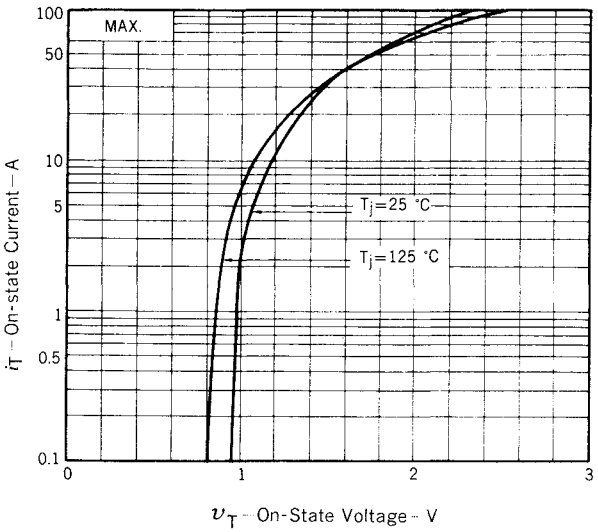


Fig. 2 I_{TSM} RATING

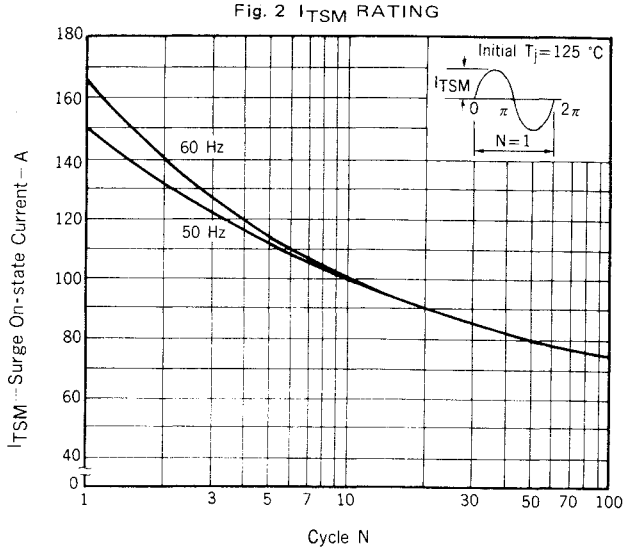


Fig. 3 $V_G - I_G$ RATING

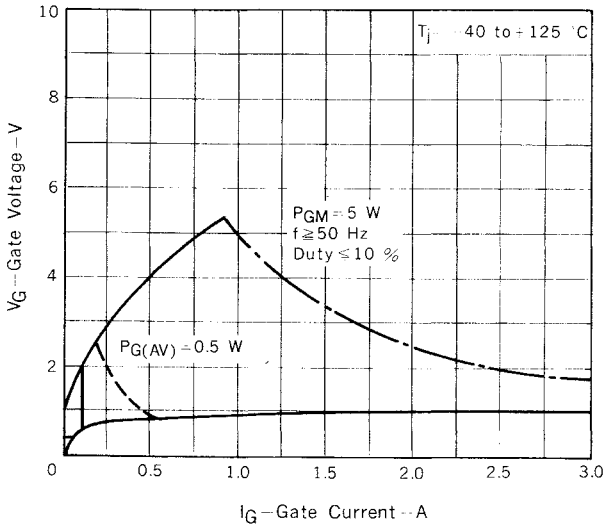


Fig. 4 $V_{GT} - I_{GT}$ CHARACTERISTIC

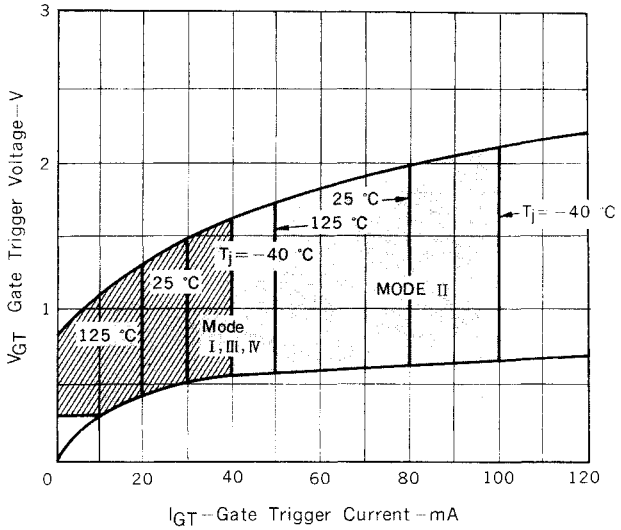


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

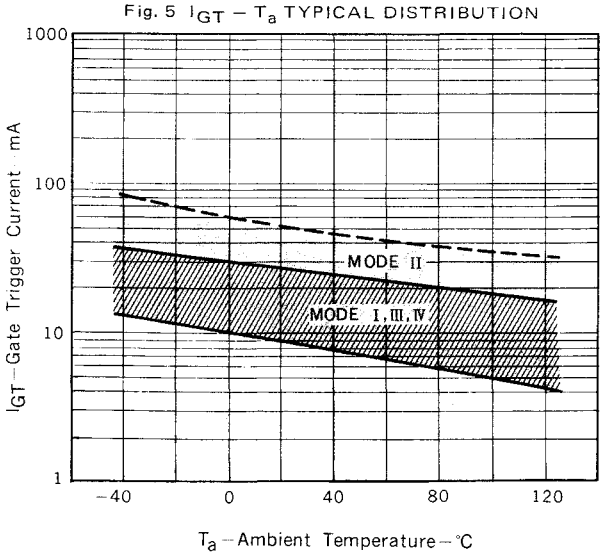


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

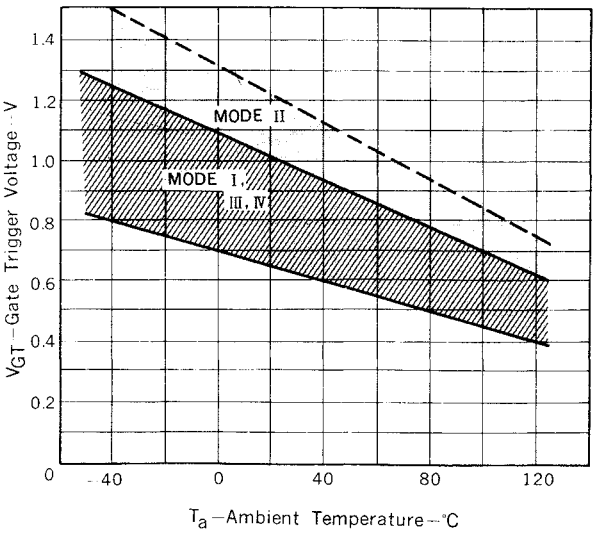


Fig. 7 $i_{GT} - \tau$ TYPICAL DISTRIBUTION

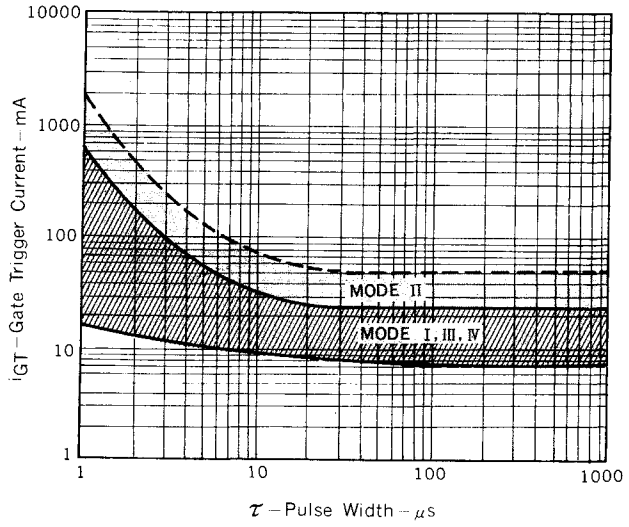


Fig. 8 $v_{GT} - \tau$ TYPICAL DISTRIBUTION

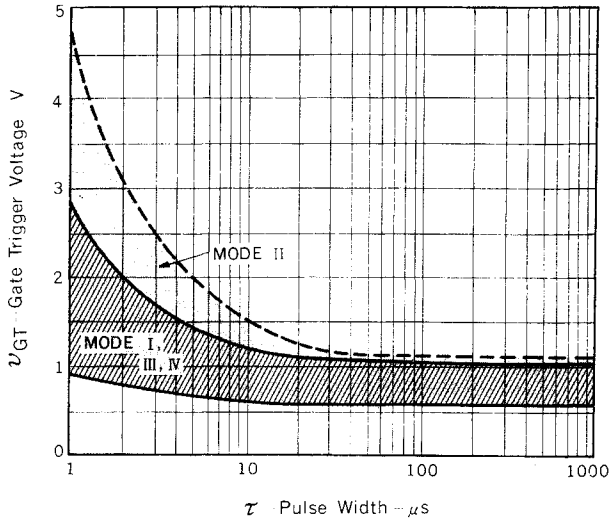


Fig. 9 $I_H - T_a$ CHARACTERISTIC

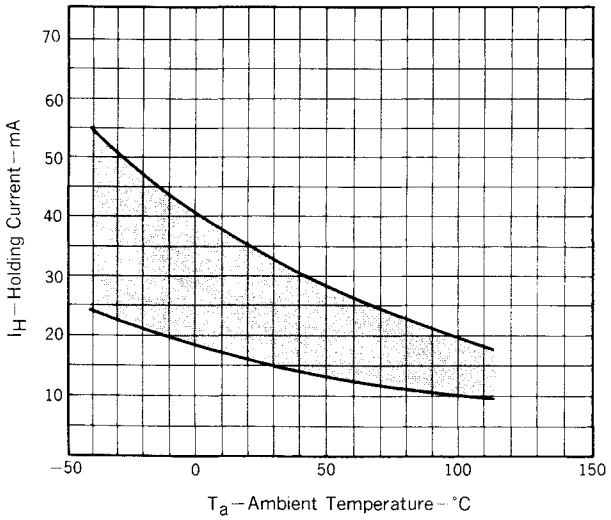


Fig. 10 $P_{T(AV)} - I_{T(RMS)}$ CHARACTERISTIC

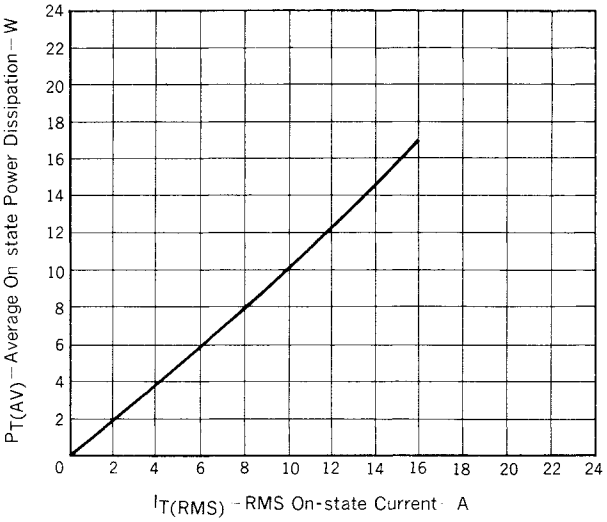


Fig. 11 $T_c - I_{T(RMS)}$ RATING

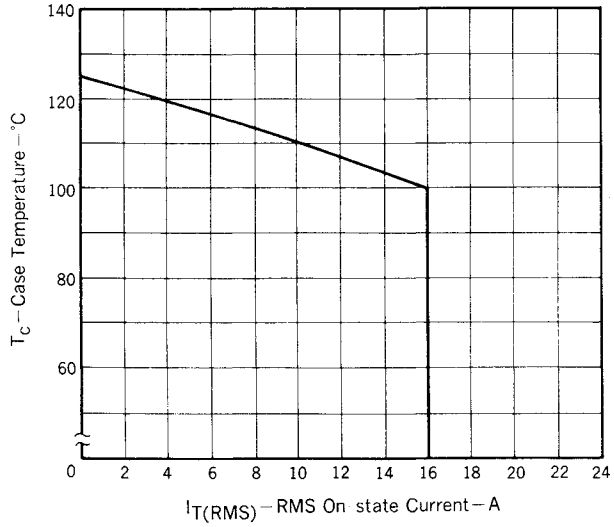


Fig. 12 $T_a - I_{T(RMS)}$ RATING

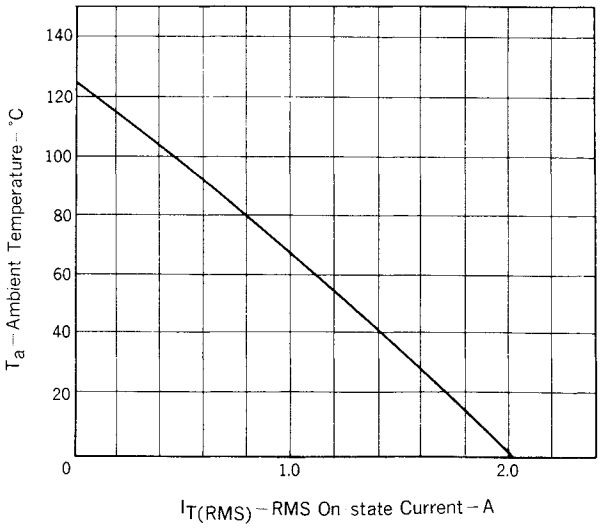
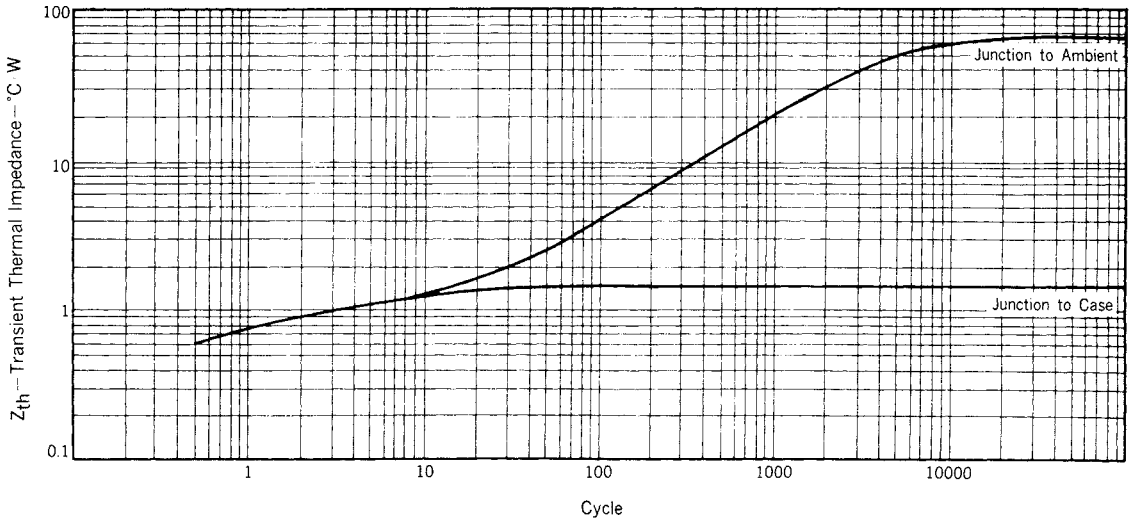


Fig. 13 Z_{th} CHARACTERISTIC



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SC–1036
OCT.–1–85M
Printed in Japan