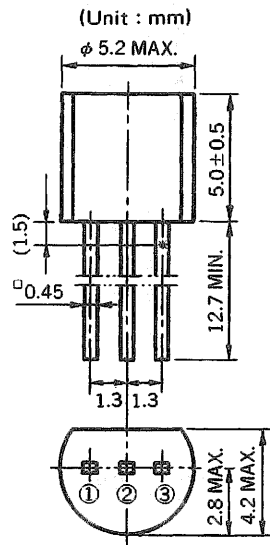


1 A MOLD TRIAC
PACKAGE DIMENSIONS

Pin Connection

1. T₁ Terminal
2. Gate
3. T₂ Terminal

* Measure point of Case Temperature

DESCRIPTION

The AC01DGM is all diffused type TRIAC granted RMS On-state Current 1 Amps, with rated voltages up to 400 volts.

This is designed specifically to be driven by low-level logic in any gating mode.

FEATURES

- The AC01DGM offers sensitive gate specs of 3 and 5 mA, in all for quadrants.
- You can fill the gap between microprocessor controls and the power-output requirements.
- This is housed in the popular TO-92 package.
- The package features excellent environmental stress and temperature cycling.

APPLICATIONS

Solid-state relays, microprocessor interfacing, TTL logic and various solid-state switch designs alone or with larger TRIAC.

MAXIMUM RATINGS

ITEM	SYMBOL	MAXIMUM RATINGS	UNIT	NOTE
Repetitive Peak Off Voltage	V _{DRM}	400	V	
Non-repetitive Peak Off Voltage	V _{DSM}	500	V	
RMS On-State Current	I _{T(RMS)}	1 (T _c = 49 °C)	A	Fig. 11
Peak Surge On-State Current	I _{TSM}	9 (50 Hz), 10 (60 Hz)	A	Fig. 2
Fusing Current	i ² t	0.2 (1 ms ≤ t ≤ 10 ms)	A ² s	
Peak Gate Power Dissipation	P _{GM}	1 (f ≥ 50 Hz, Duty ≤ 10 %)	W	
Average Gate Power Dissipation	P _{G(AV)}	0.1	W	
Peak Gate Current	I _{GM}	±0.5 (f ≥ 50 Hz, Duty ≤ 10 %)	A	
Junction Temperature	T _j	125	°C	
Storage Temperature	T _{stg}	-55 to +150	°C	

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	—	—	10	μA	
				T _j = 125 °C	—	—	100		
On-State Voltage		V _{TM}	I _{TM} = 1.2 A	—	—	1.5	V	Fig. 1	
DC Gate Trigger Current	MODE I	I _{GT}	V _{DM} = 12 V R _L = 100 Ω	G; Positive, T ₂ ; Positive	—	—	3	mA	Fig. 5, 7
	II			G; Negative, T ₂ ; Positive	—	—	5		
	III			G; Negative, T ₂ ; Negative	—	—	3		
	IV			G; Positive, T ₂ ; Negative	—	—	3		
DC Gate Trigger Voltage	MODE I	V _{GT}	V _{DM} = 12 V R _L = 100 Ω	G; Positive, T ₂ ; Positive	—	—	1.0	V	Fig. 6, 8
	II			G; Negative, T ₂ ; Positive	—	—	1.5		
	III			G; Negative, T ₂ ; Negative	—	—	1.0		
	IV			G, Positive, T ₂ ; Negative	—	—	1.0		
Gate Non-Trigger Voltage		V _{GD}	T _j = 125 °C, V _{DM} = 1/2 V _{DRM}	0.1	—	—	V		
DC Holding Current		I _H	V _D = 24 V, I _{TM} = 1 A	—	2	5	mA		
Critical Rate of Rise of Off-State Voltage		dv/dt	T _j = 125 °C, V _{DM} = 2/3 V _{DRM} Gate Open Circuited Exponential Waveform	—	50	—	V/μs		
Critical Rate of Rise of Commutating Off-State Voltage		(dv/dt) _c	T _j = 125 °C, I _{TM} = 1.2 A (di _T /dt) _c = -0.5 A/ms V _{DM} = 400 V	0.5	—	—	V/μs		
Steady State		R _{th(j-c)}	Junction to Case	—	—	65	°C/W	Fig. 13	
Thermal Resistance		R _{th(j-a)}	Junction to Ambient	—	—	150	°C/W		

CHARACTERISTICS

Fig. 1 i_T - V_T CHARACTERISTIC

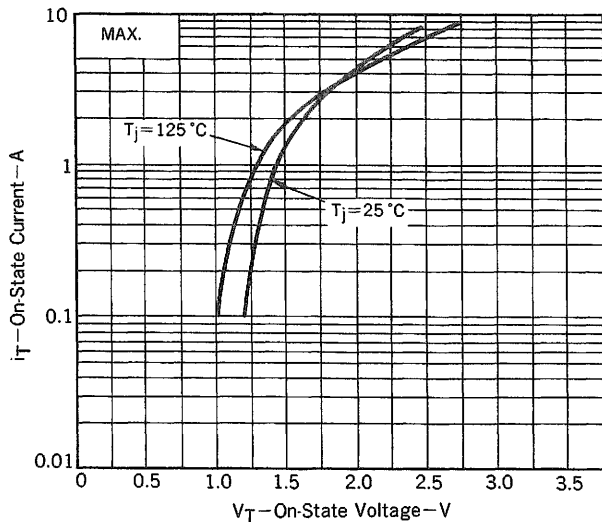


Fig. 2 I_{TSM} RATING

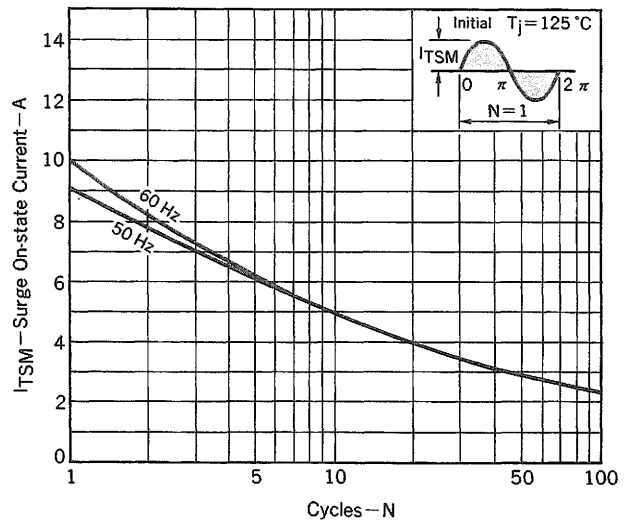


Fig. 3 $V_G - I_G$ RATING

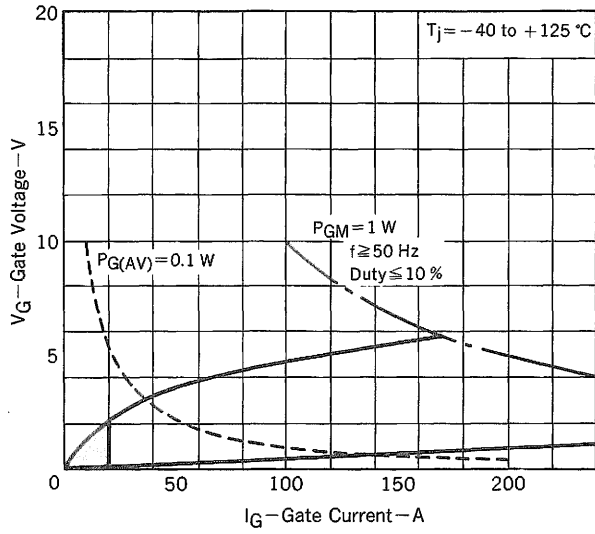


Fig. 4 GATE CHARACTERISTIC

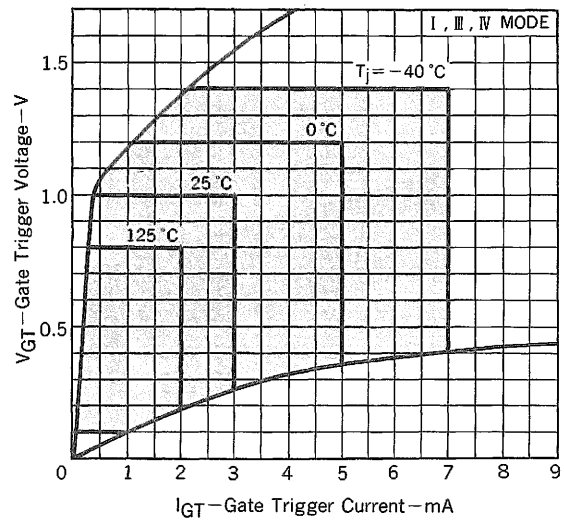


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

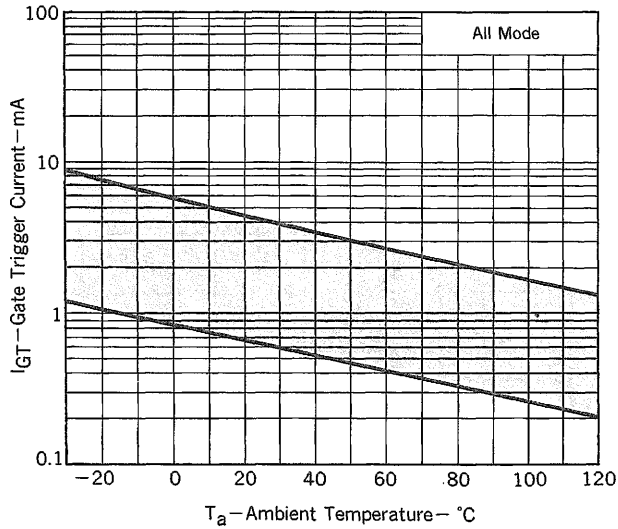


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

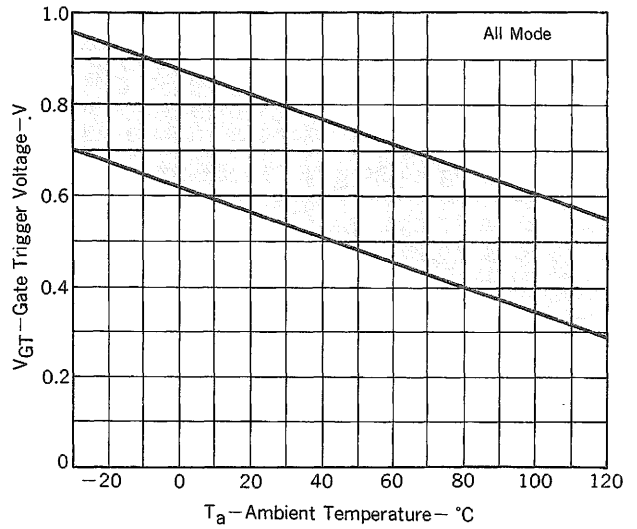


Fig. 7 $i_{GT} - \tau$ TYPICAL DISTRIBUTION

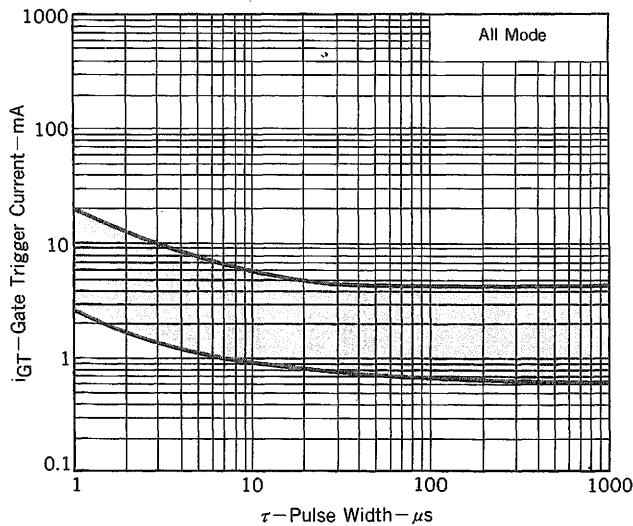


Fig. 8 $v_{GT} - \tau$ TYPICAL DISTRIBUTION

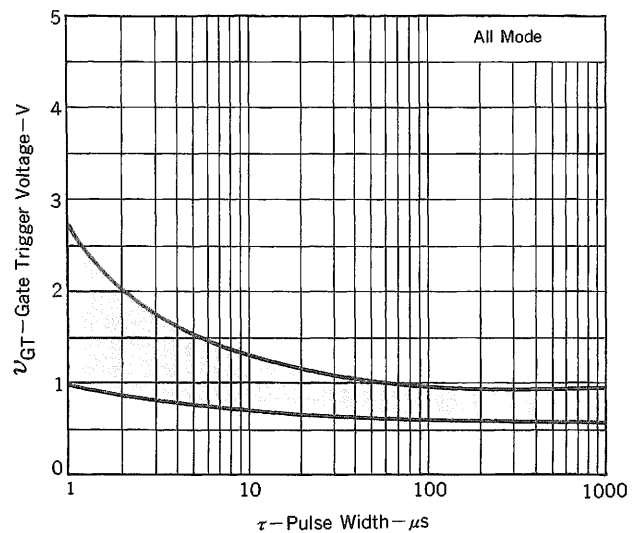


Fig. 9 $I_H - T_a$ TYPICAL DISTRIBUTION

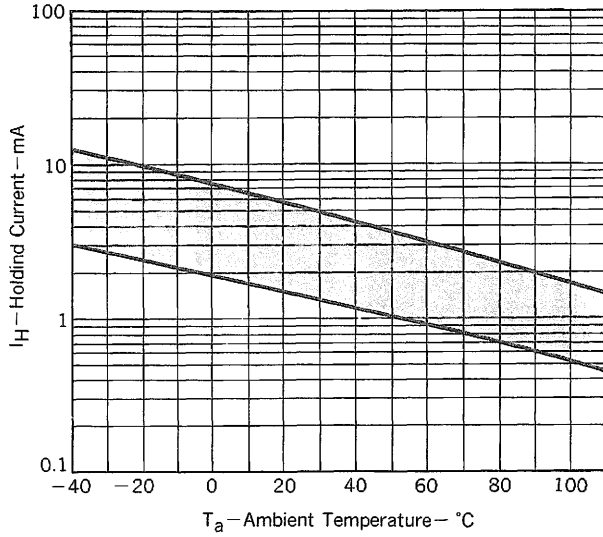


Fig. 10 $P_T(AV) - I_T(RMS)$ CHARACTERISTIC

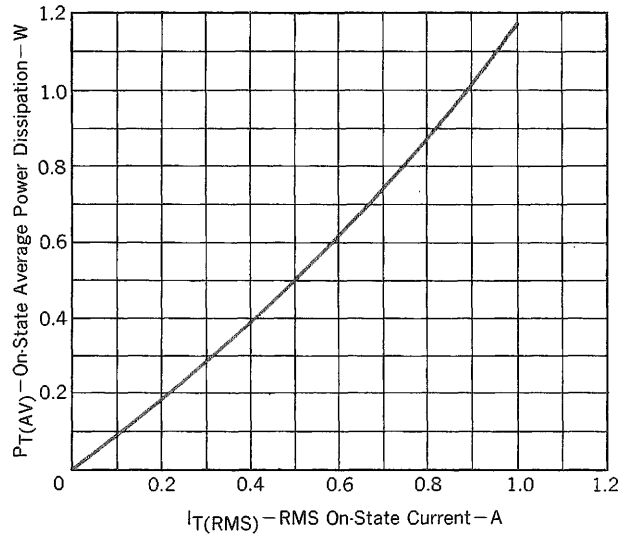


Fig. 11 $T_c - I_T(RMS)$ RATING

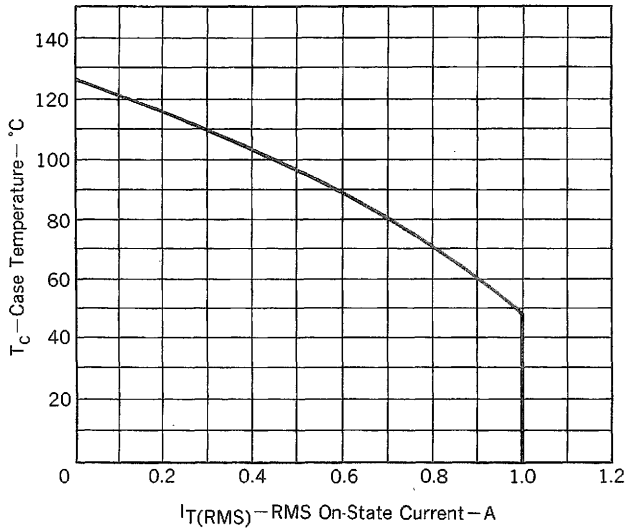


Fig. 12 $T_a - I_T(RMS)$ RATING

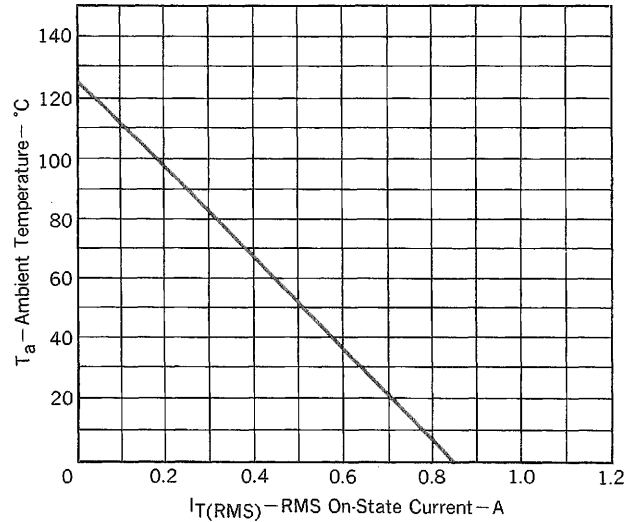


Fig. 13 Z_{th} CHARACTERISTIC

