

To our customers,

Old Company Name in Catalogs and Other Documents

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Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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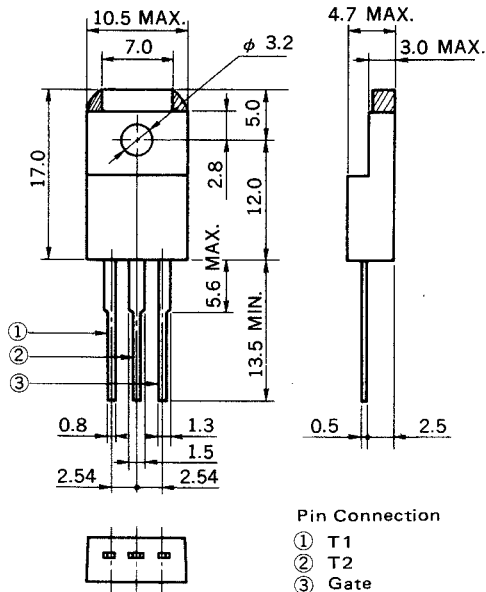
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TRIACS AC10DSM to AC10FSM

10 A Mold Isolated TRIAC

PACKAGE DIMENSIONS

(Unit: mm)



Pin Connection

- ① T1
- ② T2
- ③ Gate

The AC10DSM to AC10FSM are all diffused mold type triac granted RMS On-state current 10 Amps, with rated voltages up to 600 volts.

FEATURES

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

APPLICATIONS

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

MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	AC10DSM	AC10ESM	AC10FSM	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	$I_T(RMS)$	10 ($T_c = 85^\circ C$)			A	
Peak Surge On-State Current	I_{TSM}	80 (50 Hz, Non-repetitive)			A	
Fusing Current	$\int i^2 dt$	28 ($1 ms \leq t \leq 10 ms$)			$A^2 s$	
Peak Gate Power Dissipation	P_{GM}	5.0 ($f \geq 50 Hz, Duty \leq 10 \%$)			W	
Average Gate Power Dissipation	$P_{G(AV)}$	0.5			W	
Peak Gate Current	I_{FGM}	± 3 ($f \geq 50 Hz, Duty \leq 10 \%$)			A	
Junction Temperature	T_j	-55 to +125			$^\circ C$	
Storage Temperature	T_{stg}	-55 to +125			$^\circ C$	
Isolation Voltage	-	1 500 (AC 1 min.)			V_{RMS}	

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	—	—	1.3	V	
Gate Trigger Current	I _{GT}	V _{DM} = 12 V R _L = 30 Ω	—	—	30	mA	
			—	—	80		
			—	—	30		
			—	—	30		
Gate Trigger Voltage	V _{GT}	V _{DM} = 12 V R _L = 30 Ω	—	—	1.5	V	
			—	—	2.0		
			—	—	1.5		
			—	—	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 = -5 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	—	—	3.5	°C/W	

Trigger Mode & Test Circuit

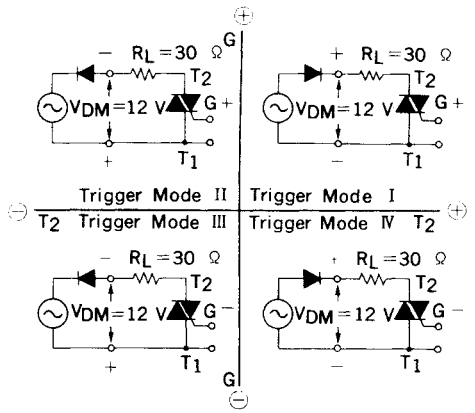


Fig. 1 i_T - v_T CHARACTERISTIC

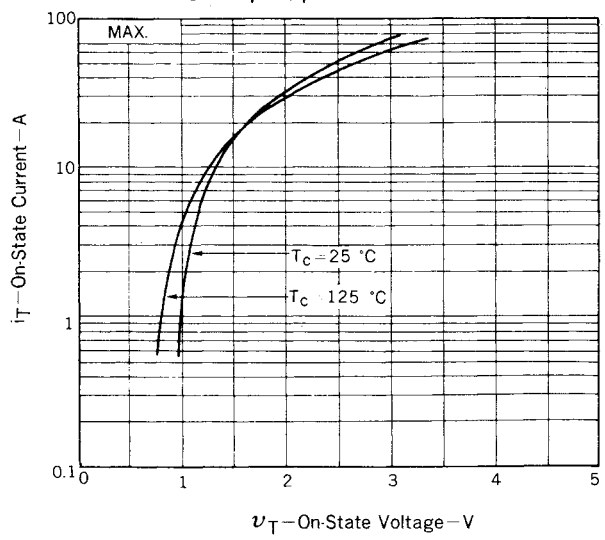


Fig. 2 I_{TSM} RATING

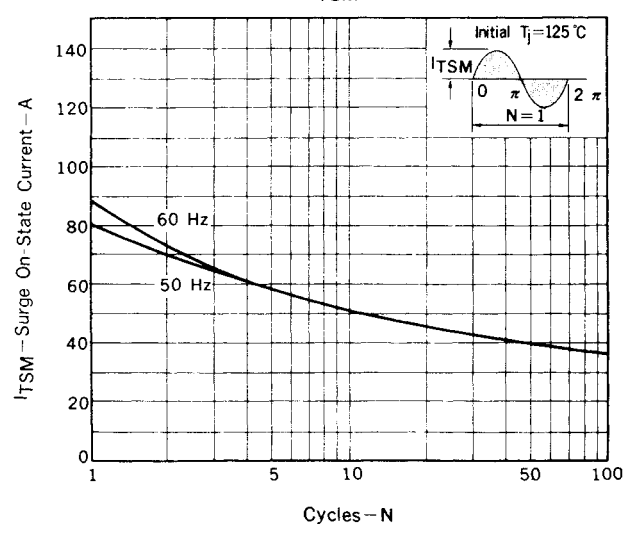


Fig. 3 $V_G - I_G$ RATING

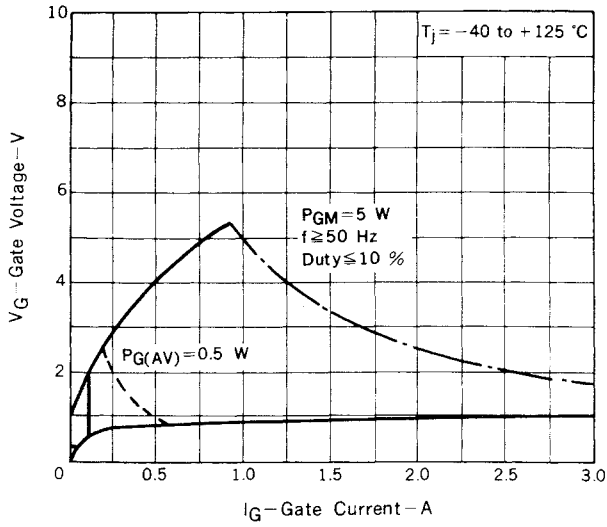


Fig. 4 $V_{GT} - I_{GT}$ CHARACTERISTIC

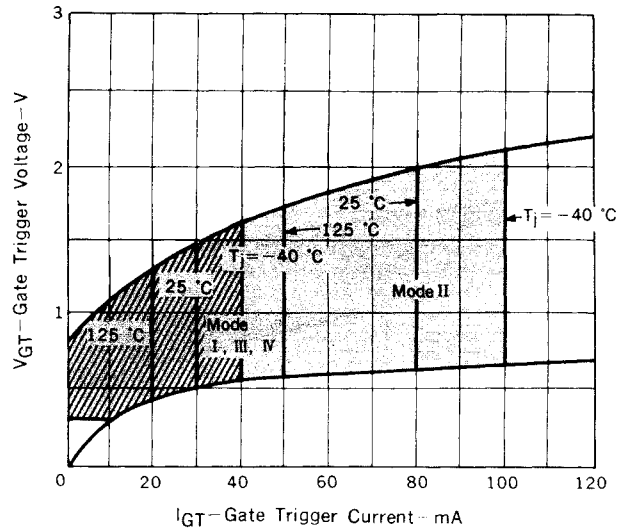


Fig. 5 $I_{GT} - T_a$ TYPICAL DISTRIBUTION

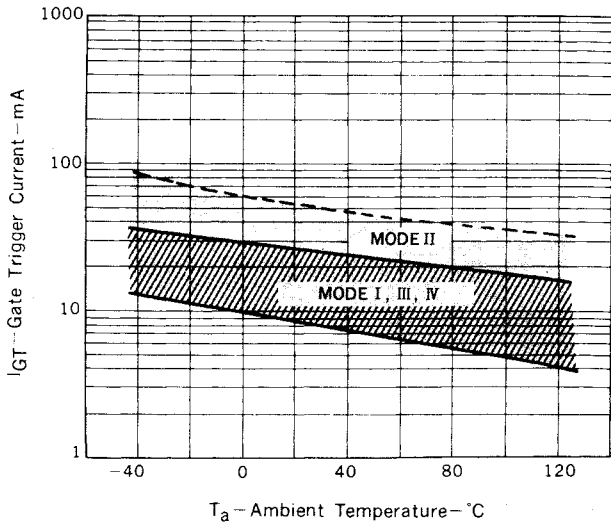


Fig. 6 $V_{GT} - T_a$ TYPICAL DISTRIBUTION

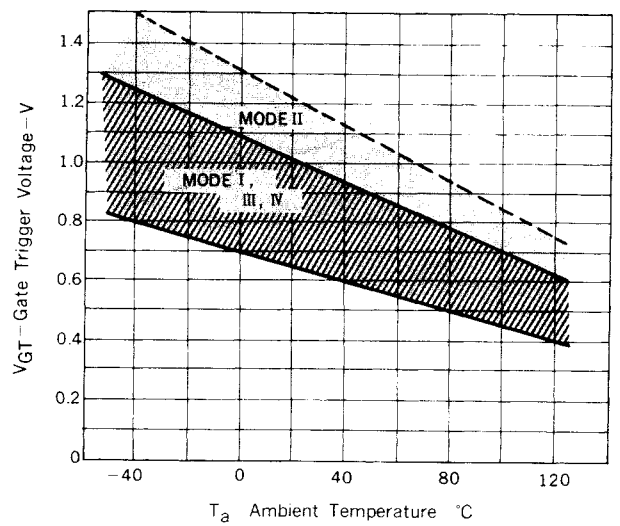


Fig. 7 $i_{GT} - \tau$ TYPICAL DISTRIBUTION

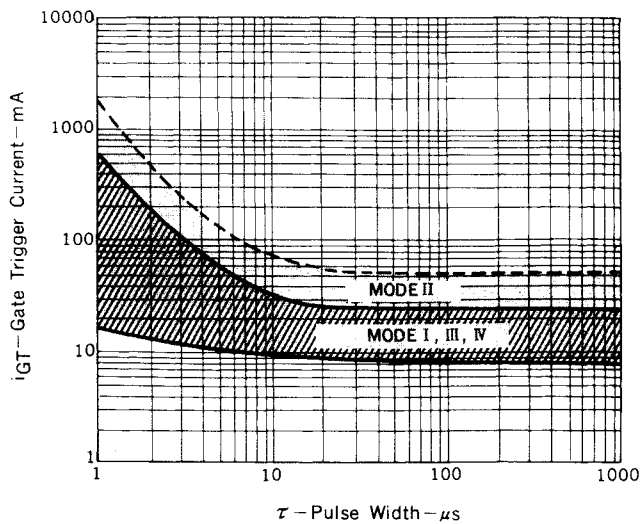


Fig. 8 $v_{GT} - \tau$ TYPICAL DISTRIBUTION

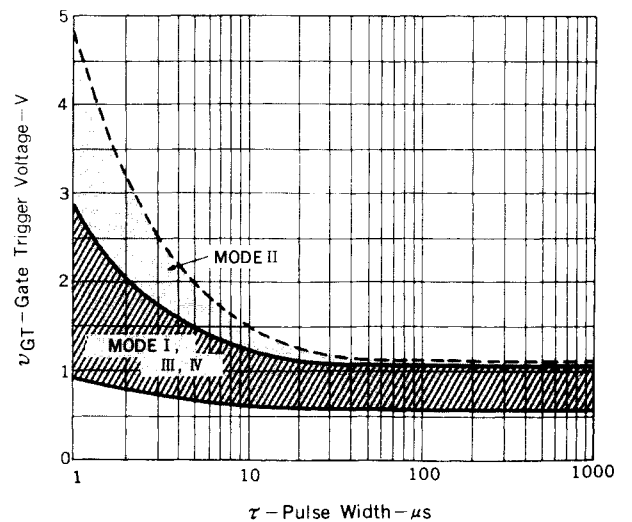


Fig. 9 $I_H - T_a$ TYPICAL DISTRIBUTION

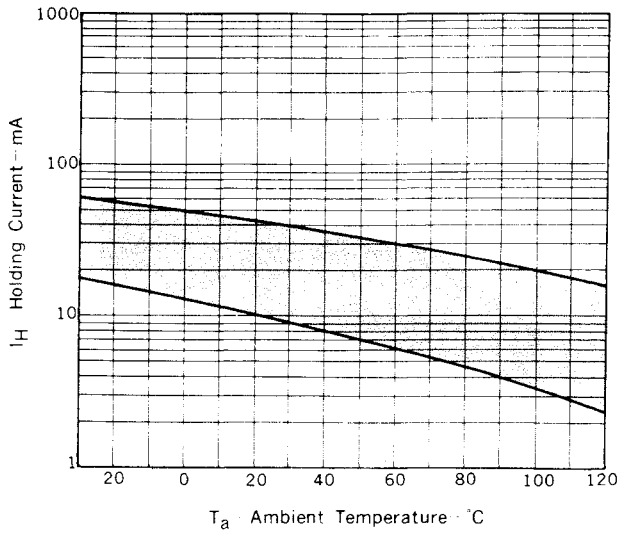


Fig. 10 $P_{T(AV)} - I_T(RMS)$ CHARACTERISTIC

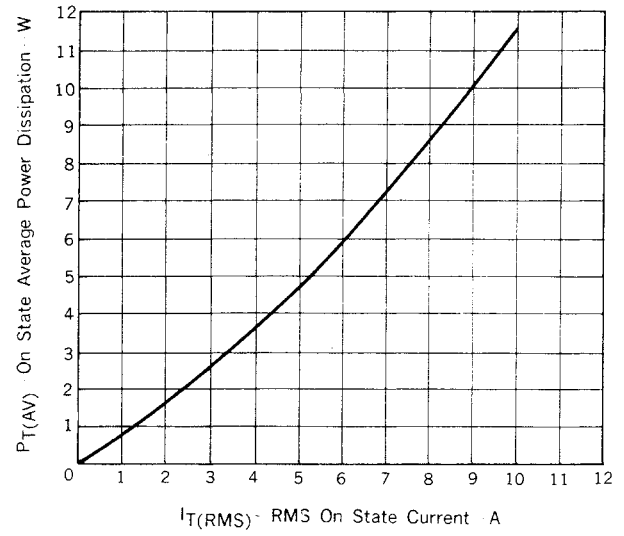


Fig. 11 $T_c - I_T(RMS)$ RATING

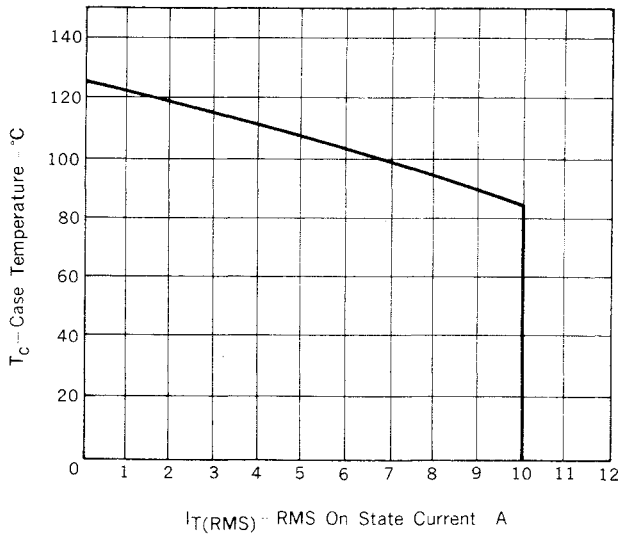


Fig. 12 $T_a - I_T(RMS)$ RATING

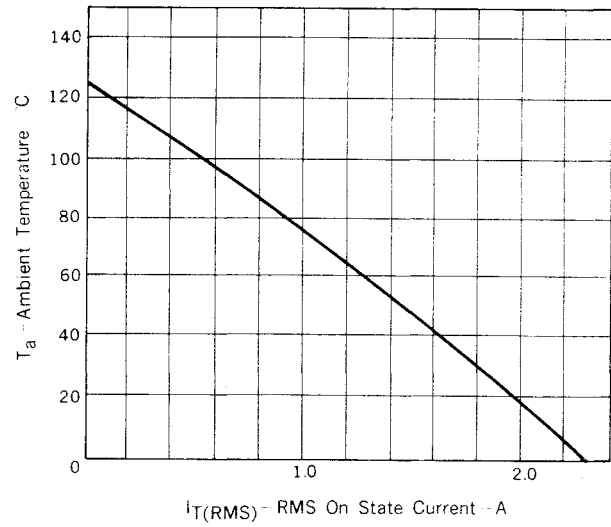


Fig. 13 Z_{th} CHARACTERISTIC

