

AC03DSMA, AC03FSMA



DESCRIPTION

The AC03DSMA and AC03FSMA are all diffused mold type triac granted RMS on-state current 3 A, with rated voltages up to 600 V.

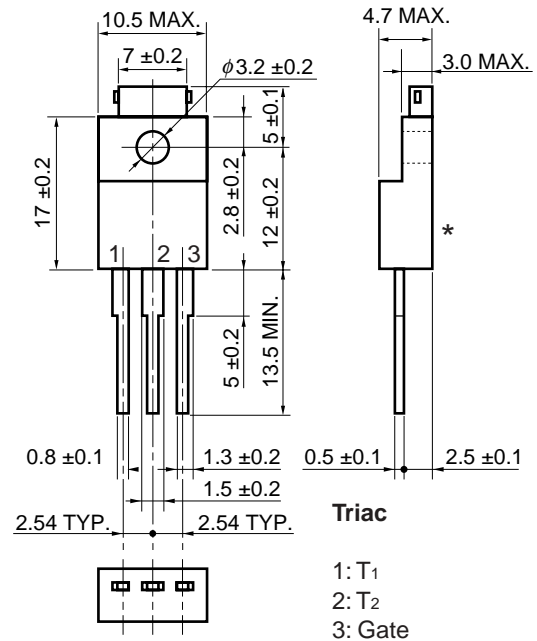
FEATURES

- Isolated plastic package (modified TO-220AB)
- 30 A surge current

APPLICATIONS

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

★ PACKAGE DRAWING (Unit: mm)



★ MAXIMUM RATINGS

*: T_c test bench-mark

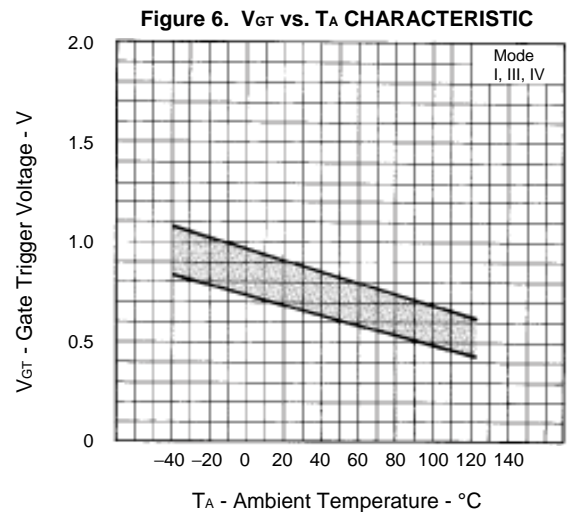
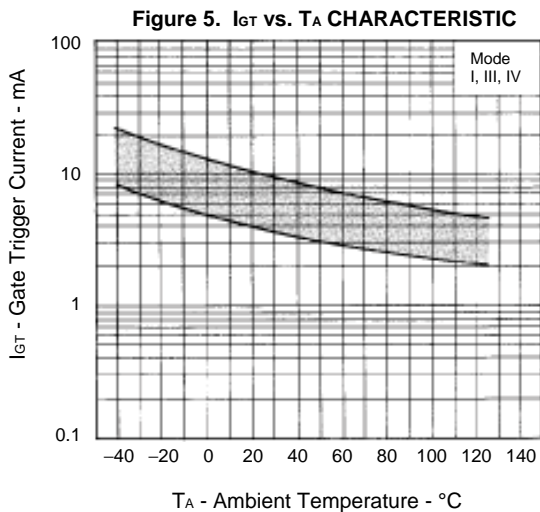
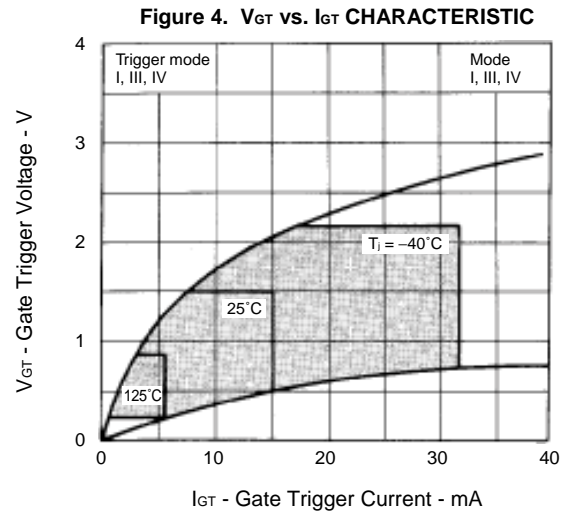
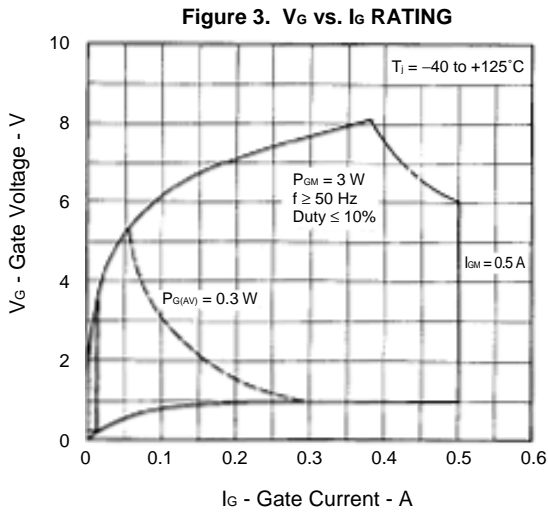
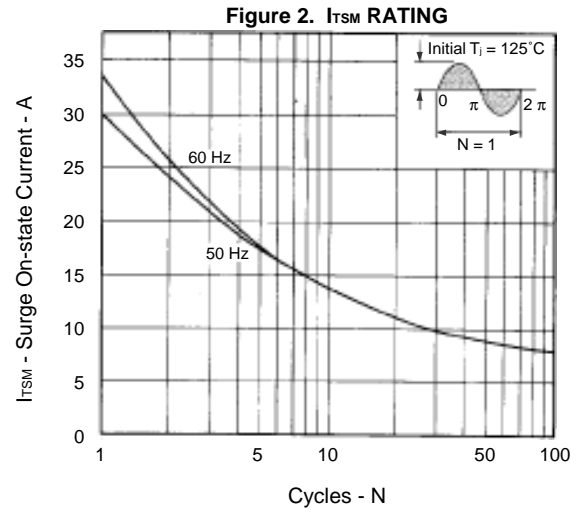
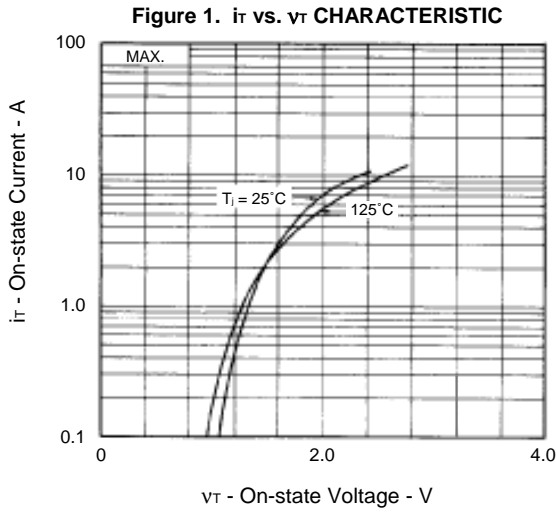
Standard weight: 2 g

Parameter	Symbol	AC03DSMA	AC03FSMA	Unit	Remarks
Non-repetitive Peak Off-state Voltage	V _{DSM}	500	700	V	–
Repetitive Peak Off-state Voltage	V _{DRM}	400	600	V	–
RMS On-state Current	I _{T(RMS)}	3 (T _c = 109°C)		A	Refer to Figure 11 and 12 .
Surge On-state Current	I _{TSM}	30 (50 Hz 1 cycle) 33 (60 Hz 1 cycle)		A	Refer to Figure 2 .
Fusing Current	$\int i_t^2 dt$	4 (1 ms ≤ t ≤ 10 ms)		A ² s	–
Critical Rate Rise of On-state Current	di _t /dt	40		A/μs	–
Peak Gate Power Dissipation	P _{GM}	3 (f ≥ 50 Hz, Duty ≤ 10%)		W	–
Average Gate Power Dissipation	P _{G(AV)}	0.3		W	–
Peak Gate Current	I _{GM}	±0.5 (f ≥ 50 Hz, Duty ≤ 10%)		A	–
Junction Temperature	T _j	–40~+125		°C	–
Storage Temperature	T _{stg}	–55~+150		°C	–

★ ELECTRICAL CHARACTERISTICS (T_j = 25°C)

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit	Remarks	
Repetitive Peak Off-state Current	I _{DRM}	V _{DM} = V _{DRM}	T _j = 25°C	–	–	100	μA	–
			T _j = 125°C	–	–	1	mA	–
On-state Voltage	V _{TM}	I _{TM} = 5 A	–	–	1.8	V	Refer to Figure 1 .	
Gate Trigger Current	Mode I	V _{DM} = 12 V, R _L = 30 Ω	T ₂₊ , G+	–	–	12	mA	Refer to Figure 4 .
	II		T ₂₋ , G+	–	–	–		
	III		T ₂₋ , G–	–	–	12		
	IV		T ₂₊ , G–	–	–	12		
Gate Trigger Voltage	Mode I	V _{DM} = 12 V, R _L = 30 Ω	T ₂₊ , G+	–	–	1.5	V	Refer to Figure 4 .
	II		T ₂₋ , G+	–	–	–		
	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}	0.2	–	–	V	–	
Holding Current	I _H	V _{DM} = 24 V, I _{TM} = 5 A	–	10	–	mA	–	
Critical Rate Rise of Off-state Voltage	dv/dt	T _j = 125°C, V _{DM} = $\frac{2}{3}$ V _{DRM}	–	100	–	V/μs	–	
Commutating Critical Rate Rise of Off-state Voltage	(dv/dt) _c	T _j = 125°C, (di _T /dt) _c = –1.6 A/ms, V _D = 400 V	5	–	–	V/μs	–	
Thermal Resistance ^{Note}	R _{th(j-c)}	Junction to case	–	–	4.5	°C/W	Refer to Figure 13 .	
	R _{th(j-a)}	Junction to ambient	–	–	65	°C/W		

★ TYPICAL CHARACTERISTICS



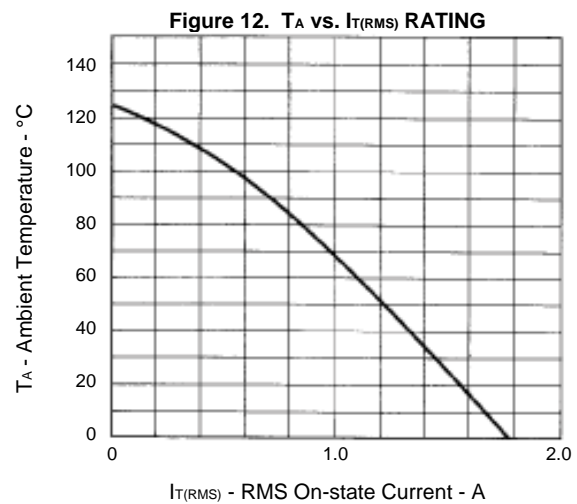
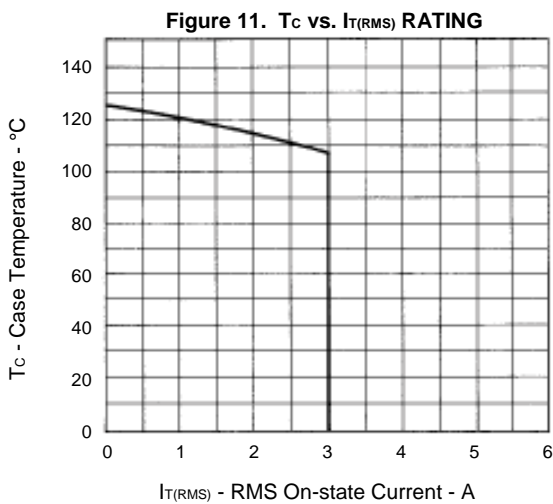
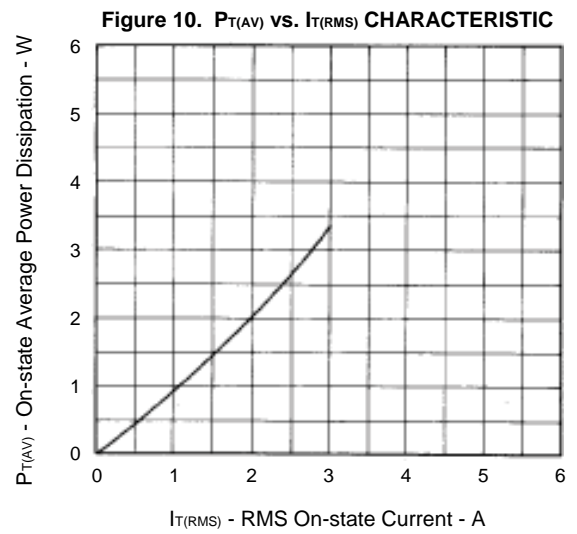
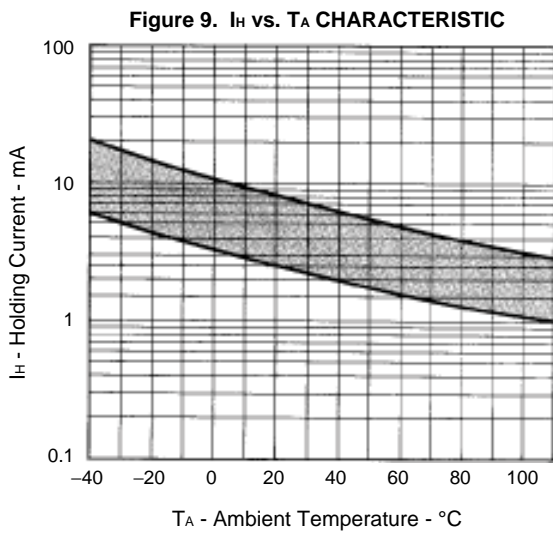
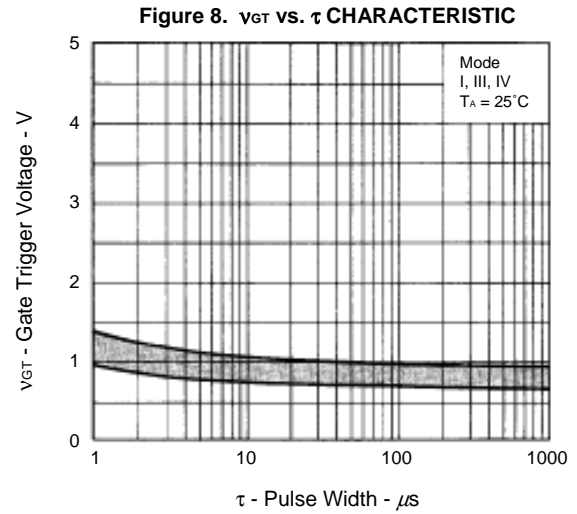
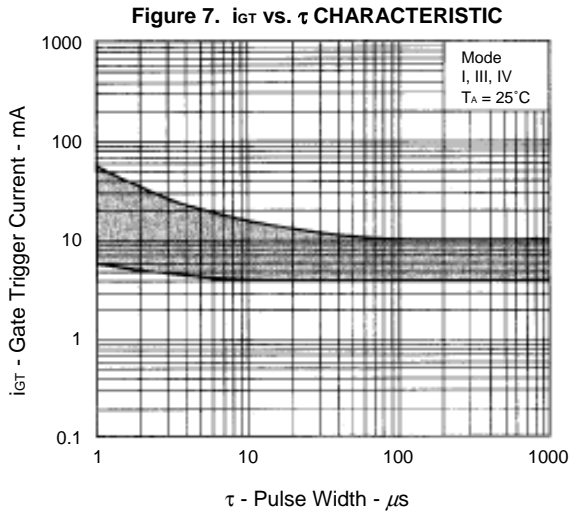


Figure 13. Z_{th} CHARACTERISTIC

