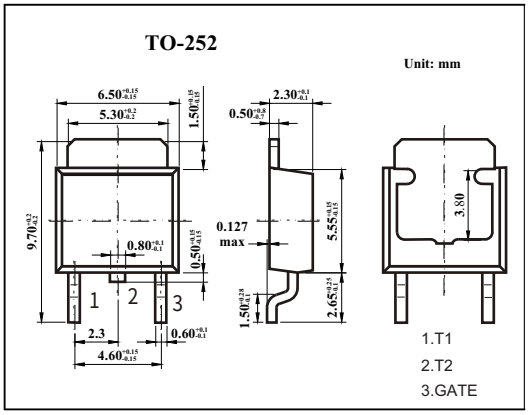
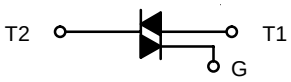
Silicon Bidirectional Thyristors

CR3AM



Features

- Blocking voltage to 400 V
- General purpose bidirectional switching



Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Repetitive peak off-state voltages	V_{DRM},V_{RRM}	400	V
RMS on-state current	$I_{T(RMS)}$	3	A
Non-repetitive peak on-state current	I_{TSM}	30	A
Circuit Fusing Considerations (t = 8.3 ms)	I^2t	3.7	A^2s
Peak Gate Voltage	V_{GM}	6	V
Average Gate Power	$P_{G(AV)}$	0.3	W
Peak Gate Power	P_{GM}	3	W
Peak Gate Current	I_{GM}	0.5	A
Operating Junction Temperature Range	T_J	-40 to 125	℃
Storage Temperature Range	T_{stg}	-40 to 150	℃

Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test conditions		Min	Typ	Max	Unit
Peak Repetitive Blocking Current	I_{DRM}, I_{RRM}	V_D = Rated V_{DRM}, V_{RRM}; Gate Open				2	mA
Peak On-State Voltage	V_{TM}	I_T=4.5 A				1.5	V
Gate trigger current	I_{GT}	T_2(+), G(+)	V_D= 6 V, R_L= 6 Ω R_G=330Ω			30	mA
		T_2(+), G(-)				30	mA
		T_2(-), G(-)				30	mA
		T_2(-), G(+)				-	mA
Gate trigger voltage	V_{GT}	T_2(+), G(+)	V_D= 6 V, R_L= 6 Ω R_G=330Ω			1.5	V
		T_2(+), G(-)				1.5	V
		T_2(-), G(-)				1.5	V
		T_2(-), G(+)				-	V
DC Gate Non-trigger Voltage	V_{GD}	V_D=1/2V_{DRM}		0.2			V

Marking

Marking	CR3AM

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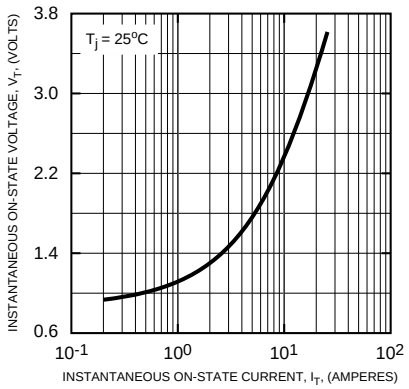
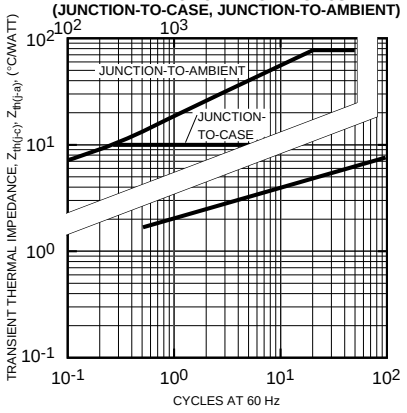
■ Typical Characteristics

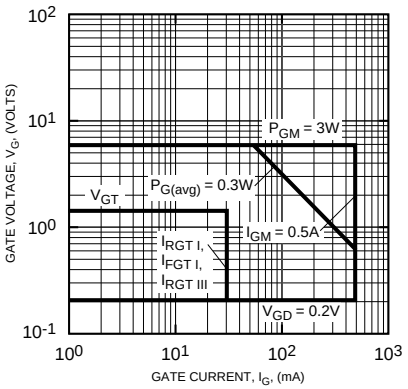
MAXIMUM ON-STATE CHARACTERISTICS



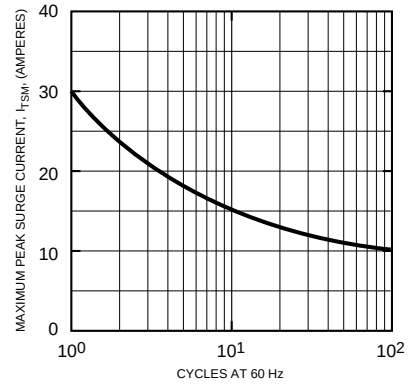
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE, JUNCTION-TO-AMBIENT)



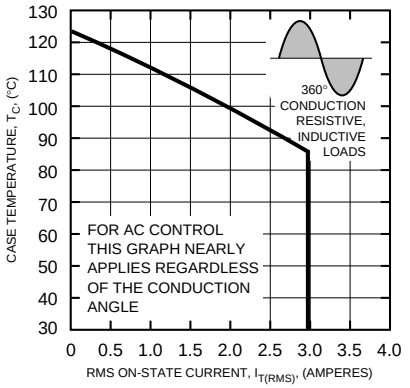
GATE CHARACTERISTICS (I, II, III)



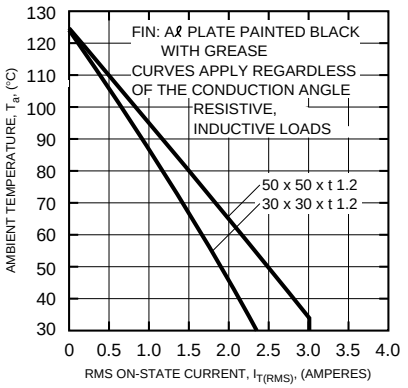
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



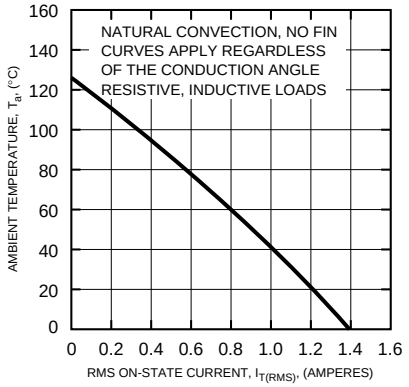
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



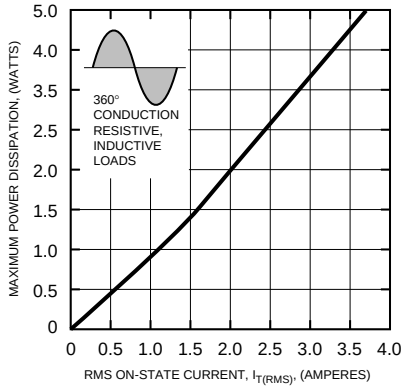
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



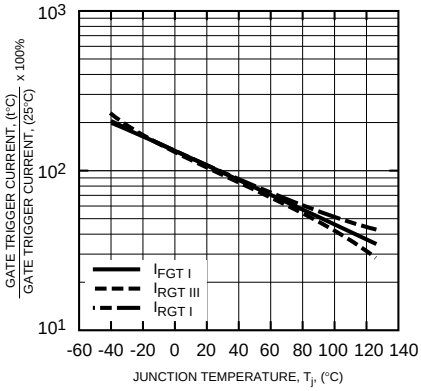
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



MAXIMUM ON-STATE POWER DISSIPATION



GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



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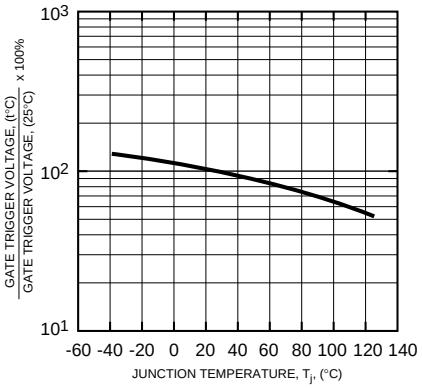
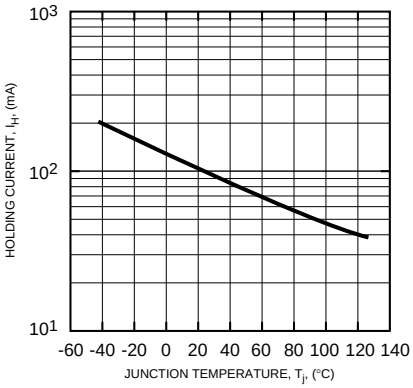
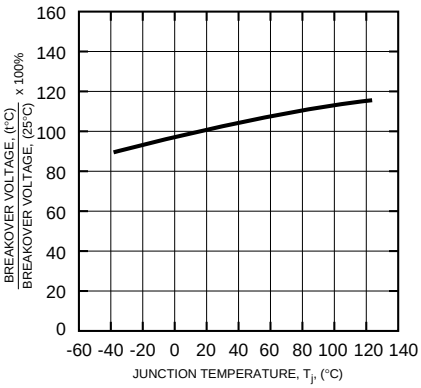
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



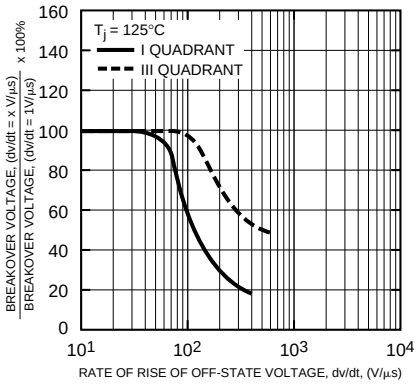
HOLDING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



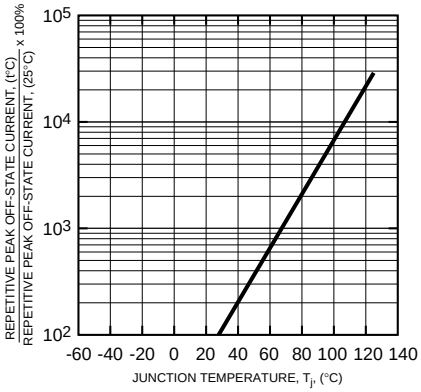
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



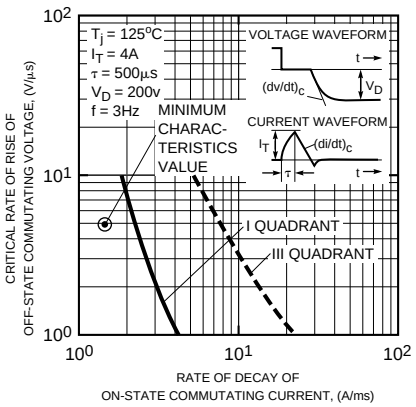
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE (TYPICAL)



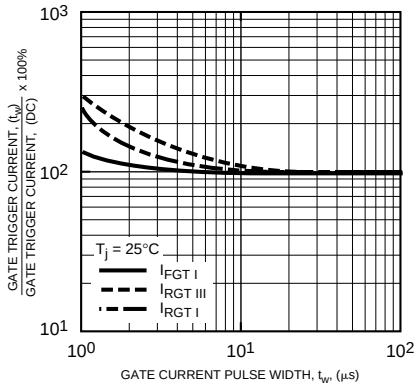
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



COMMUTATION CHARACTERISTICS (TYPICAL)



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH (TYPICAL)



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS