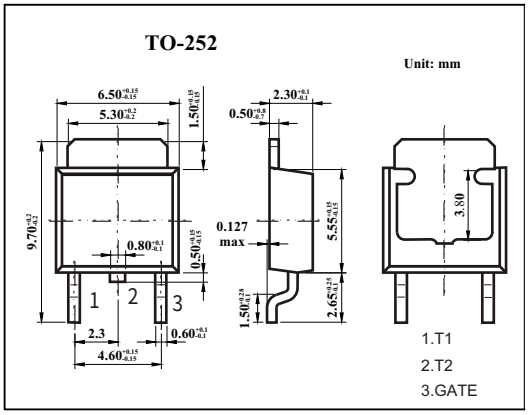
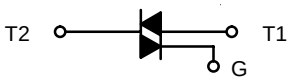
Silicon Bidirectional Thyristors

CR5AM



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	$I_{T(RMS)}$	5	A
Non-repetitive peak on-state current	I_{TSM}	50	A
Circuit Fusing Considerations (t = 8.3 ms)	I^2t	10.4	A^2s
Peak Gate Voltage	V_{GM}	10	V
Average Gate Power	$P_{G(AV)}$	0.3	W
Peak Gate Power	P_{GM}	3	W
Peak Gate Current	I_{GM}	2	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=7A				1.8	V
Gate trigger current	I_{GT}	T_2(+), G(+)	V_D= 6 V, R_L= 6 Ω R_G=330Ω			20	mA
		T_2(+), G(-)				20	mA
		T_2(-), G(-)				20	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	CR5AM

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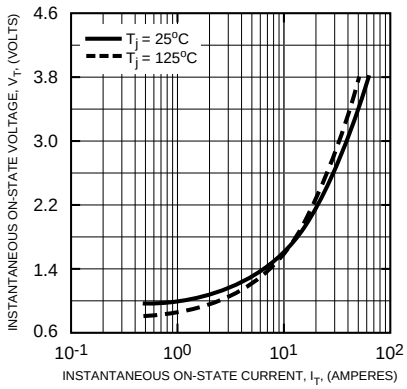
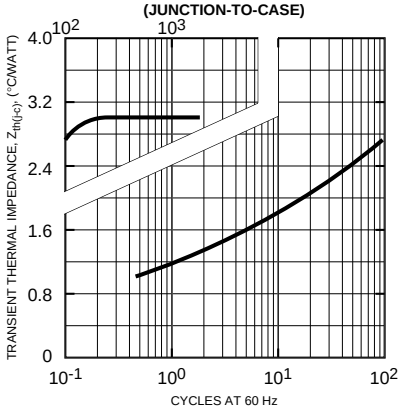
■ Typical Characteristics

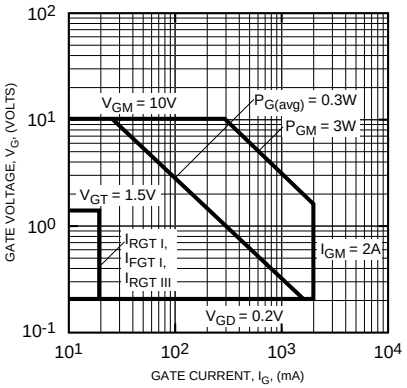
MAXIMUM ON-STATE CHARACTERISTICS



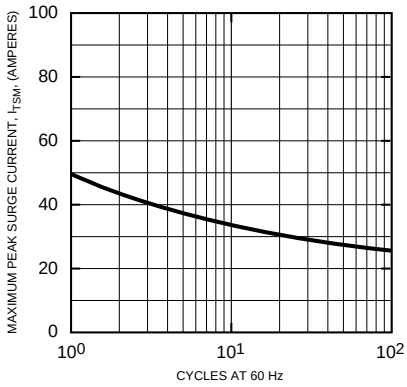
TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION-TO-CASE)



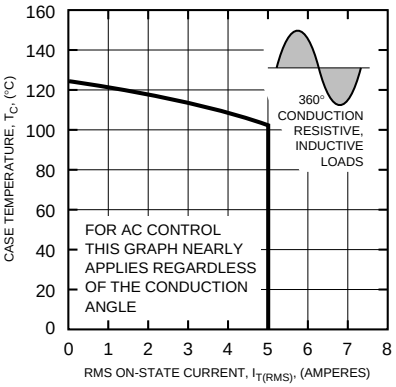
GATE CHARCTERISTICS (I, II, III)



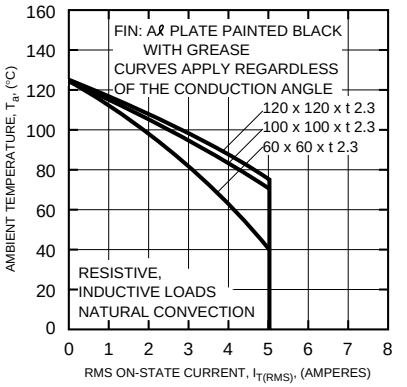
MAXIMUM SURGE CURRENT FOLLOWING RATED LOAD CONDITIONS



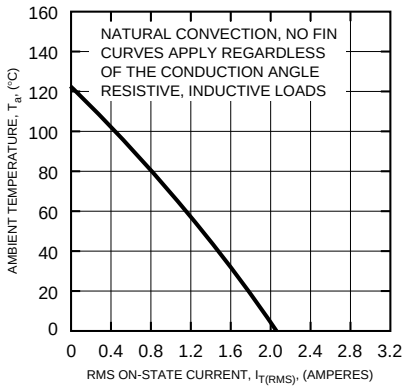
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



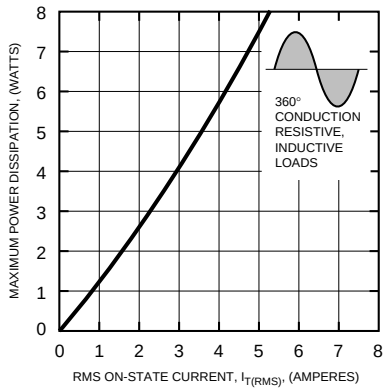
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



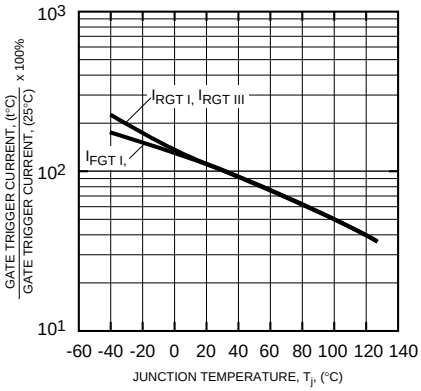
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



MAXIMUM ON-STATE POWER DISSIPATION



GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



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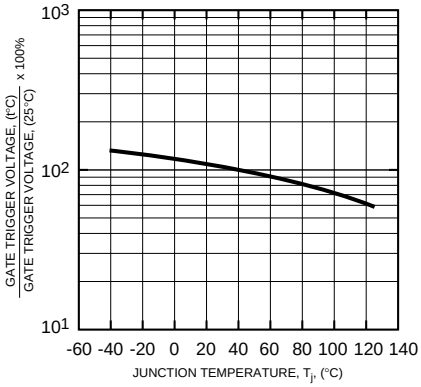
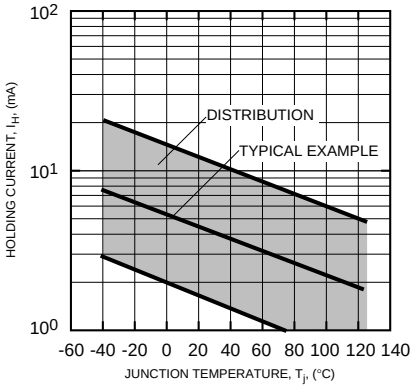
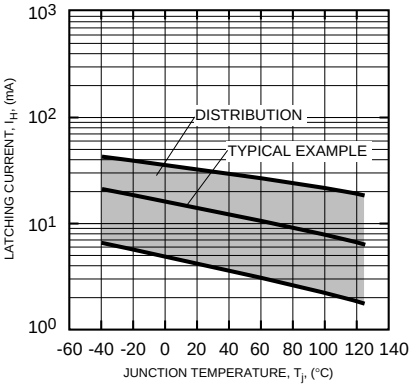
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



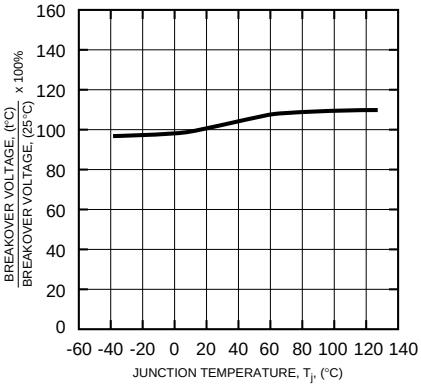
HOLDING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



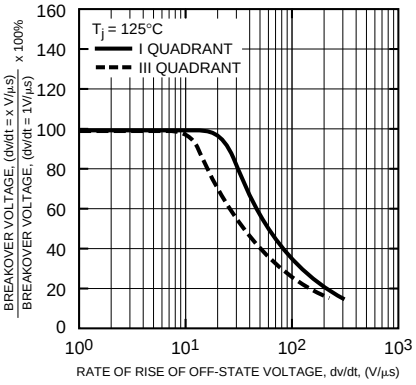
LATCHING CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



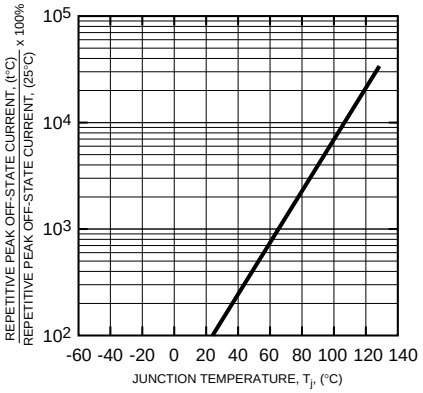
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE (TYPICAL)



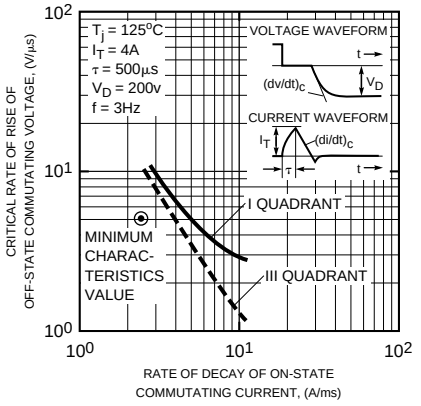
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE (TYPICAL)



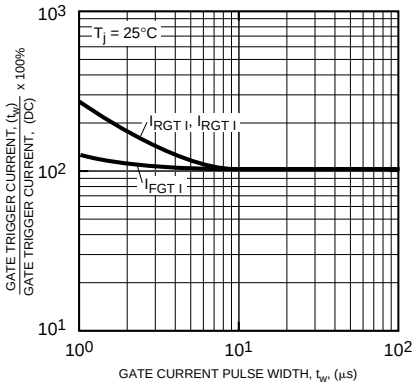
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE (TYPICAL)



COMMUTATION CHARACTERISTICS (TYPICAL)



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



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS