CR2AM

LOW POWER USE

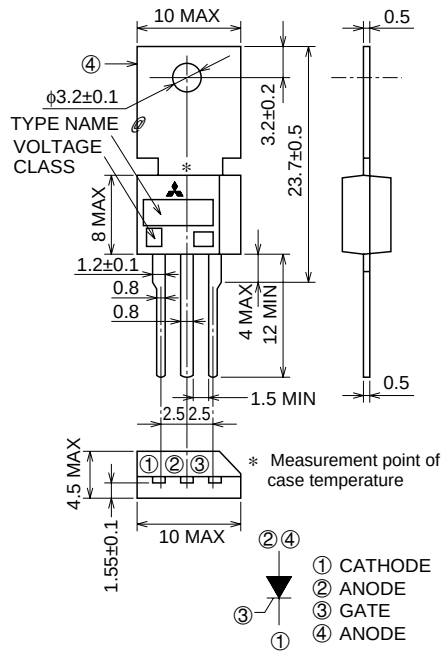
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

CR2AM

- $I_{T\,(AV)}$ 2A
- V_{DRM} 400V/600V
- I_{GT} 100μA

OUTLINE DRAWING

Dimensions in mm



TO-202

APPLICATION

Control of household equipment such as electric blandets, leakage protector, static switch, other general purpose control applications, ignitors

MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	12	
V_{RRM}	Repetitive peak reverse voltage	400	600	V
V_{RSM}	Non-repetitive peak reverse voltage	500	720	V
$V_{R\,(DC)}$	DC reverse voltage	320	480	V
V_{DRM}	Repetitive peak off-state voltage *1	400	600	V
$V_{D\,(DC)}$	DC off-state voltage *1	320	480	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_{T\,(RMS)}$	RMS on-state current		3.15	A
$I_{T\,(AV)}$	Average on-state current	Commercial frequency, sine half wave, 180° conduction, T_C=75°C	2.0	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	20	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, Surge on-state current	1.6	A^2s
P_{GM}	Peak gate power dissipation		0.5	W
$P_{G\,(AV)}$	Average gate power dissipation		0.1	W
V_{FGM}	Peak gate forward voltage		6	V
V_{RGM}	Peak gate reverse voltage		6	V
I_{FGM}	Peak gate forward current		0.3	A
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +125	°C
—	Weight	Typical value	1.6	g

*1. With Gate-to-cathode resistance R_{GK}=1kΩ

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ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{RRM}	Repetitive peak reverse current	T_j=125°C, V_{RRM} applied	—	—	0.1	mA
I_{DRM}	Repetitive peak off-state current	T_j=125°C, V_{DRM} applied, R_{GK}=1kΩ	—	—	0.1	mA
V_{TM}	On-state voltage	T_C=25°C, I_{TM}=4A, Instantaneous value	—	—	1.8	V
V_{GT}	Gate trigger voltage	T_j=25°C, V_D=6V, I_T=0.1A	—	—	0.8	V
V_{GD}	Gate non-trigger voltage	T_j=125°C, V_D=1/2V_{DRM}, R_{GK}=1kΩ	0.2	—	—	V
I_{GT}	Gate trigger current	T_j=25°C, V_D=6V, I_T=0.1A	1	—	100*3	μA
$R_{th\ (j-c)}$	Thermal resistance	Junction to case *2	—	—	10	°C/W

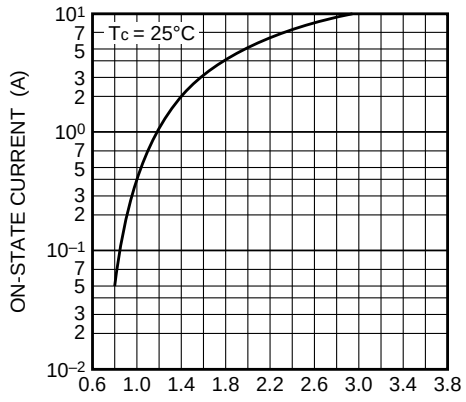
*2. The method point for case temperature is at the anode tab 1.5mm away from the molded case.
*3. If special values of I_{GT} are required, choose at least two items from those listed in the table below. (Example: AB, BC)

Item	A	B	C
I_{GT} (μA)	1 ~ 30	20 ~ 50	40 ~ 100

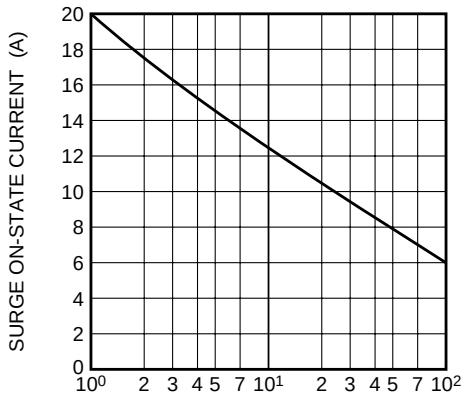
The above values do not include the current flowing through the 1kΩ resistance between the gate and cathode.

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



RATED SURGE ON-STATE CURRENT



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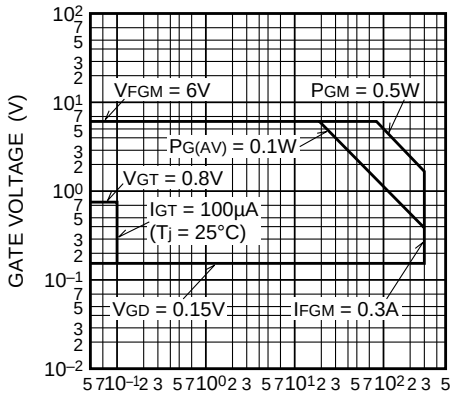
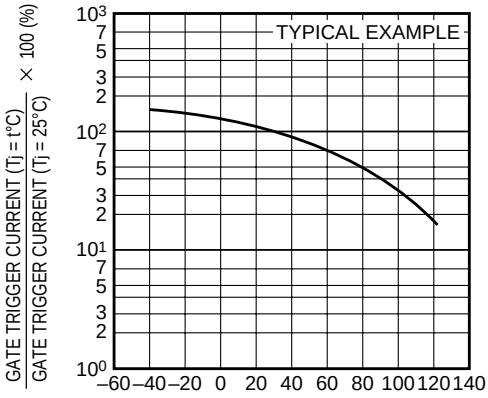
LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

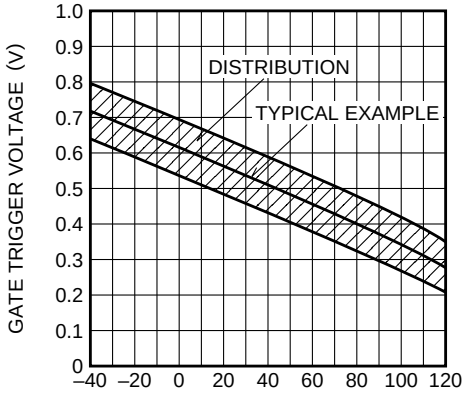
GATE CHARACTERISTICS



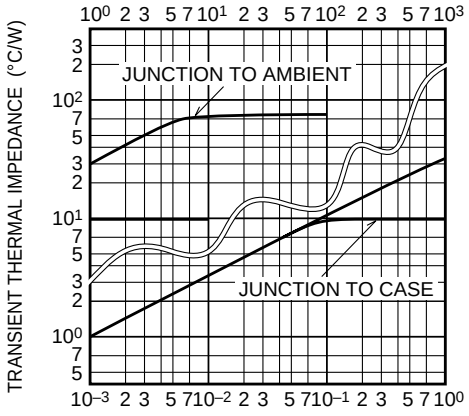
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



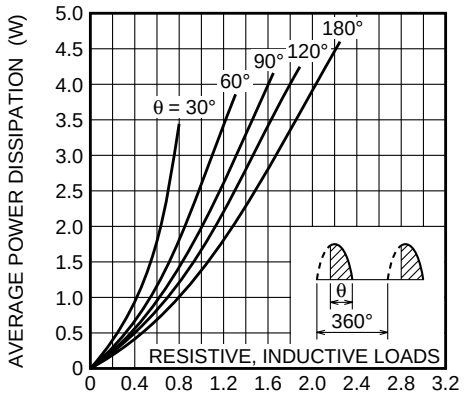
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



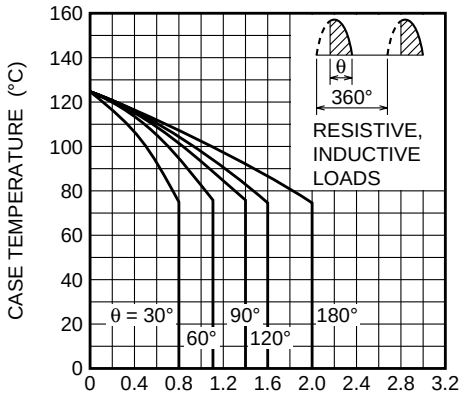
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



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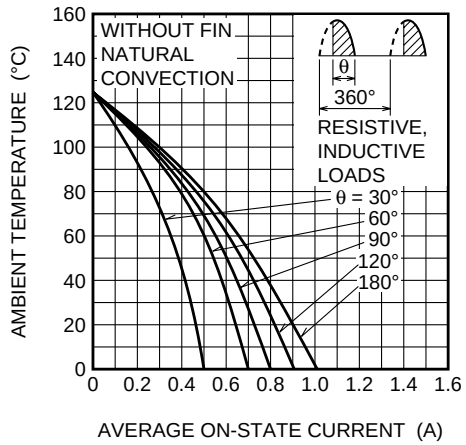
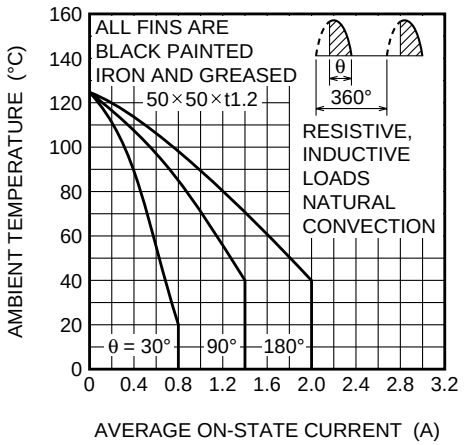
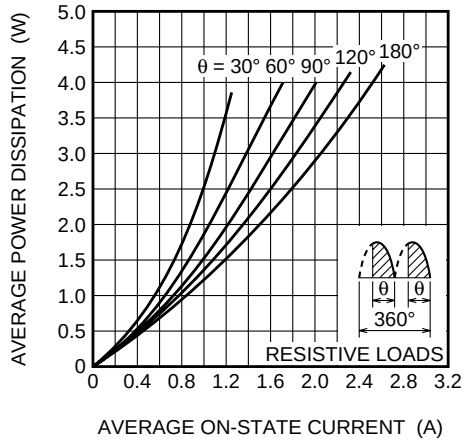
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



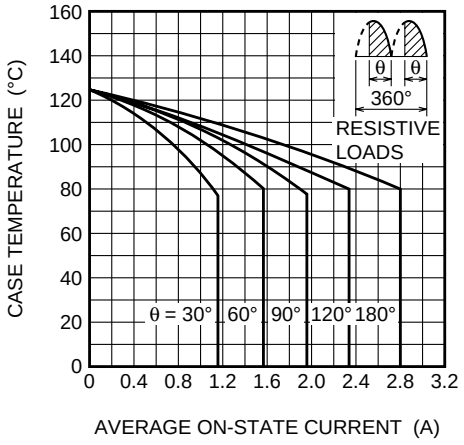
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



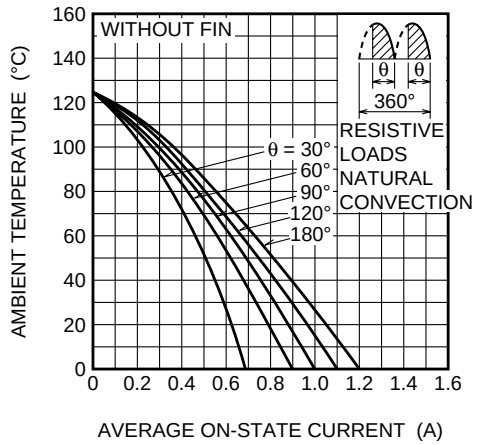
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



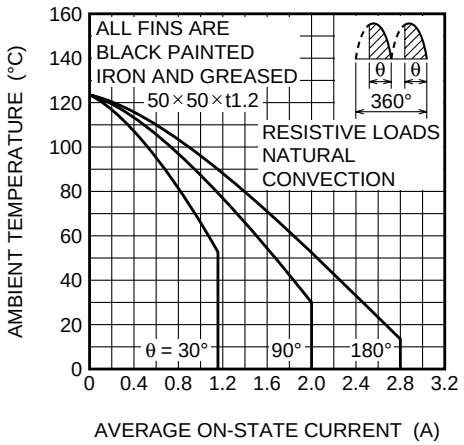
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



CR2AM

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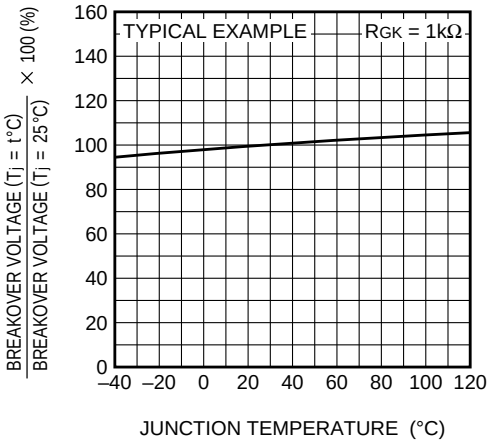
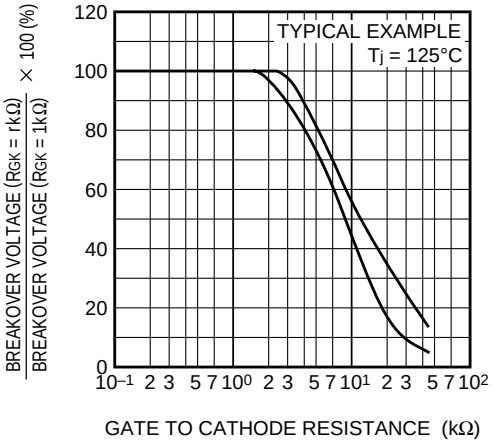
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

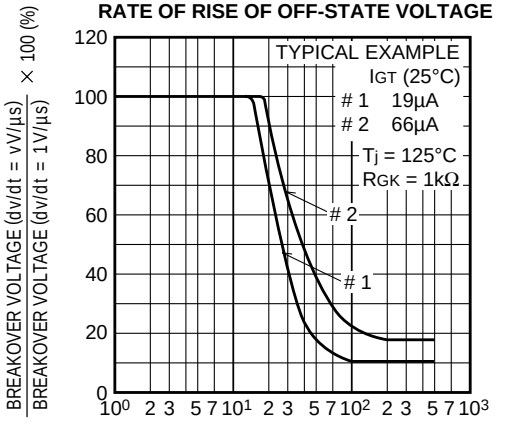
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



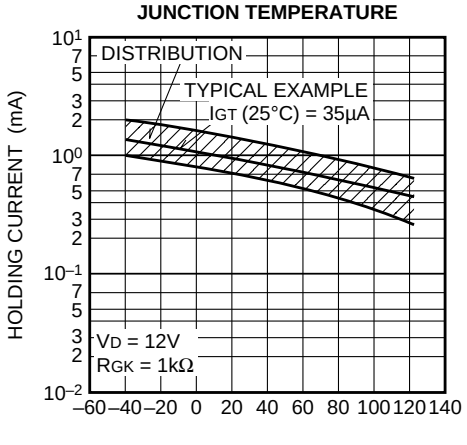
BREAKOVER VOLTAGE VS. GATE TO CATHODE RESISTANCE



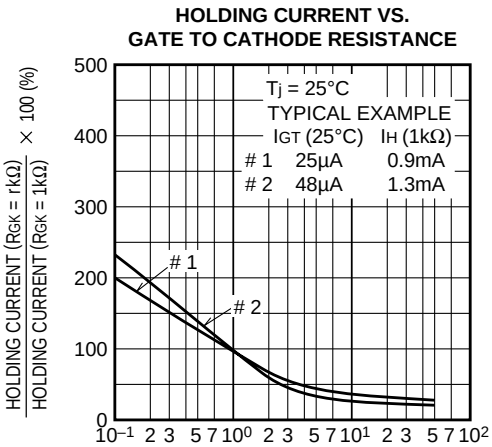
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE



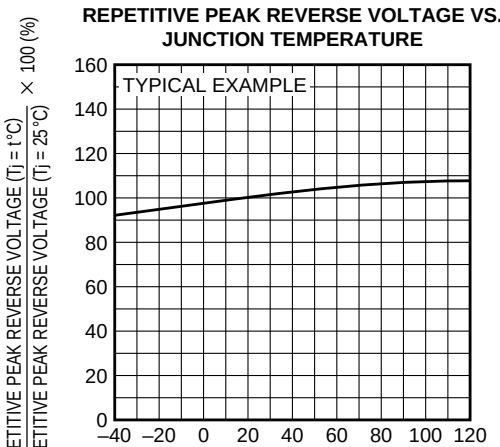
HOLDING CURRENT VS. JUNCTION TEMPERATURE



HOLDING CURRENT VS. GATE TO CATHODE RESISTANCE



REPETITIVE PEAK REVERSE VOLTAGE VS. JUNCTION TEMPERATURE



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**GATE TRIGGER CURRENT VS.
GATE CURRENT PULSE WIDTH**