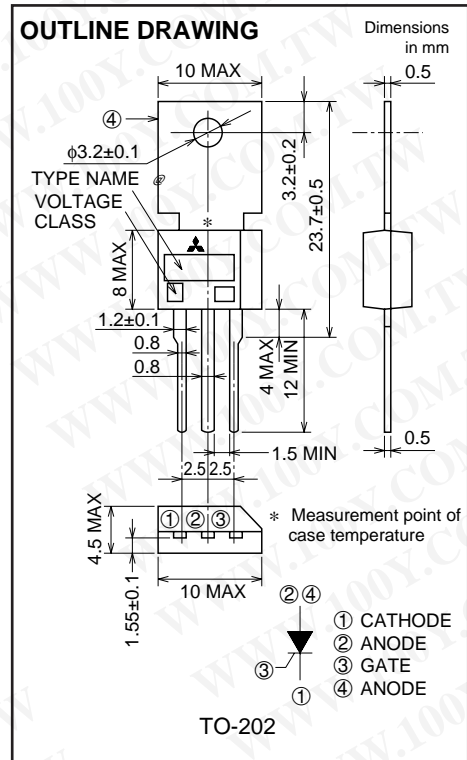
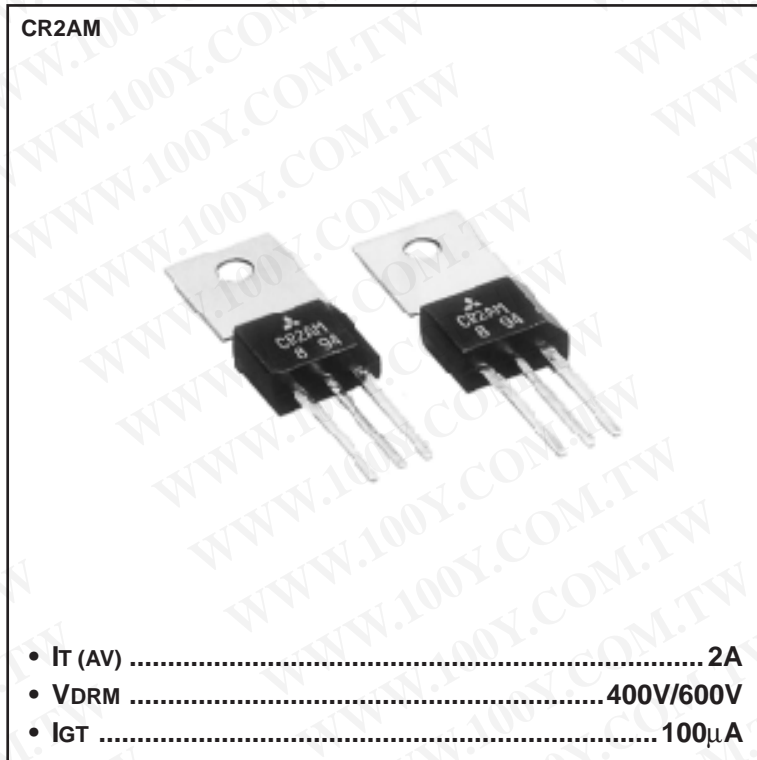


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MITSUBISHI SEMICONDUCTOR (THYRISTOR)

CR2AM

LOW POWER USE
 NON-INSULATED TYPE, GLASS PASSIVATION TYPE



APPLICATION

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

MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8	12	
VRRM	Repetitive peak reverse voltage	400	600	V
VRSM	Non-repetitive peak reverse voltage	500	720	V
VR (DC)	DC reverse voltage	320	480	V
VDRM	Repetitive peak off-state voltage *1	400	600	V
VD (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, $T_c=75^\circ\text{C}$	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 ² s
PGM	Peak gate power dissipation		0.5	W
PG (AV)	Average gate power dissipation		0.1	W
VFGM	Peak gate forward voltage		6	V
VRGM	Peak gate reverse voltage		6	V
IFGM	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 $R_{GK}=1\text{k}\Omega$

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LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

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

*2. The method point for case temperature is at the anode tab 1.5mm away from the molded case.

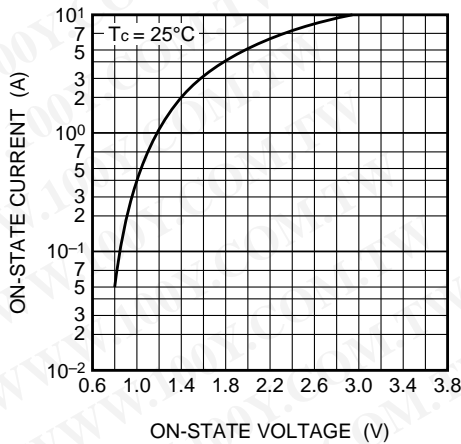
*3. If special values of IGT are required, choose at least two items from those listed in the table below. (Example: AB, BC)

Item	A	B	C
IGT (μA)	1 ~ 30	20 ~ 50	40 ~ 100

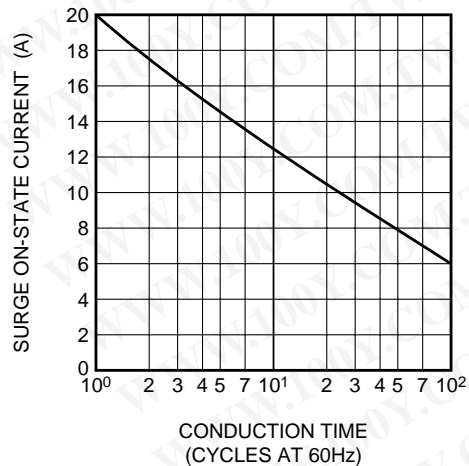
The above values do not include the current flowing through the 1k Ω resistance between the gate and cathode.

PERFORMANCE CURVES

MAXIMUM ON-STATE CHARACTERISTICS



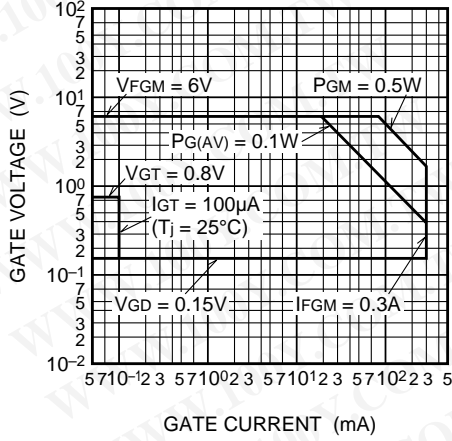
RATED SURGE ON-STATE CURRENT



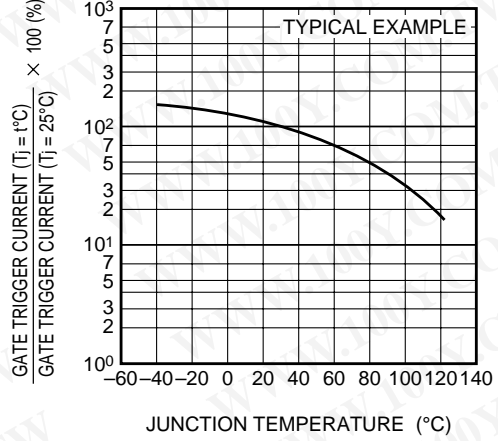
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LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

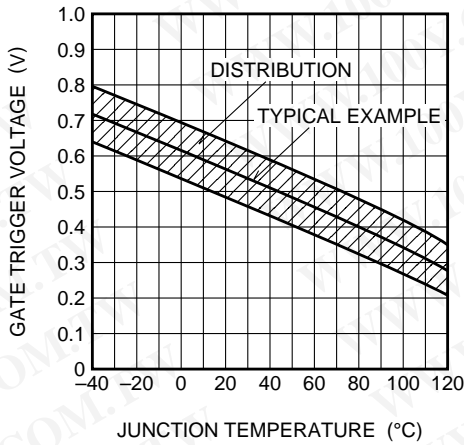
GATE CHARACTERISTICS



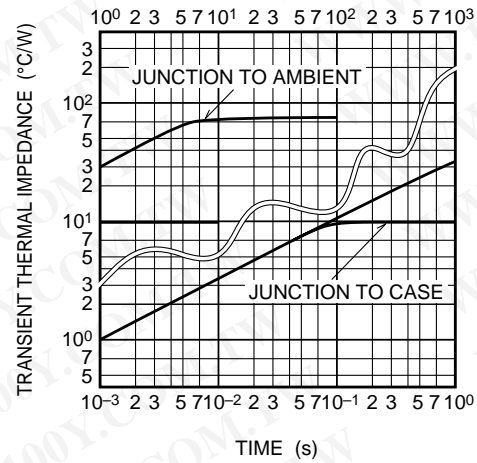
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



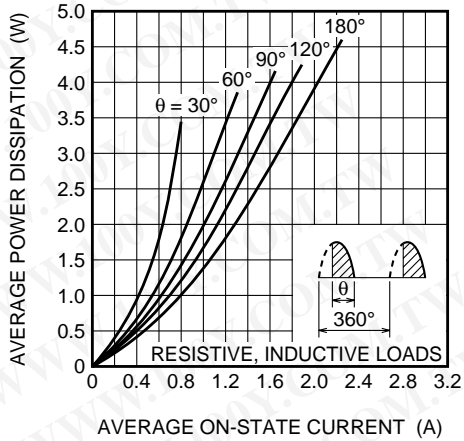
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



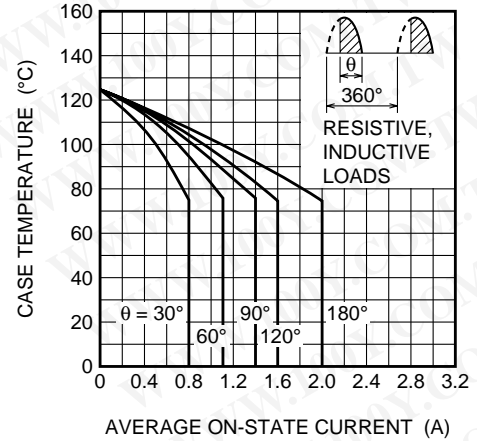
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



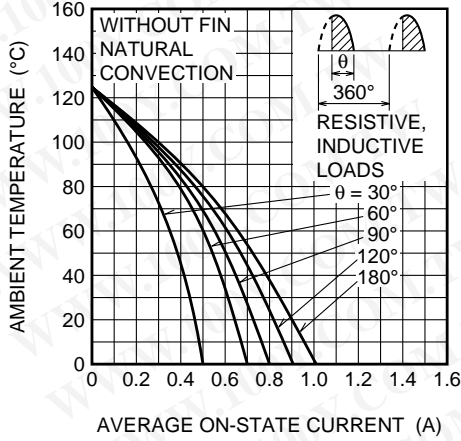
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



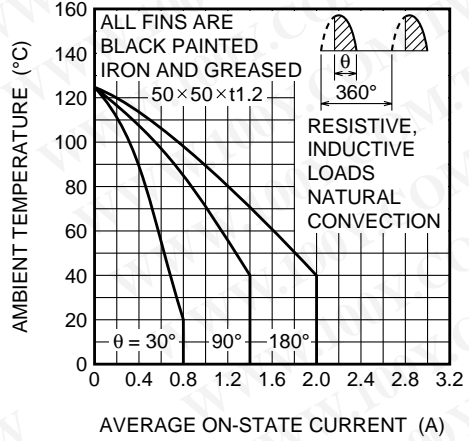
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LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

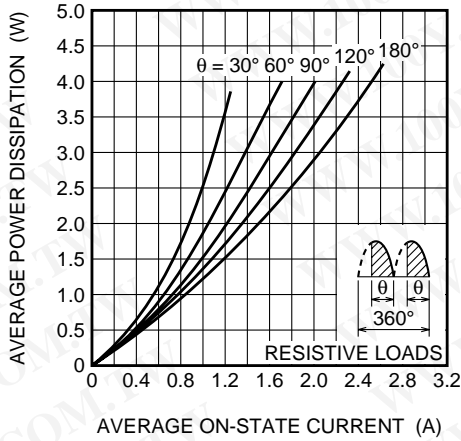
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



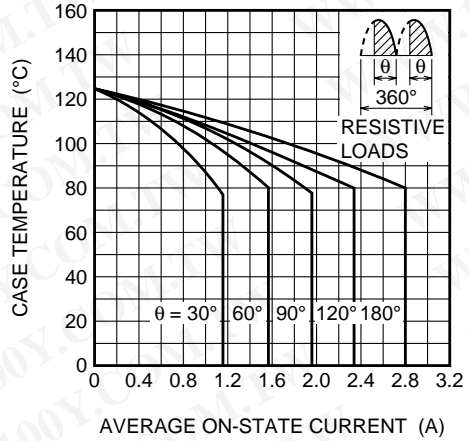
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



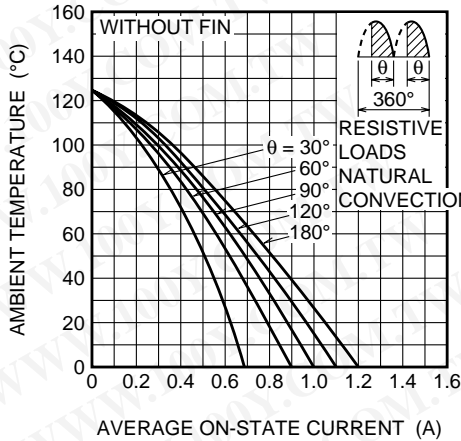
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



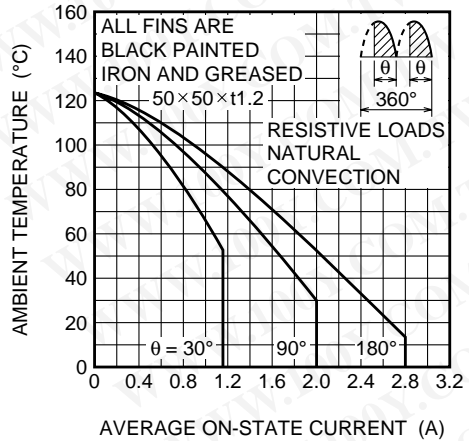
ALLOWABLE CASE TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



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



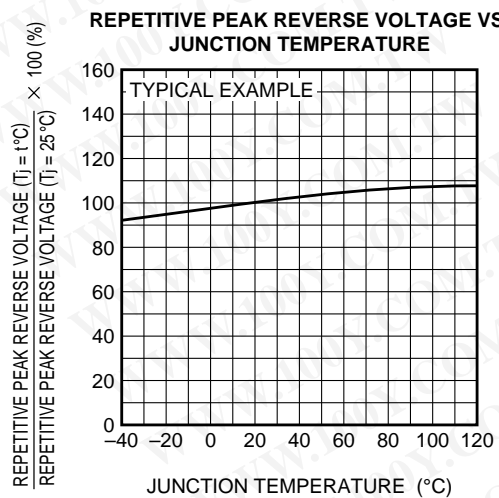
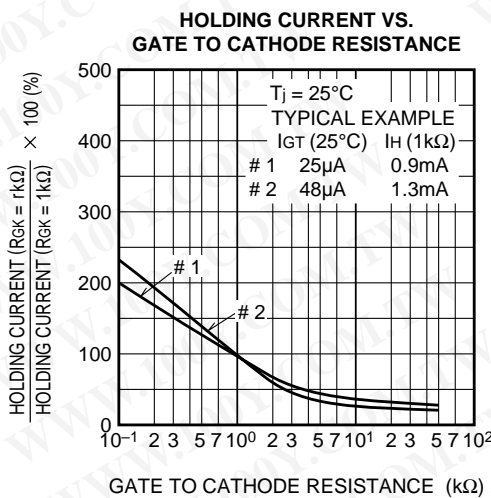
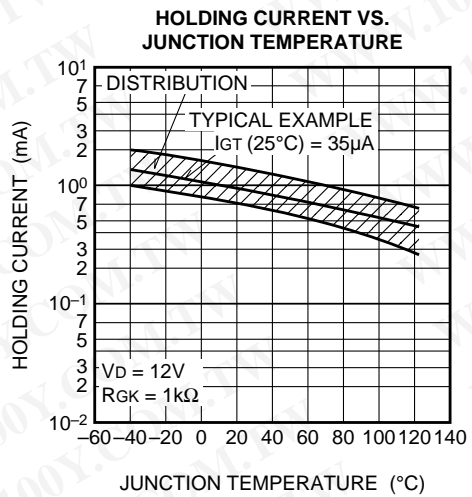
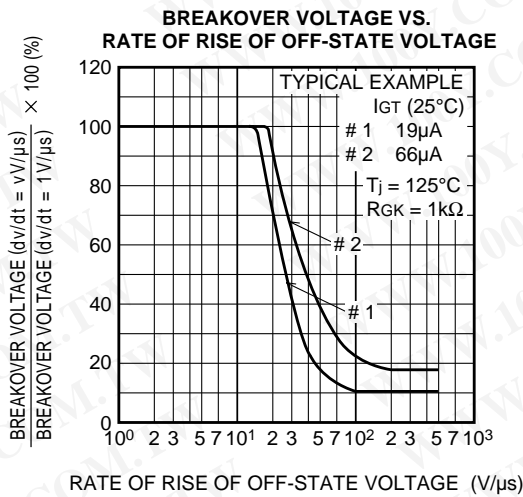
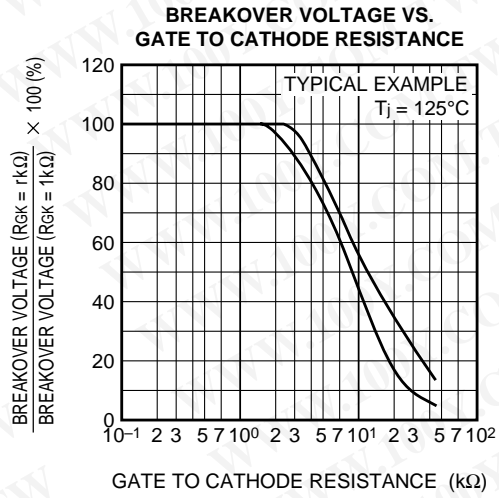
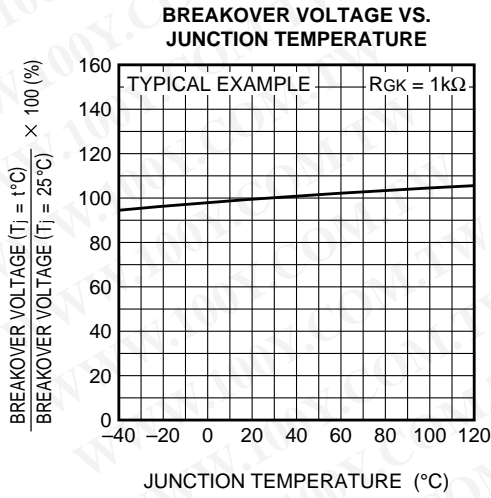
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



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LOW POWER USE

NON-INSULATED TYPE, GLASS PASSIVATION TYPE



CR2AM

LOW POWER USE

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