

CR02AM

LOW POWER USE
PLANAR PASSIVATION TYPE

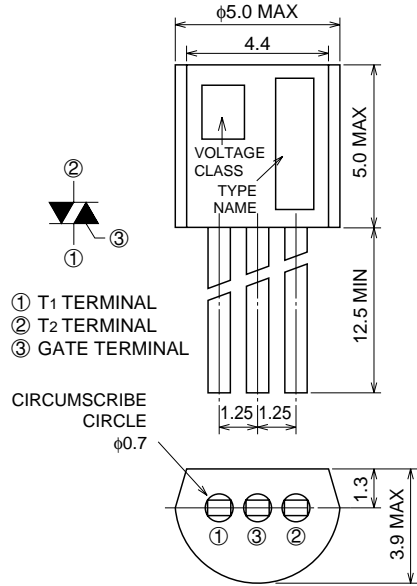
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- $I_T (AV)$ **0.3A**
- V_{DRM} **200V/300V/400V**
- I_{GT} **100 μ A**

OUTLINE DRAWING

Dimensions
in mm



JEDEC : TO-92

APPLICATION

Solid state relay, leakage protector, fire alarm, timer, ringcounter, electric blankets, strobe flasher, other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class			Unit
		4	6	8	
V_{RRM}	Repetitive peak reverse voltage	200	300	400	V
V_{RSM}	Non-repetitive peak reverse voltage	300	400	500	V
$V_R (DC)$	DC reverse voltage	160	240	320	V
V_{DRM}	Repetitive peak off-state voltage *1	200	300	400	V
$V_D (DC)$	DC off-state voltage *1	160	240	320	V

Symbol	Parameter	Conditions	Ratings	Unit
$I_T (RMS)$	RMS on-state current		0.47	A
$I_T (AV)$	Average on-state current	Commercial frequency, sine half wave, 180° conduction, $T_a=30^\circ C$	0.3	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	10	A
I^2_t	I^2_t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.4	A ² s
P_{GM}	Peak gate power dissipation		0.1	W
$P_G (AV)$	Average gate power dissipation		0.01	W
V_{FGM}	Peak gate forward voltage		6	V
V_{RGM}	Peak gate reverse voltage		6	V
I_{FGM}	Peak gate forward current		0.1	A
T_j	Junction temperature		-40 ~ +125	°C
T_{stg}	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	0.23	g

*1. With Gate-to-cathode resistance $R_{GK}=1k\Omega$

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ELECTRICAL CHARACTERISTICS

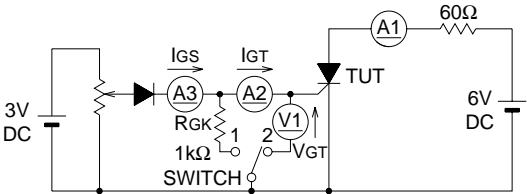
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	T _j =125°C, V _{RRM} applied	—	—	0.1	mA
IDRM	Repetitive peak off-state current	T _j =125°C, V _{DRM} applied, R _{GK} =1kΩ	—	—	0.1	mA
V _{TM}	On-state voltage	T _a =25°C, I _{TM} =0.6A, instantaneous value	—	—	1.6	V
V _{GT}	Gate trigger voltage	T _a =25°C, V _D =6V, I _T =0.1A *3	—	—	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 *3	1	—	100*2	μA
I _H	Holding current	T _j =25°C, V _D =12V, R _{GK} =1kΩ	—	—	3	mA
R _{th} (j-a)	Thermal resistance	Junction to ambient	—	—	180	°C/W

*2. 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

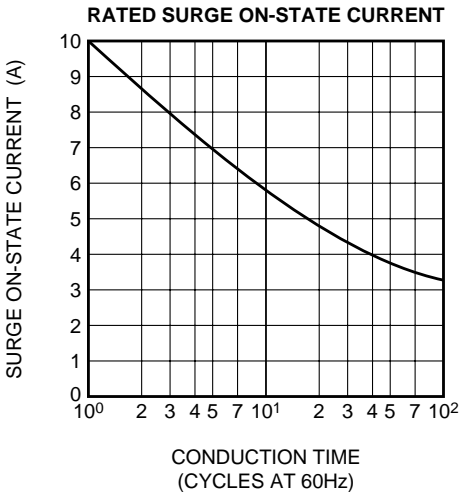
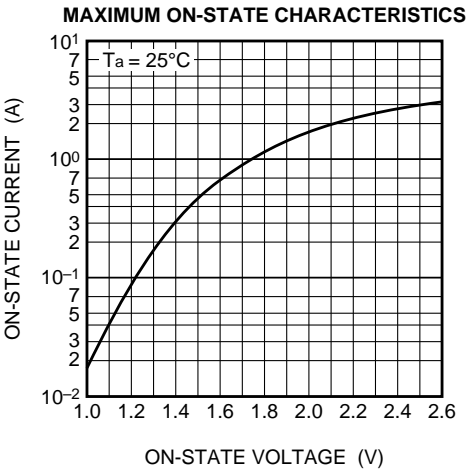
The above values do not include the current flowing through the 1kΩ resistance between the gate and cathode.

*3. I_{GT}, V_{GT} measurement circuit.



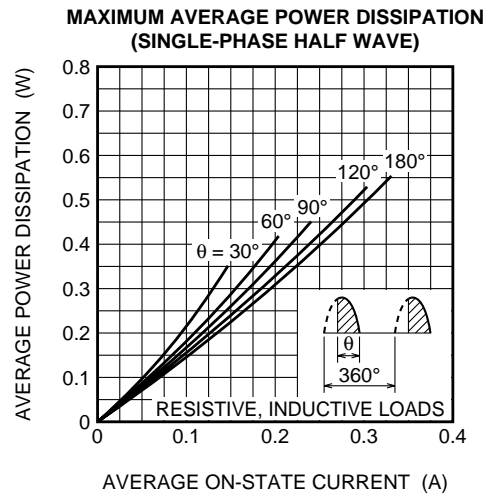
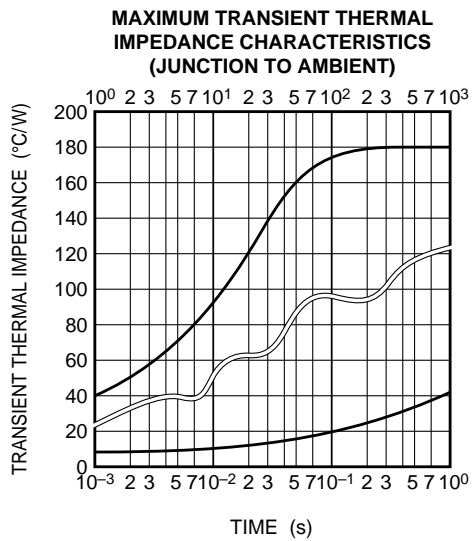
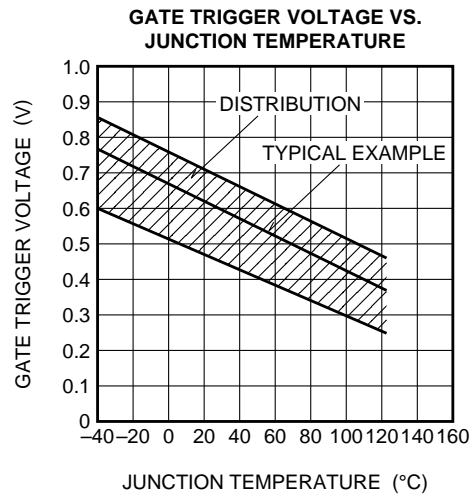
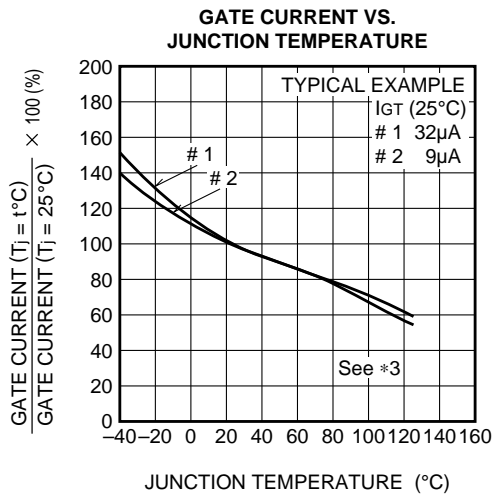
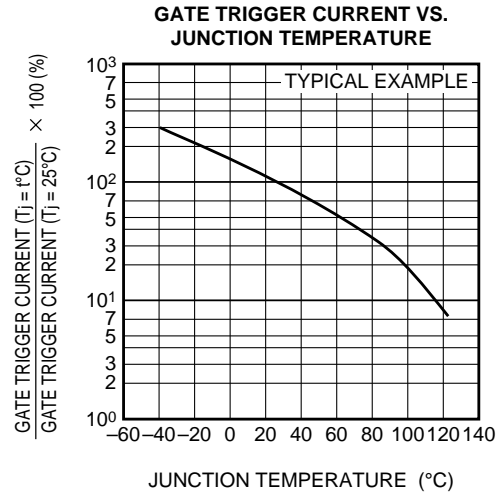
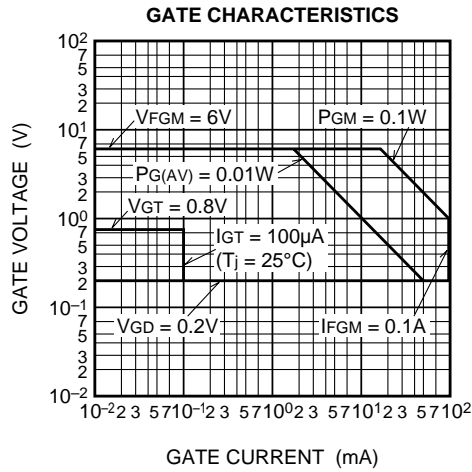
SWITCH 1 : I_{GT} measurement
SWITCH 2 : V_{GT} measurement
(Inner resistance of voltage meter is about 1kΩ)

PERFORMANCE CURVES



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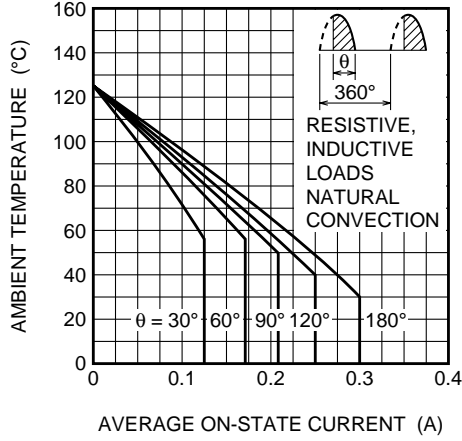
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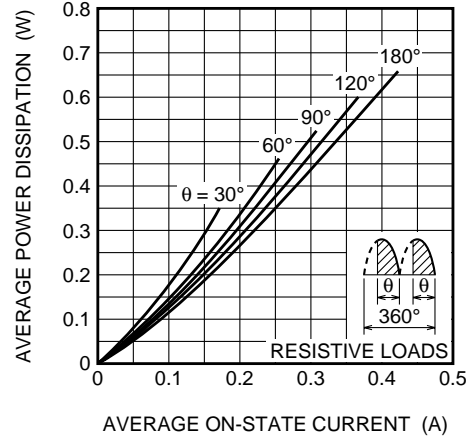
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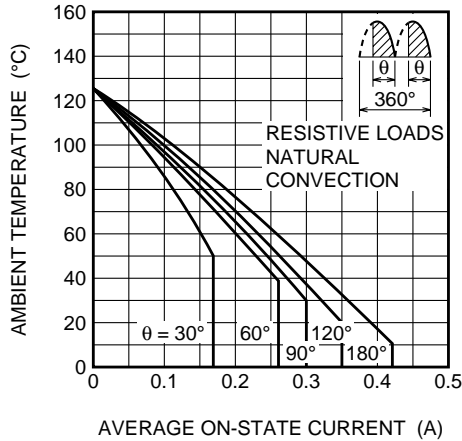
ALLOWABLE AMBIENT TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(SINGLE-PHASE HALF WAVE)



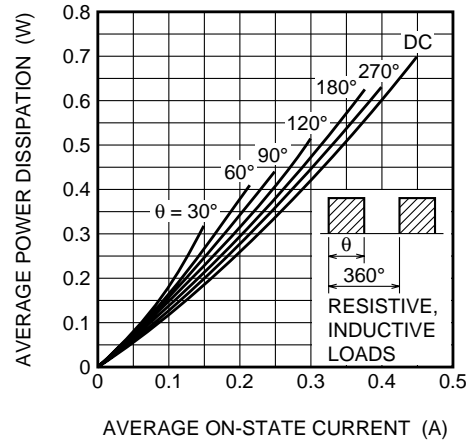
MAXIMUM AVERAGE POWER DISSIPATION
(SINGLE-PHASE FULL WAVE)



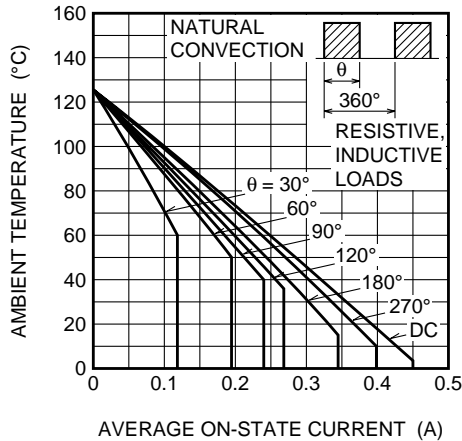
ALLOWABLE AMBIENT TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(SINGLE-PHASE FULL WAVE)



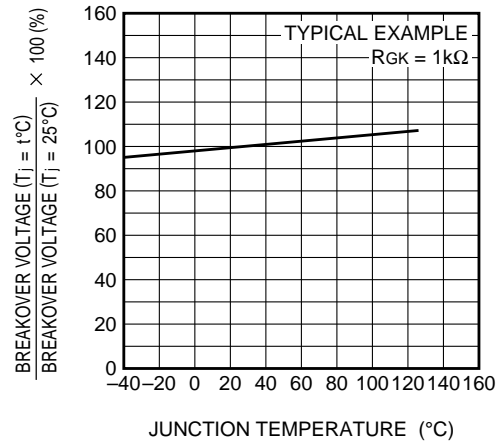
MAXIMUM AVERAGE POWER DISSIPATION
(RECTANGULAR WAVE)



ALLOWABLE AMBIENT TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE



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