


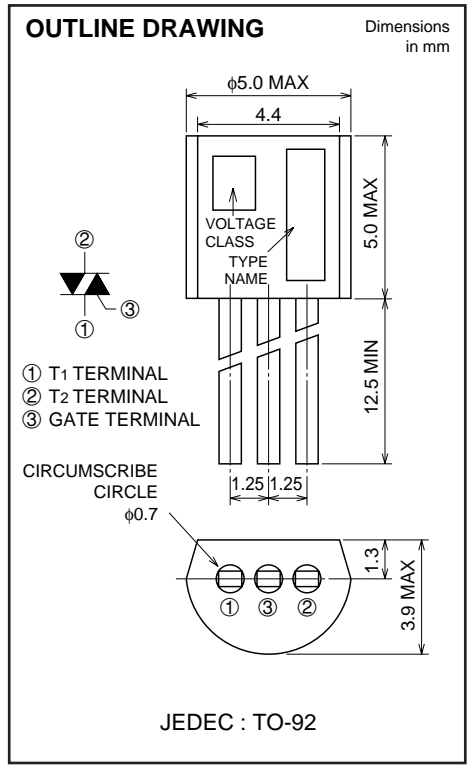
CR03AM

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

CR03AM



- $I_T (AV)$ **0.3A**
- V_{DRM} **400V/600V**
- I_{GT} **100 μ A**



APPLICATION

Leakage protector, timer, gas ignitor

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	800	V
$V_R (DC)$	DC reverse voltage	320	480	V
V_{DRM}	Repetitive peak off-state voltage *1	400	600	V
V_{DSM}	Non-repetitive peak off-state voltage *1	500	800	V
$V_D (DC)$	DC off-state voltage *1	320	480	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, $T_a=47^\circ C$	0.3	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	20	A
I_t^2	I_t^2 for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	1.6	A ² s
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 ~ +110	°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

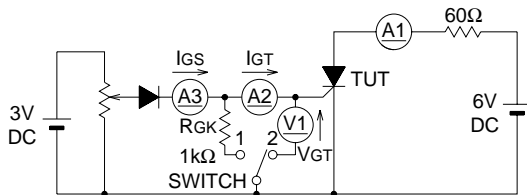
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	$T_j=110^{\circ}\text{C}$, V_{RRM} applied	—	—	0.1	mA
IDRM	Repetitive peak off-state current	$T_j=110^{\circ}\text{C}$, V_{DRM} applied, $R_{GK}=1\text{k}\Omega$	—	—	0.1	mA
V _{TM}	On-state voltage	$T_a=25^{\circ}\text{C}$, $I_{TM}=4\text{A}$, instantaneous value	—	—	1.8	V
V _{GT}	Gate trigger voltage	$T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3	—	—	0.8	V
V _{GD}	Gate non-trigger voltage	$T_j=110^{\circ}\text{C}$, $V_D=1/2V_{DRM}$, $R_{GK}=1\text{k}\Omega$	0.2	—	—	V
I _{GT}	Gate trigger current	$T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *3	1	—	100*2	μA
I _H	Holding current	$T_j=25^{\circ}\text{C}$, $V_D=12\text{V}$, $R_{GK}=1\text{k}\Omega$	—	1.5	3	mA
R _{th(j-a)}	Thermal resistance	Junction to ambient	—	—	180	$^{\circ}\text{C/W}$

*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

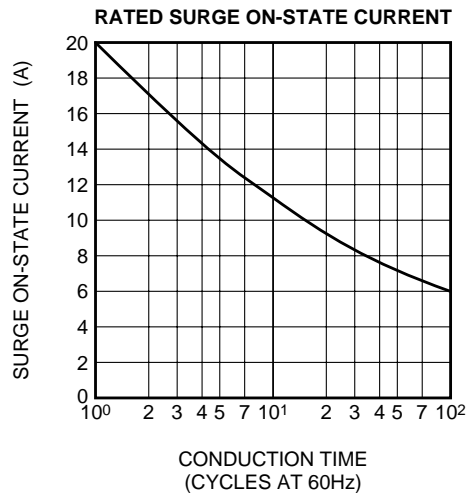
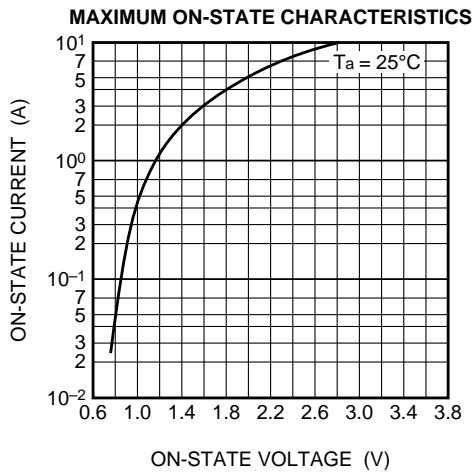
The above values do not include the current flowing through the 1k Ω resistance between the gate and cathode.

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



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

PERFORMANCE CURVES

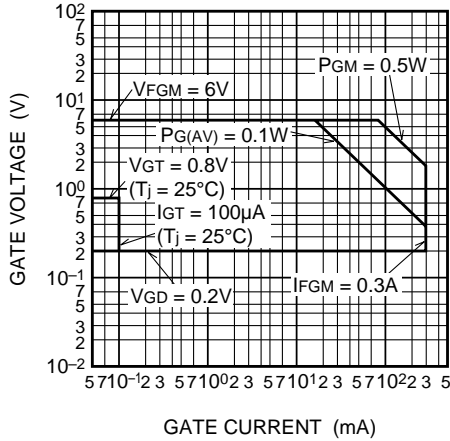


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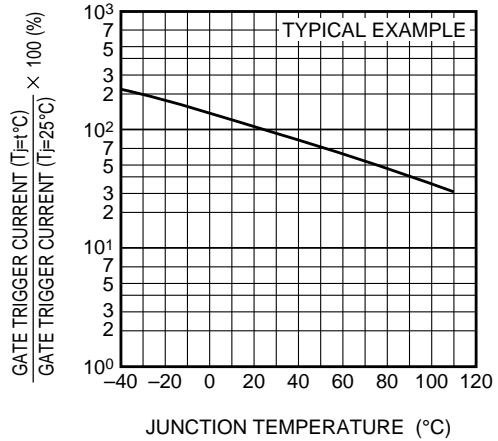
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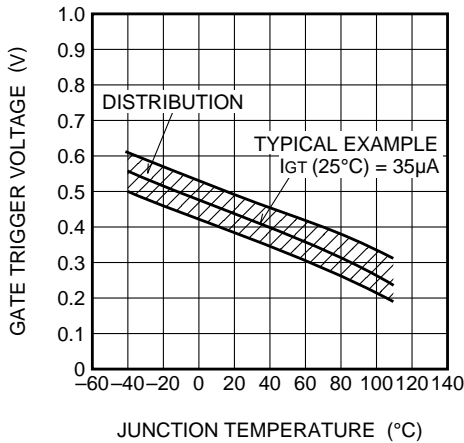
GATE CHARACTERISTICS



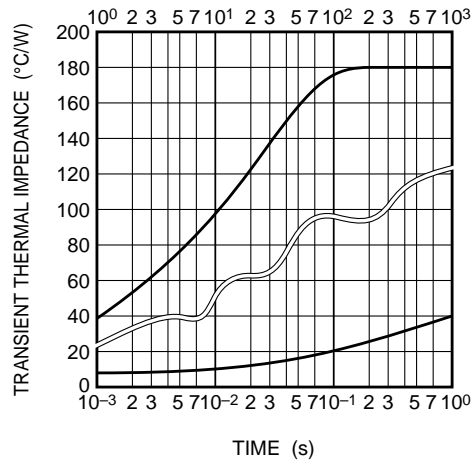
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



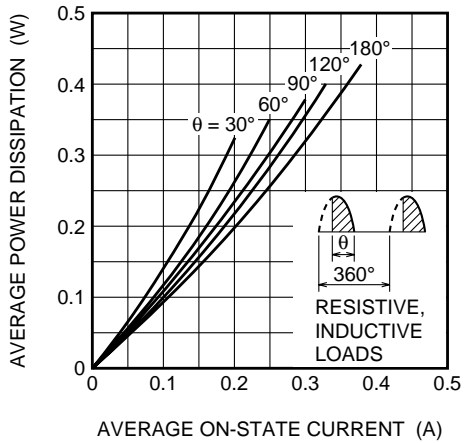
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



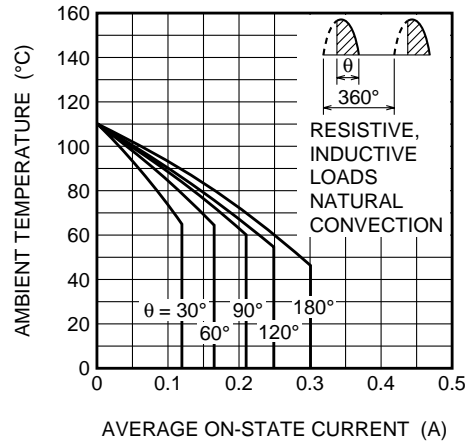
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



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

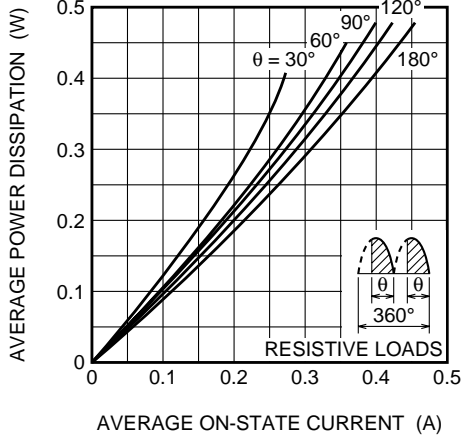


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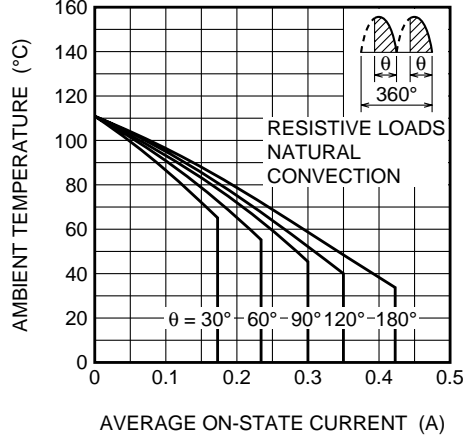
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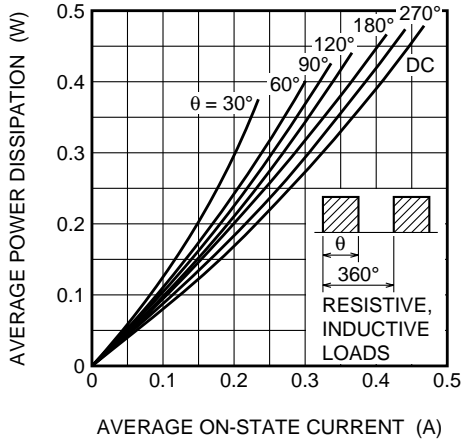
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



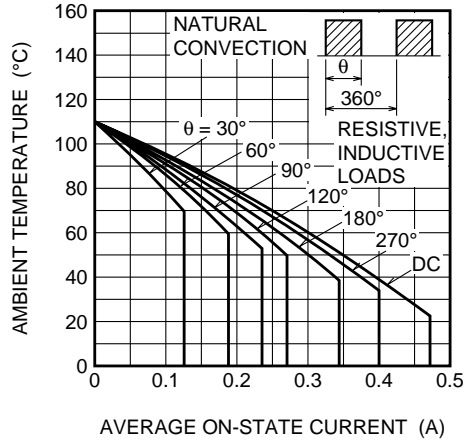
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



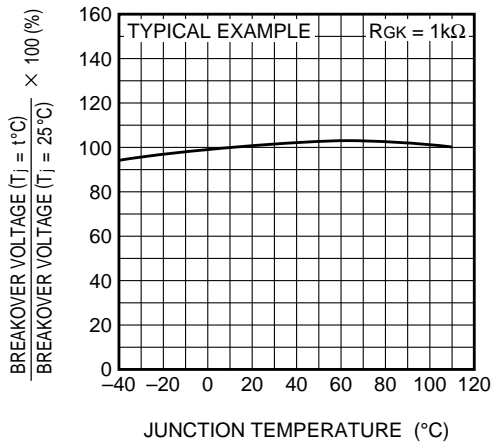
MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)



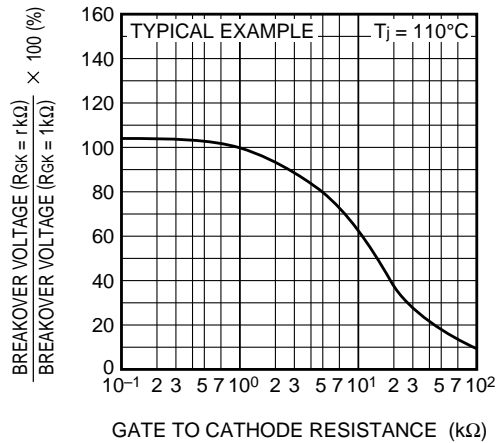
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)



BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



BREAKOVER VOLTAGE VS. GATE TO CATHODE RESISTANCE



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NON-INSULATED TYPE, GLASS PASSIVATION TYPE

