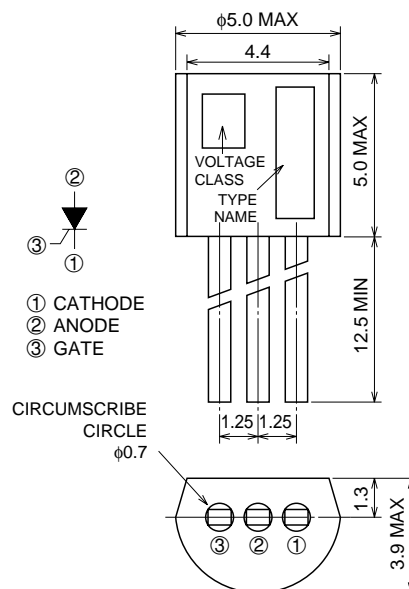


CR03AM



OUTLINE DRAWING

Dimensions
in mm



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

JEDEC : TO-92

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		0.8	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	10	A
I^2_t	I^2_t 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		12	V
V_{RGM}	Peak gate reverse voltage		12	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 $R_{GK}=1k\Omega$.

ELECTRICAL CHARACTERISTICS

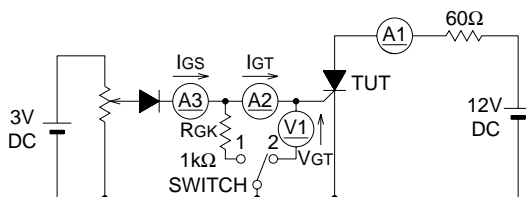
Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
IRRM	Repetitive peak reverse current	$T_j=110^\circ\text{C}$, V_{RRM} applied	—	—	0.5	mA
IDRM	Repetitive peak off-state current	$T_j=110^\circ\text{C}$, V_{DRM} applied, $R_{GK}=1\text{k}\Omega$	—	—	5	μA
V_{TM}	On-state voltage	$T_a=25^\circ\text{C}$, $I_{TM}=2\text{A}$, instantaneous value	—	—	1.8	V
V_{GT}	Gate trigger voltage	$T_j=25^\circ\text{C}$, $V_D=12\text{V}$, $I_T=0.1\text{A}$ *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	$T_j=25^\circ\text{C}$, $V_D=12\text{V}$, $I_T=0.1\text{A}$ *3	1	—	60 *2	μA
I_H	Holding current	$T_j=25^\circ\text{C}$, $V_D=12\text{V}$, $R_{GK}=1\text{k}\Omega$	—	2.5	5	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)

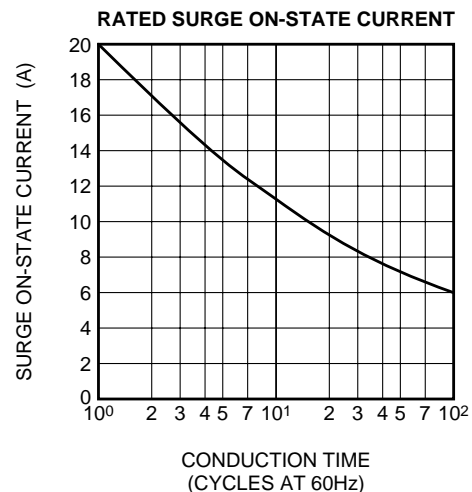
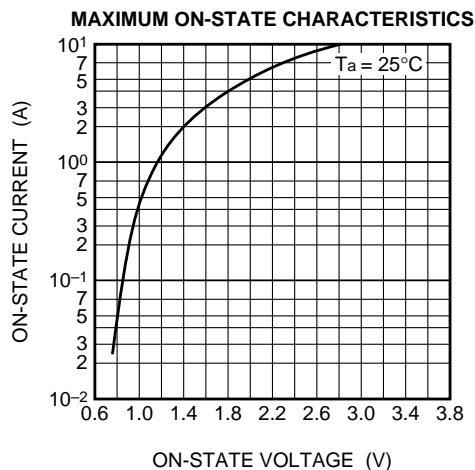
Item	A	B	C
I_{GT} (μA)	1 ~ 10	10 ~ 20	30 ~ 60

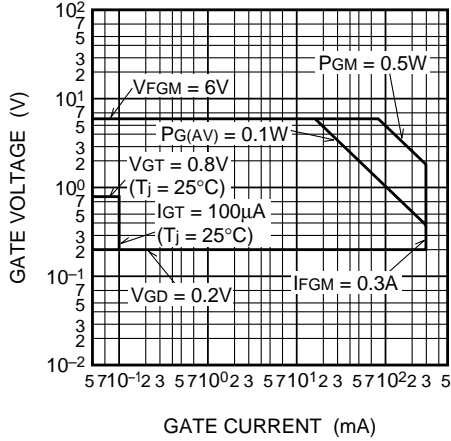
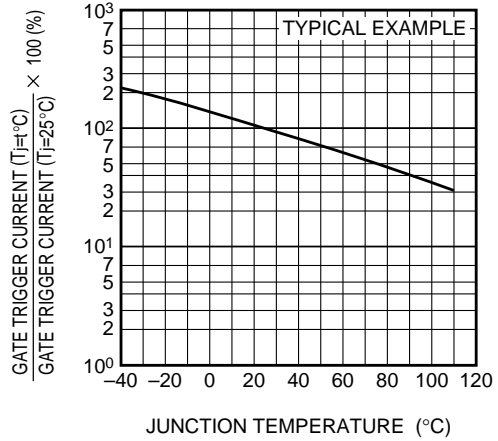
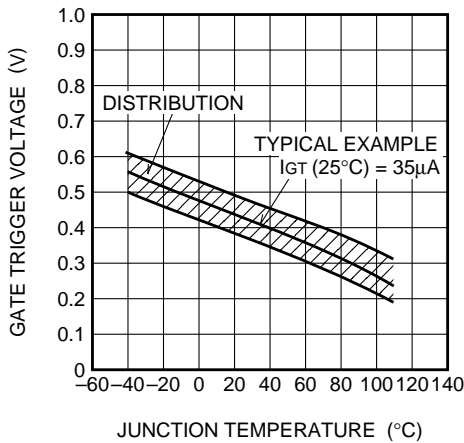
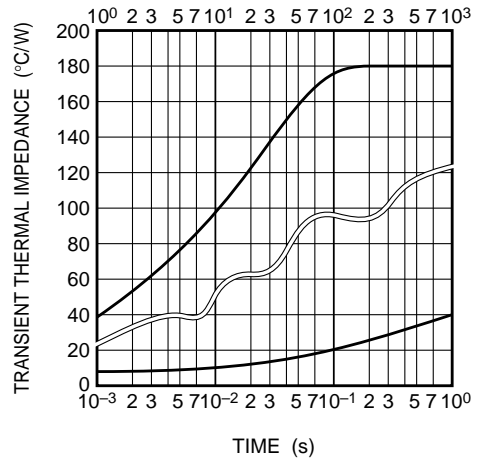
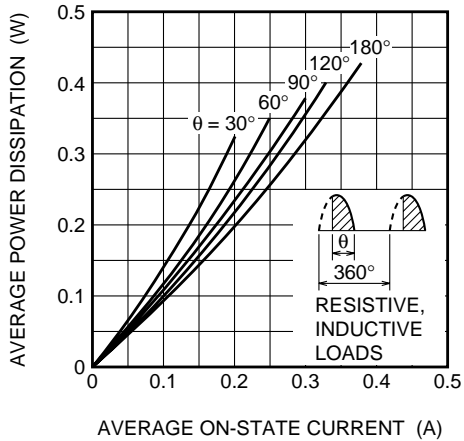
The above values do not include the current flowing through the $1\text{k}\Omega$ resistance between the gate and cathode.

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



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

PERFORMANCE CURVES


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)
