

CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

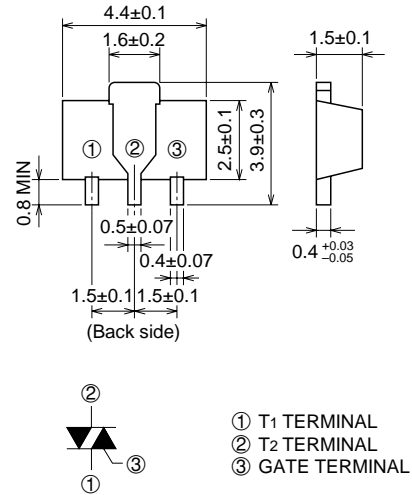
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- I_T (AV) 0.8A
- V_{DRM} 400V/600V
- I_{GT} 100 μ A

OUTLINE DRAWING

Dimensions
in mm



APPLICATION

Solid state relay, strobe flasher, ignitor, hybrid IC

MAXIMUM RATINGS

Symbol	Parameter	Voltage class		Unit
		8 (marked "AD")	12 (marked "AF")	
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		1.26	A
I_T (AV)	Average on-state current	Commercial frequency, sine half wave, 180° conduction, $T_a=51^\circ\text{C}^{*2}$	0.8	A
I_{TSM}	Surge on-state current	60Hz sine half wave 1 full cycle, peak value, non-repetitive	10	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.42	A ² s
PGM	Peak gate power dissipation		0.5	W
PG (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	48	mg

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

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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, $R_{GK}=1\text{k}\Omega$	—	—	0.5	mA
IDRM	Repetitive peak off-state current	$T_j=125^{\circ}\text{C}$, V_{DRM} applied, $R_{GK}=1\text{k}\Omega$	—	—	0.5	mA
V_{TM}	On-state voltage	$T_a=25^{\circ}\text{C}$, $I_{TM}=2.5\text{A}$, instantaneous value	—	—	1.5	V
V_{GT}	Gate trigger voltage	$T_a=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *4	—	—	0.8	V
V_{GD}	Gate non-trigger voltage	$T_j=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$, $R_{GK}=1\text{k}\Omega$	0.2	—	—	V
I_{GT}	Gate trigger current	$T_j=25^{\circ}\text{C}$, $V_D=6\text{V}$, $I_T=0.1\text{A}$ *4	1	—	100*3	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 *2	—	—	65	$^{\circ}\text{C/W}$

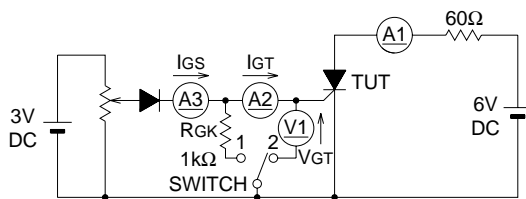
*2. Soldering with ceramic plate (25mm × 25mm × t0.7).

*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 1k Ω resistance between the gate and cathode.

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

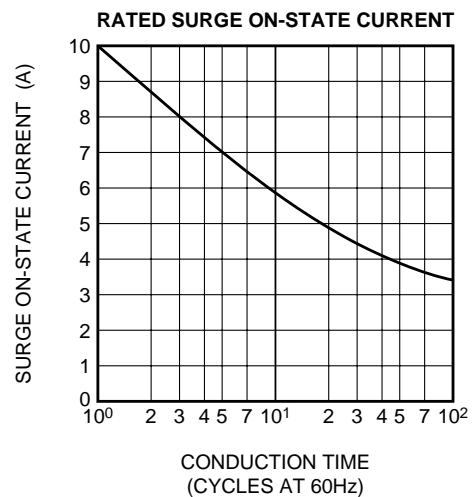
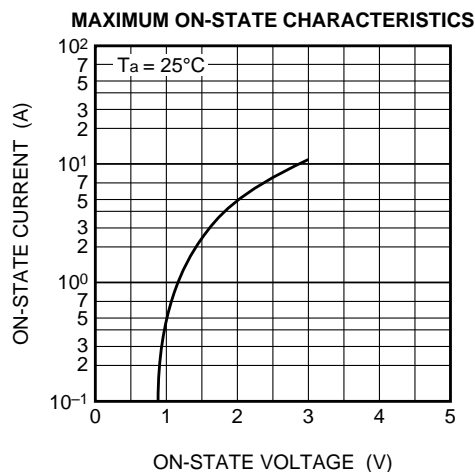


SWITCH 1 : I_{GT} measurement

SWITCH 2 : V_{GT} measurement

(Inner resistance of voltage meter is about 1k Ω)

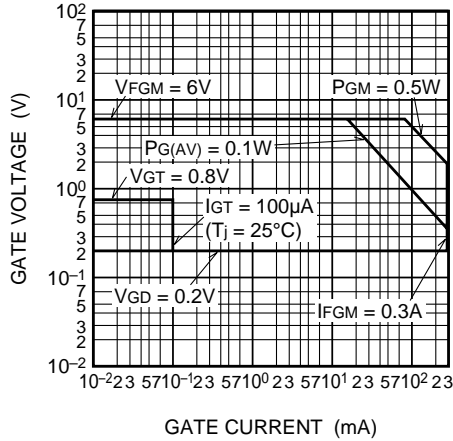
PERFORMANCE CURVES



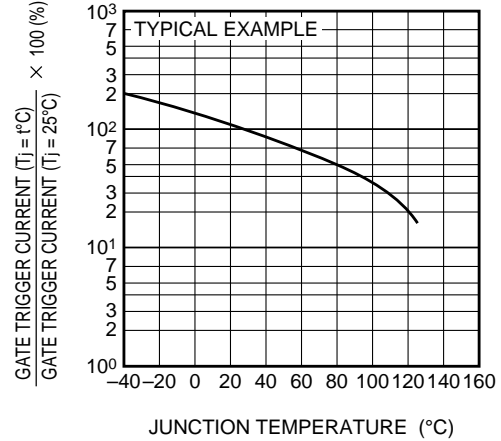
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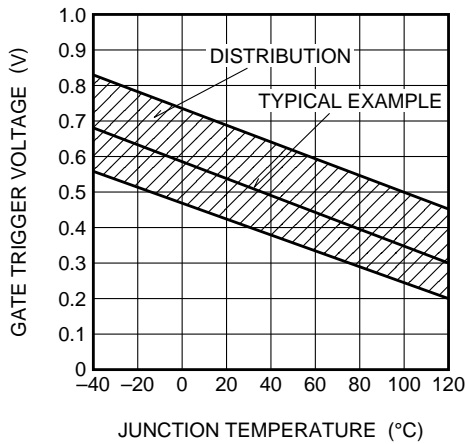
GATE CHARACTERISTICS



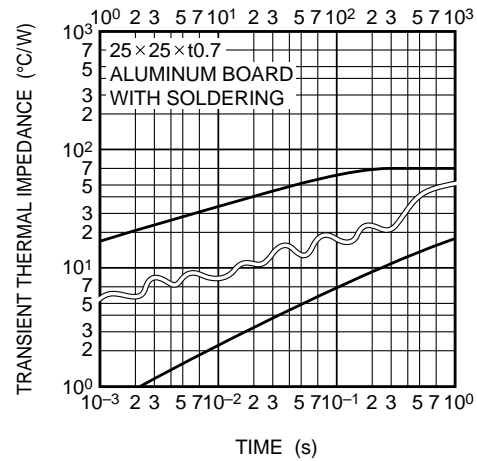
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



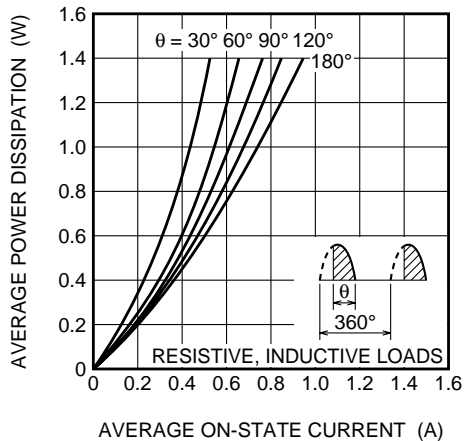
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



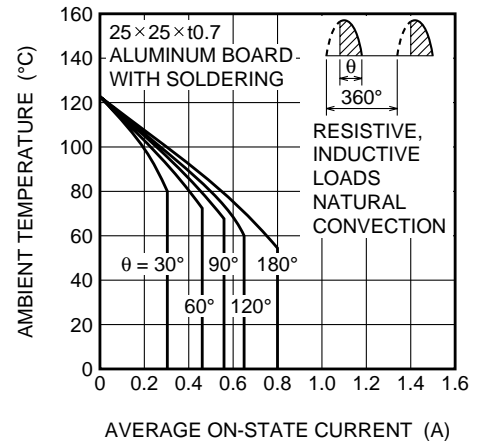
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



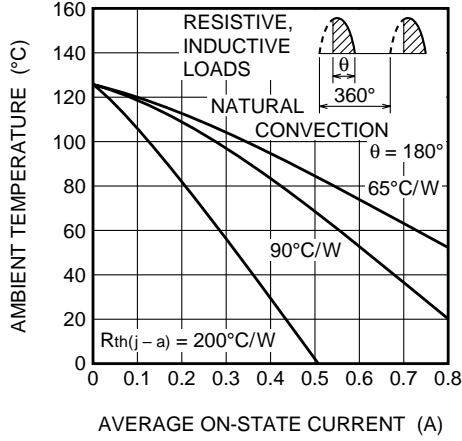
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



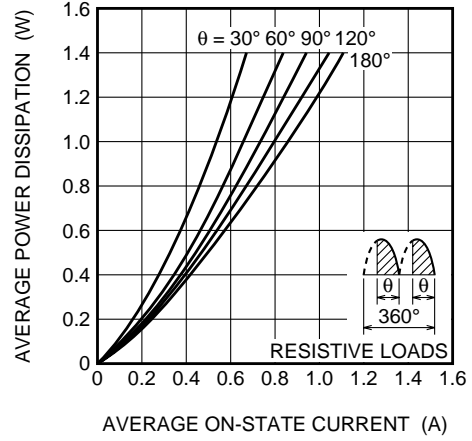
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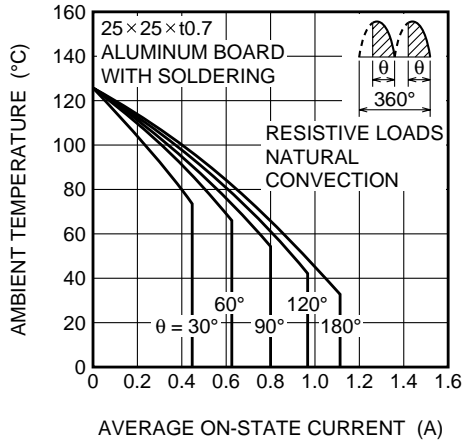
ALLOWABLE AMBIENT TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(SINGLE-PHASE HALF WAVE)



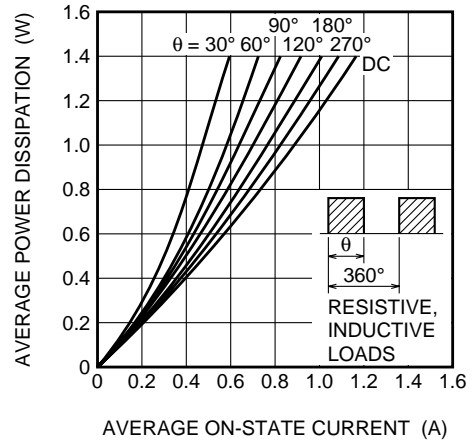
MAXIMUM AVERAGE POWER DISSIPATION
(SINGLE-PHASE FULL WAVE)



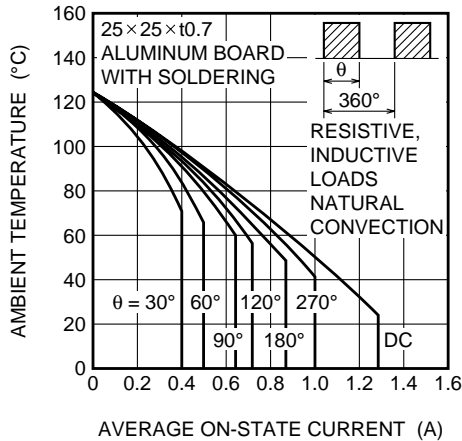
ALLOWABLE AMBIENT TEMPERATURE VS.
AVERAGE ON-STATE CURRENT
(SINGLE-PHASE FULL WAVE)



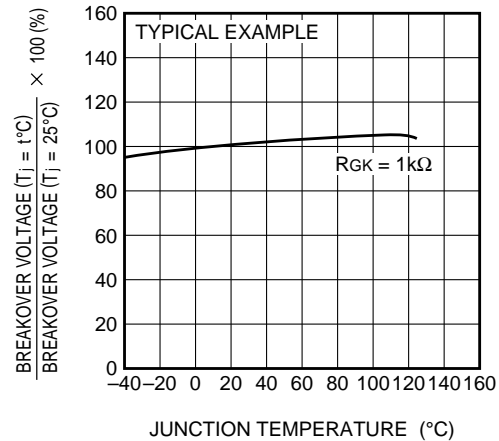
MAXIMUM AVERAGE POWER DISSIPATION
(RECTANGULAR WAVE)



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



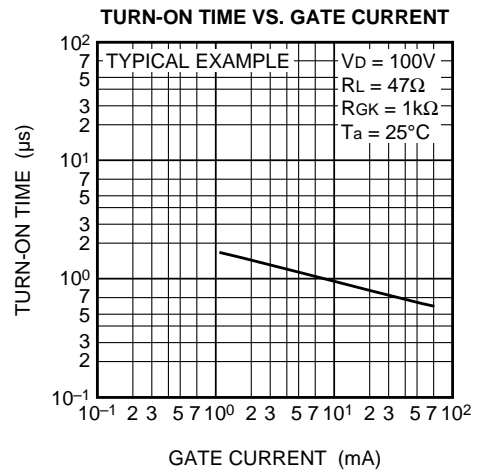
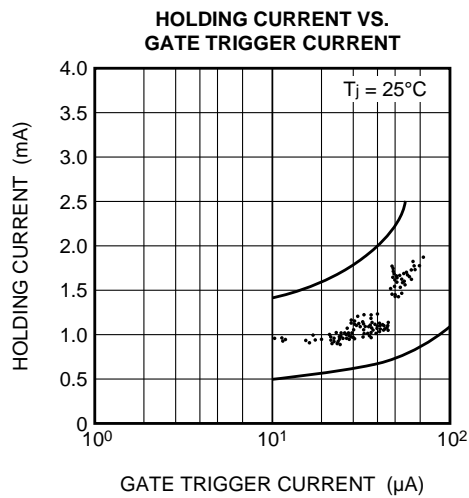
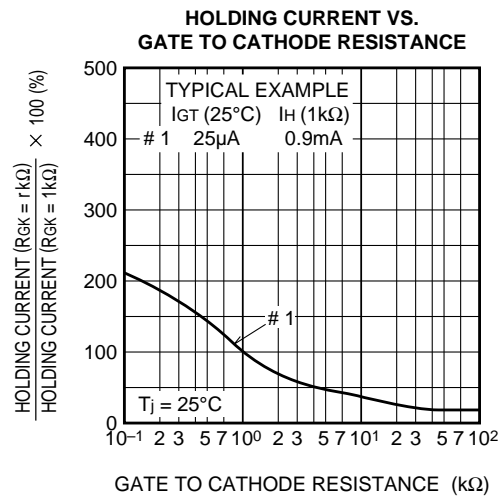
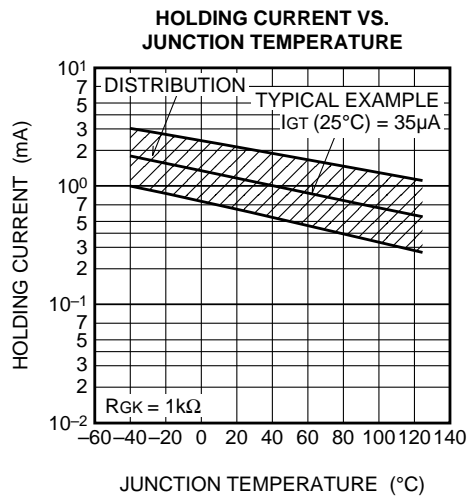
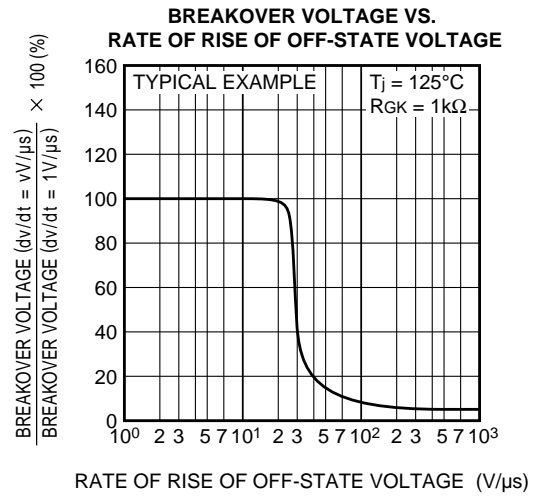
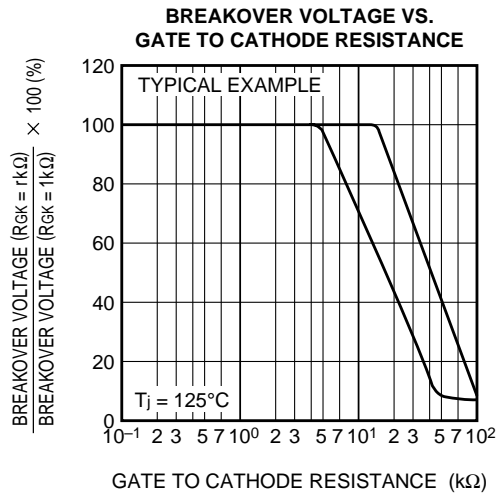
BREAKOVER VOLTAGE VS.
JUNCTION TEMPERATURE



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