

CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

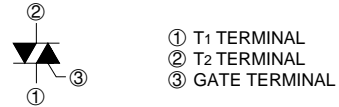
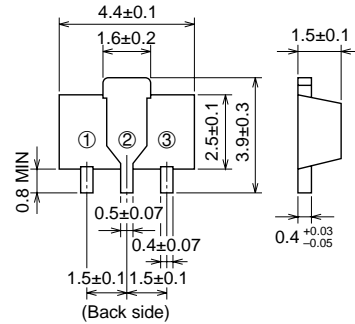
CR08AS



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

OUTLINE DRAWING

Dimensions
in mm



- ① T1 TERMINAL
- ② T2 TERMINAL
- ③ GATE TERMINAL

SOT-89

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 $R_{GK}=1\text{k}\Omega$

CR08AS

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°C, V _{RRM} applied, R _{GK} =1kΩ	—	—	0.5	mA
IDRM	Repetitive peak off-state current	T _J =125°C, V _{DRM} applied, R _{GK} =1kΩ	—	—	0.5	mA
V _{TM}	On-state voltage	T _a =25°C, I _{TM} =2.5A, instantaneous value	—	—	1.5	V
V _{GT}	Gate trigger voltage	T _a =25°C, V _D =6V, I _T =0.1A *4	—	—	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 *4	1	—	100*3	μA
I _H	Holding current	T _J =25°C, V _D =12V, R _{GK} =1kΩ	—	1.5	3	mA
R _{th(j-a)}	Thermal resistance	Junction to ambient *2	—	—	65	°C/W

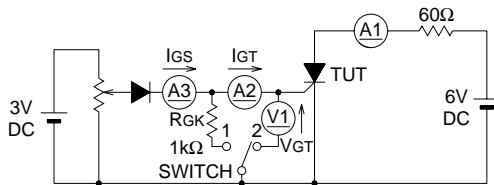
*2. Soldering with ceramic plate (25mm × 25mm × t0.7).

*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

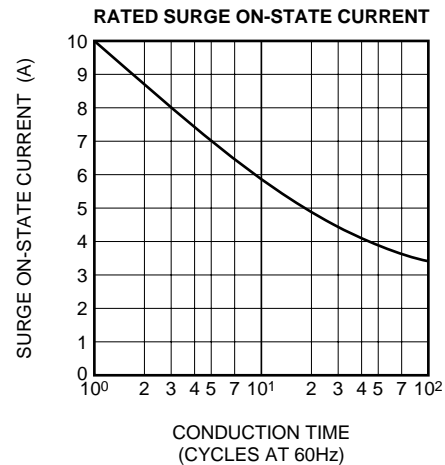
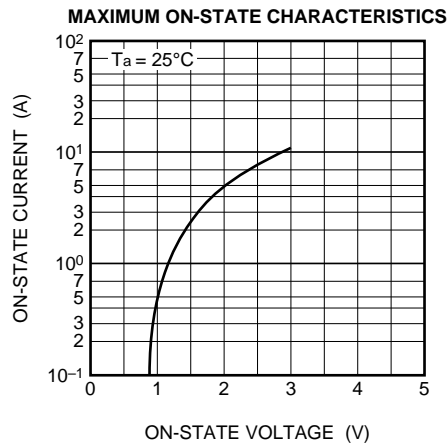
The above values do not include the current flowing through the 1kΩ resistance between the gate and cathode.

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



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

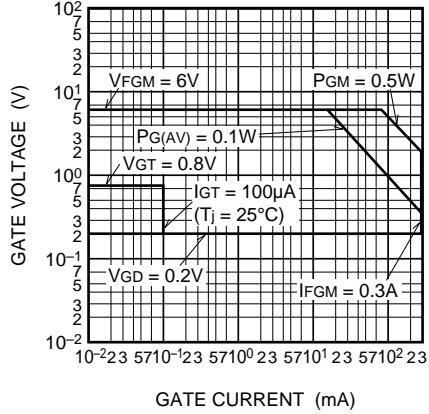
PERFORMANCE CURVES



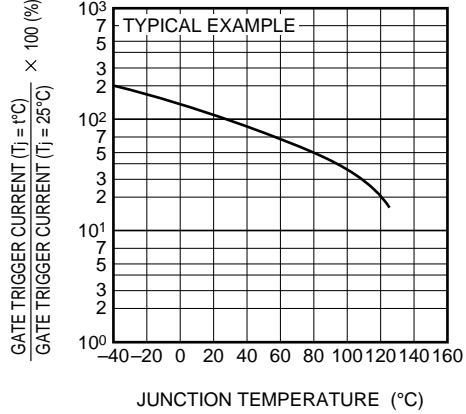
CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

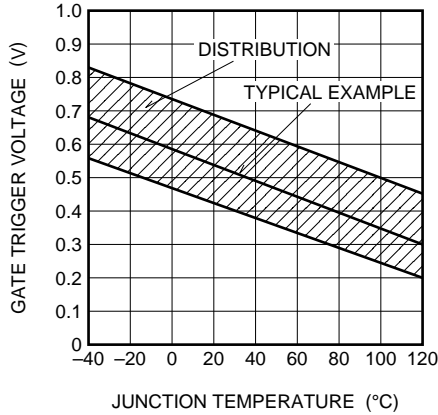
GATE CHARACTERISTICS



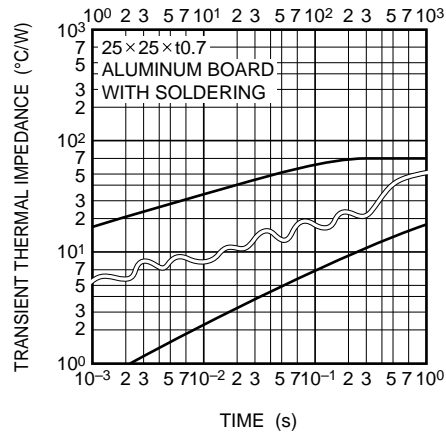
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



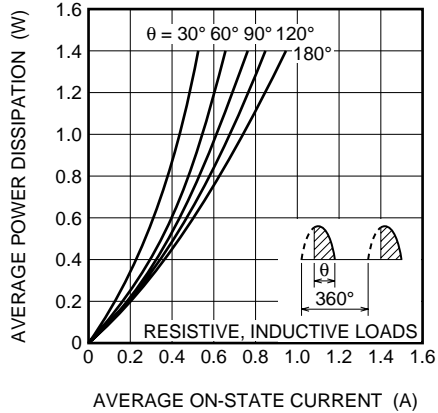
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



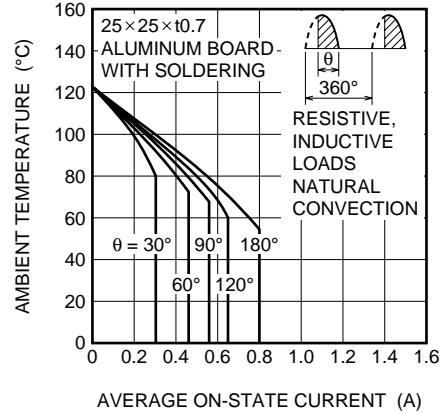
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)



MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)



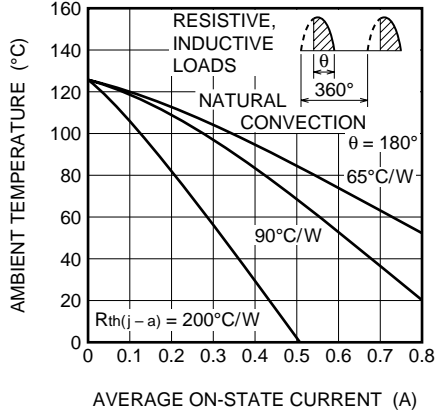
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



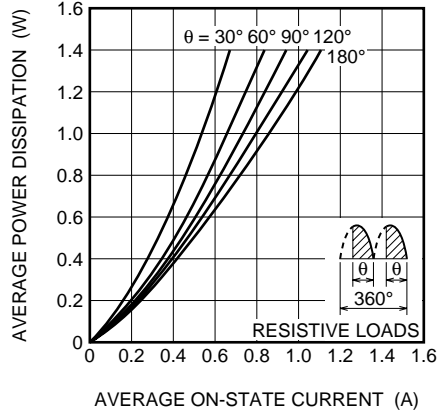
CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

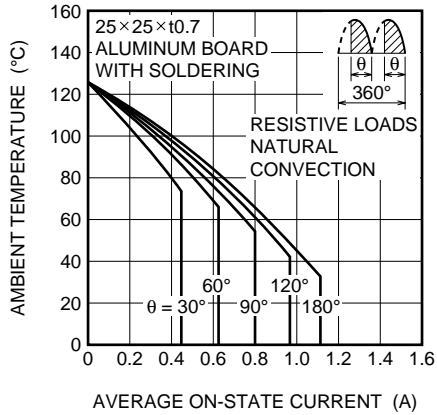
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



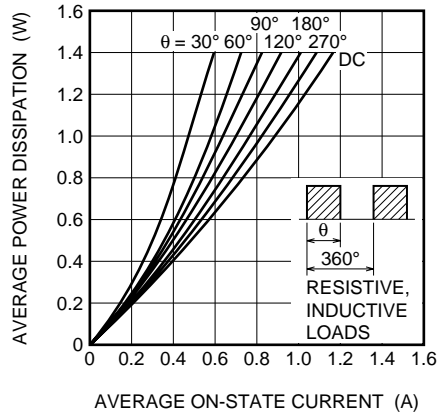
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



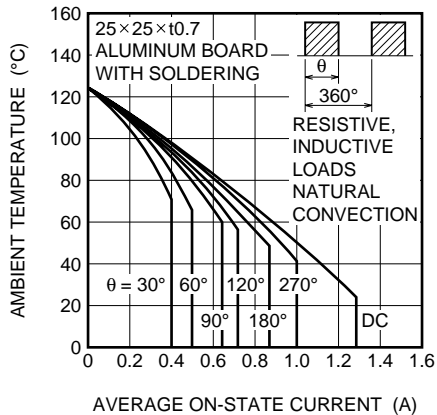
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



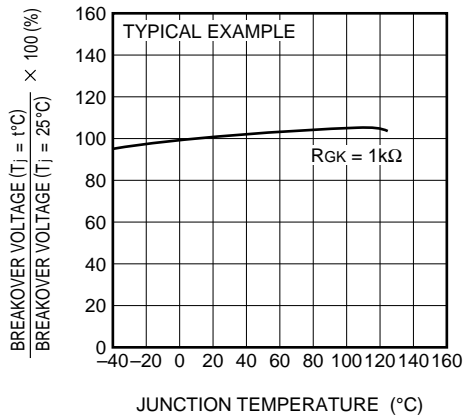
MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)



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

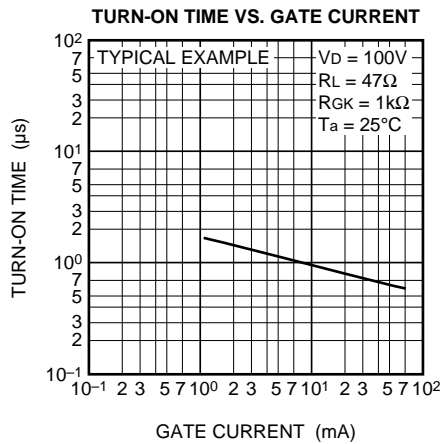
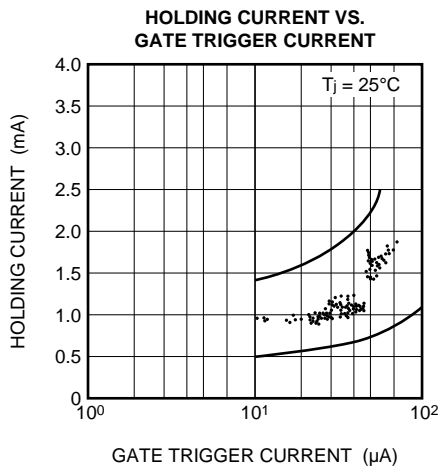
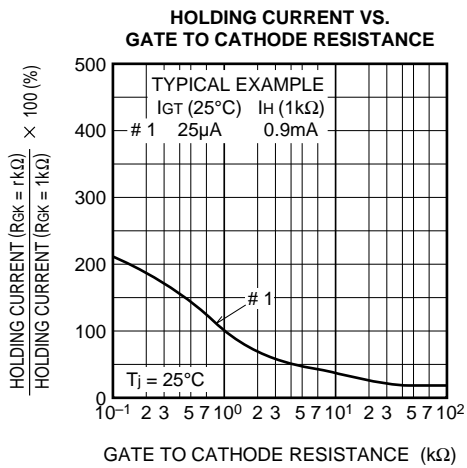
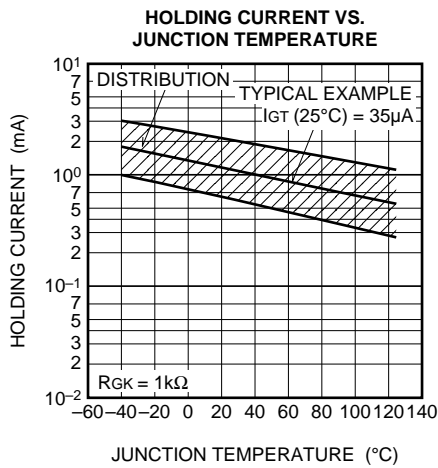
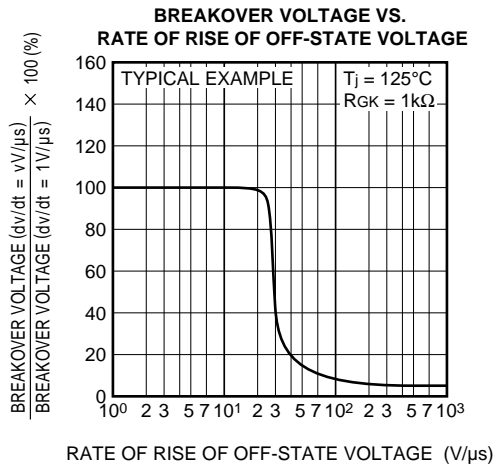
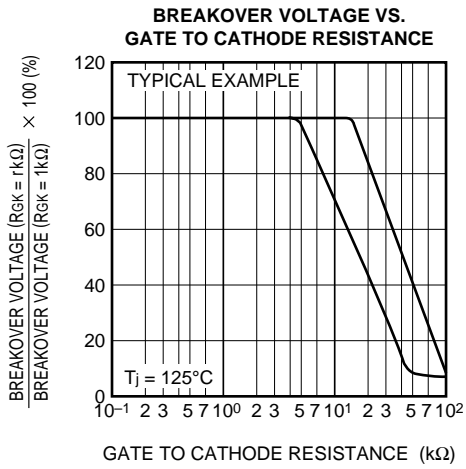


BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE



CR08AS

LOW POWER USE
NON-INSULATED TYPE, GLASS PASSIVATION TYPE

