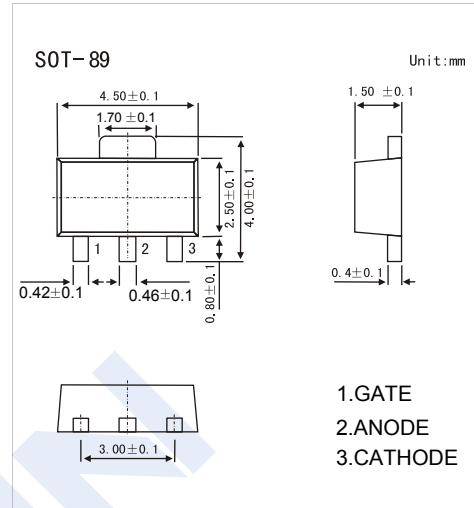


## Low Power Use Non-Insulated Type, Glass Passivation Type CR08AS

### ■ Features

- $I_{T(AV)}$  :0.8A
- $V_{DRM}$  :400V/600V
- $I_{GT}$  :100  $\mu$  A



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	CR08AS-8	CR08AS-12	Unit
Repetitive peak reverse voltage	$V_{RRM}$	400	600	V
Non-repetitive peak reverse voltage	$V_{RSM}$	500	720	V
DC reverse voltage	$V_{R(DC)}$	320	480	V
Repetitive peak off-state voltage *1	$V_{DRM}$	400	600	V
DC off-state voltage *1	$V_{D(DC)}$	320	480	V
RMS on-state current	$I_{T(RMS)}$	1.26		A
Average on-state current	$I_{T(AV)}$	0.8		A
Surge on-state current	$I_{TSM}$	10		A
$I^2t$ for fusing	$I^2t$	0.42		$A^2s$
Peak gate power dissipation	$P_{GM}$	0.5		W
Average gate power dissipation	$P_{G(AV)}$	0.1		W
Peak gate forward voltage	$V_{FGM}$	6		V
Peak gate reverse voltage	$V_{RGM}$	6		V
Peak gate forward current	$I_{FGM}$	0.3		A
Junction temperature	$T_j$	-40 to +125		$^\circ\text{C}$
Storage temperature	$T_{stg}$	-40 to +125		$^\circ\text{C}$

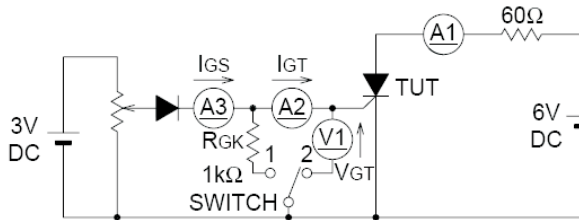
\*1 With Gate-to-cathode resistance  $R_{GK}=1k\ \Omega$

# CR08AS

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test conditions	Min	Typ.	Max	Unit
Repetitive peak reverse current	I <sub>RRM</sub>	T <sub>j</sub> =125°C, V <sub>RRM</sub> applied, R <sub>GK</sub> =1kΩ			0.5	mA
Repetitive peak off-state current	I <sub>DRM</sub>	T <sub>j</sub> =125°C, V <sub>DRM</sub> applied, R <sub>GK</sub> =1kΩ			0.5	mA
On-state voltage	V <sub>TM</sub>	Ta=25°C, I <sub>TM</sub> =2.5A, instantaneous value			1.5	V
Gate trigger voltage	V <sub>GT</sub>	Ta=25°C, V <sub>D</sub> =6V, I <sub>T</sub> =0.1A*1			0.8	V
Gate non-trigger voltage	V <sub>GD</sub>	T <sub>j</sub> =125°C, V <sub>D</sub> =1/2V <sub>DRM</sub> , R <sub>GK</sub> =1kΩ	0.2			V
Gate trigger current	I <sub>GT</sub>	T <sub>j</sub> =25°C, V <sub>D</sub> =6V, I <sub>T</sub> =0.1A *1	1		100 <sup>*2</sup>	μA
Holding current	I <sub>H</sub>	T <sub>j</sub> =25°C, V <sub>D</sub> =12V, R <sub>GK</sub> =1kΩ		1.5	3	mA
Thermal resistance	R <sub>th(j-a)</sub>	Junction to ambient			65	°C/W

\*1 I<sub>GT</sub>, V<sub>GT</sub> measurement circuit.



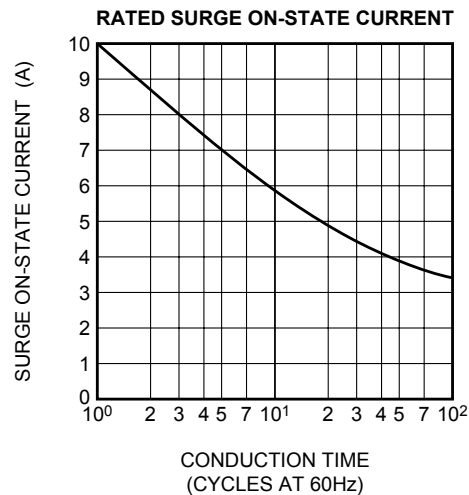
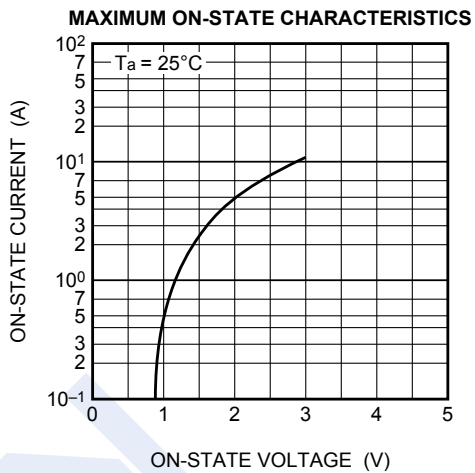
SWITCH 1 : I<sub>GT</sub> measurement  
 SWITCH 2 : V<sub>GT</sub> measurement  
 (Inner resistance of voltage meter is about 1kΩ)

\*2 If special values of I<sub>GT</sub> are required, choose at least two items from those listed in the table below.

Item	A	B	C
I <sub>GT</sub> (μA)	1 to 30	20 to 50	40 to 100

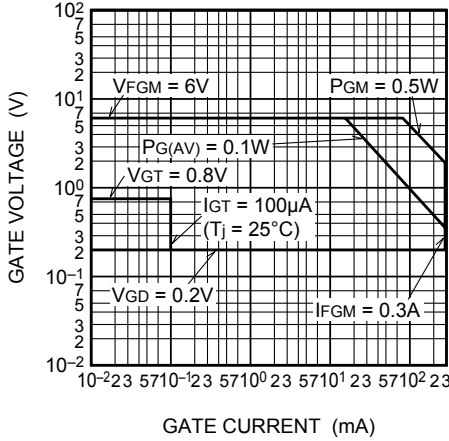
■ Marking

NO.	CR08AS-8	CR08AS-12
Marking	AD	AF

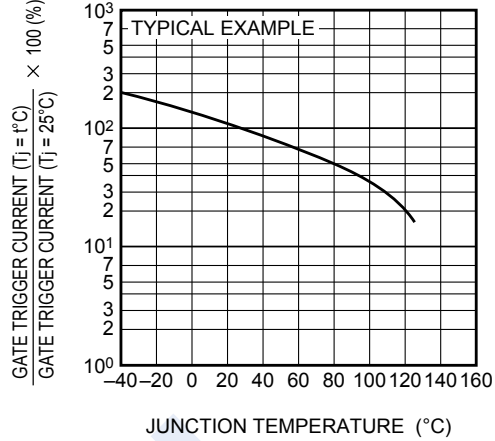


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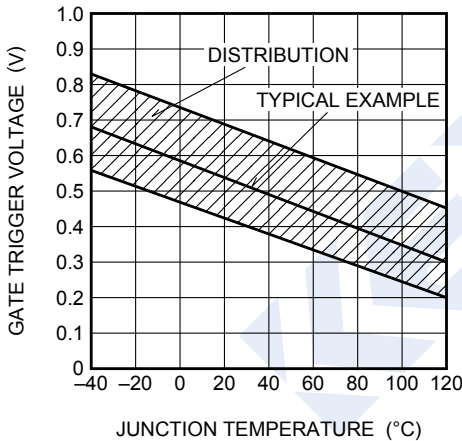
**GATE CHARACTERISTICS**



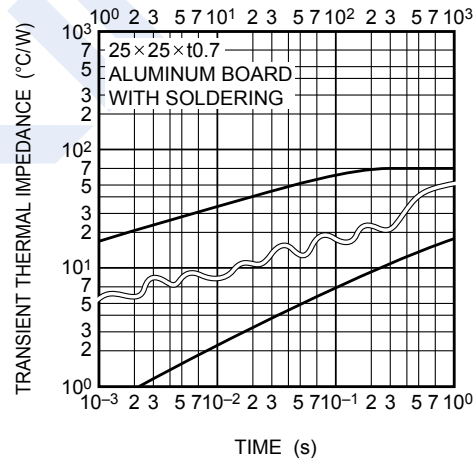
**GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE**



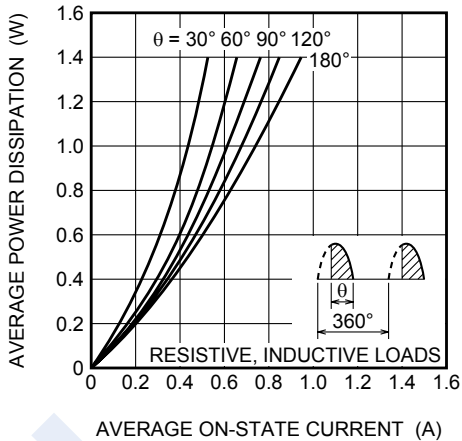
**GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE**



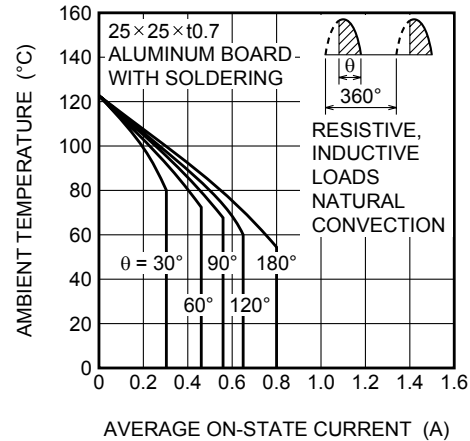
**MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS (JUNCTION TO AMBIENT)**



**MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE HALF WAVE)**

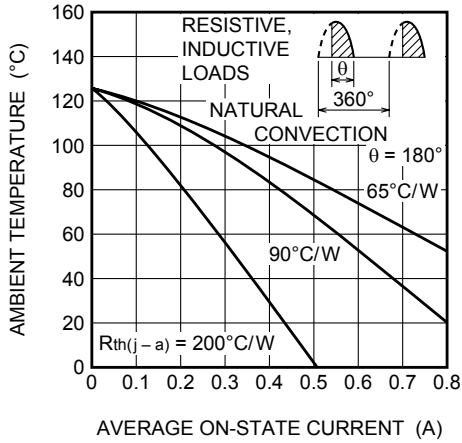


**ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)**

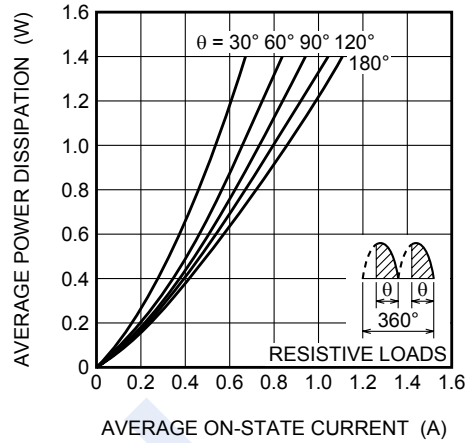


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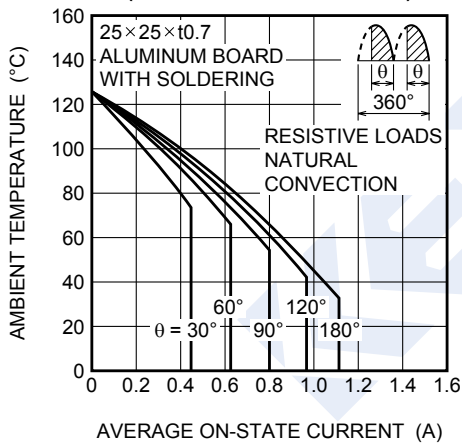
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE HALF WAVE)



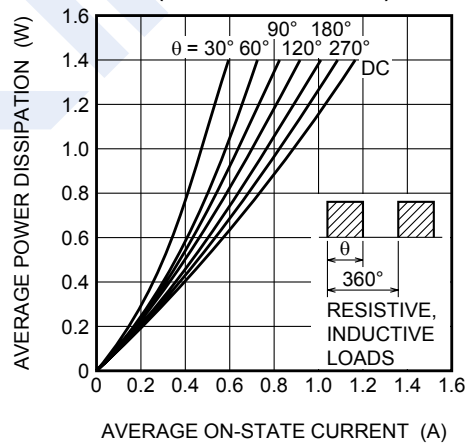
MAXIMUM AVERAGE POWER DISSIPATION (SINGLE-PHASE FULL WAVE)



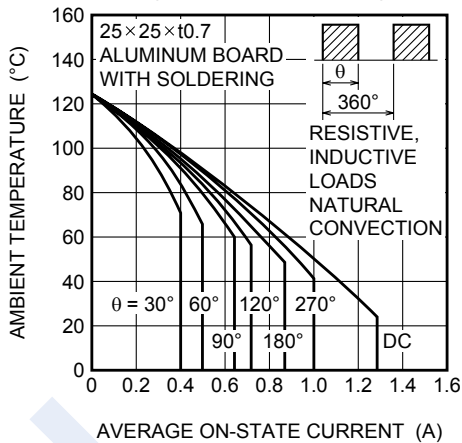
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (SINGLE-PHASE FULL WAVE)



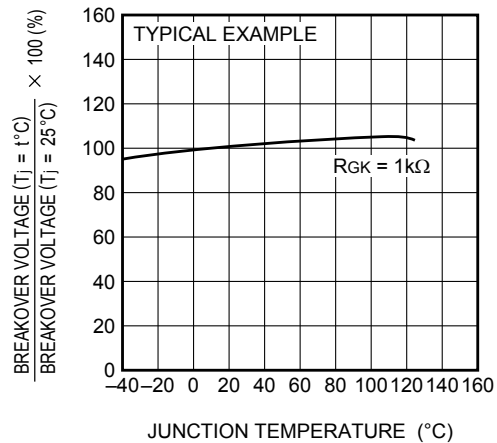
MAXIMUM AVERAGE POWER DISSIPATION (RECTANGULAR WAVE)



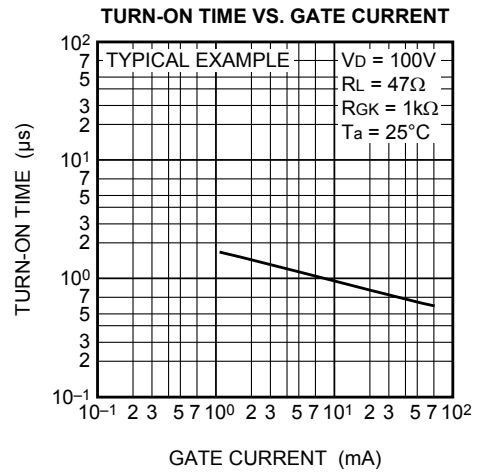
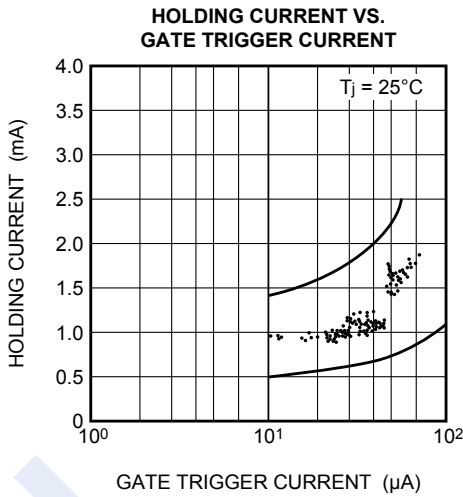
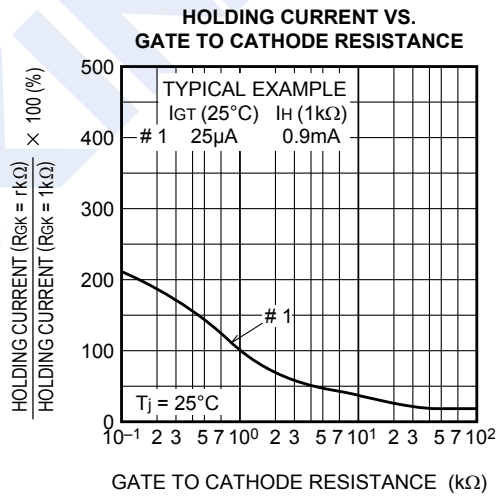
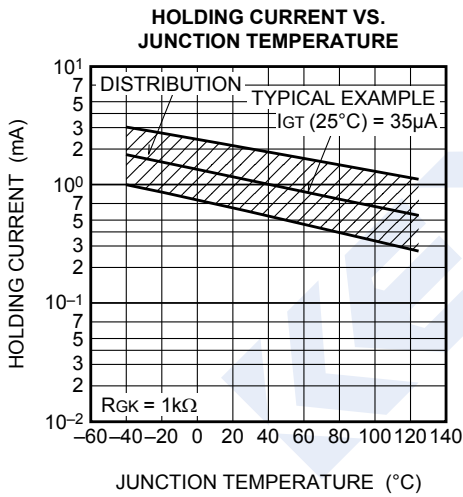
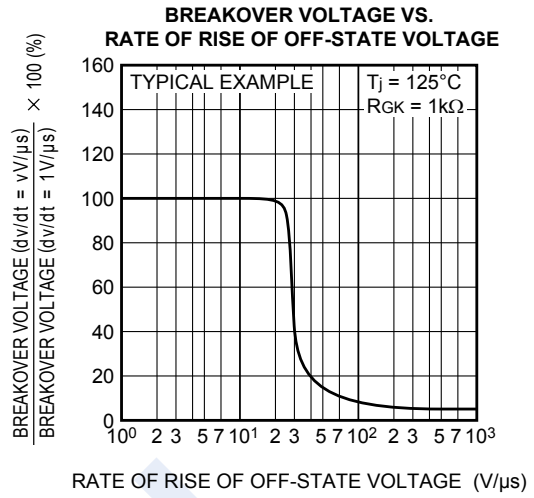
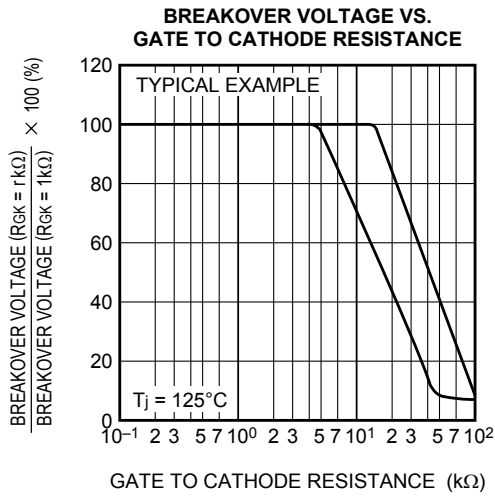
ALLOWABLE AMBIENT TEMPERATURE VS. AVERAGE ON-STATE CURRENT (RECTANGULAR WAVE)



BREAKEOVER VOLTAGE VS. JUNCTION TEMPERATURE



# CR08AS



CR08AS

