

BCR08AS

LOW POWER USE
NON-INSULATED TYPE, PLANAR PASSIVATION TYPE

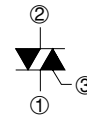
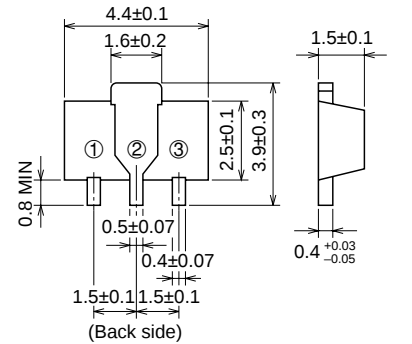
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- I_T (RMS) 0.8A
- V_{DRM} 600V
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$ 5mA
- $I_{FGT III}$ 10mA

OUTLINE DRAWING

Dimensions
in mm



SOT-89

APPLICATION

Hybrid IC, solid state relay,
control of household equipment such as electric fan · washing machine,
other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		12 (marked "BF")	
V_{DRM}	Repetitive peak off-state voltage *1	600	V
V_{DSM}	Non-repetitive peak off-state voltage *1	720	V

Symbol	Parameter	Conditions	Ratings	Unit
I_T (RMS)	RMS on-state current	Commercial frequency, sine full wave 360° conduction, $T_a=40^\circ\text{C}$ *3	0.8	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	8	A
I^2_t	I^2_t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.26	A ² s
PGM	Peak gate power dissipation		1	W
PG (AV)	Average gate power dissipation		0.1	W
VGM	Peak gate voltage		6	V
IGM	Peak gate current		1	A
T_j	Junction temperature		-40 ~ +125	°C
T_{stg}	Storage temperature		-40 ~ +125	°C
—	Weight	Typical value	48	mg

*1. Gate open.

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ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test conditions	Limits			Unit
			Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current	$T_J=125^{\circ}\text{C}$, V_{DRM} applied	—	—	1.0	mA
V_{TM}	On-state voltage	$T_c=25^{\circ}\text{C}$, $I_{TM}=1.2\text{A}$, Instantaneous measurement	—	—	2.0	V
$V_{FGT\text{ I}}$	Gate trigger voltage *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	2.0	V
$V_{RGT\text{ I}}$			—	—	2.0	V
$V_{RGT\text{ III}}$			—	—	2.0	V
$V_{FGT\text{ III}}$			—	—	2.0	V
$I_{FGT\text{ I}}$	Gate trigger current *2	$T_J=25^{\circ}\text{C}$, $V_D=6\text{V}$, $R_L=6\Omega$, $R_G=330\Omega$	—	—	5	mA
$I_{RGT\text{ I}}$			—	—	5	mA
$I_{RGT\text{ III}}$			—	—	5	mA
$I_{FGT\text{ III}}$			—	—	10	mA
V_{GD}	Gate non-trigger voltage	$T_J=125^{\circ}\text{C}$, $V_D=1/2V_{DRM}$	0.1	—	—	V
$R_{th(j-a)}$	Thermal resistance	Junction to case *3	—	—	65	$^{\circ}\text{C/W}$
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage *4	$T_J=125^{\circ}\text{C}$	0.5	—	—	$\text{V}/\mu\text{s}$

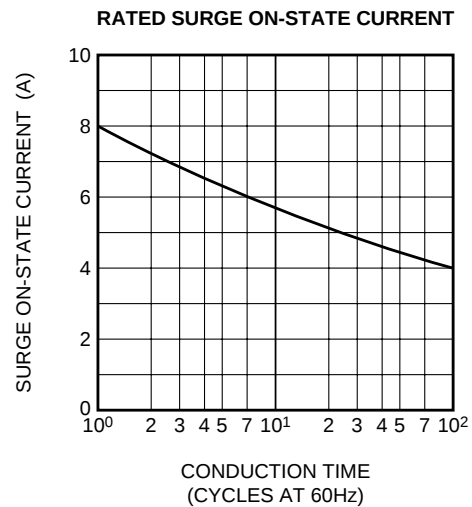
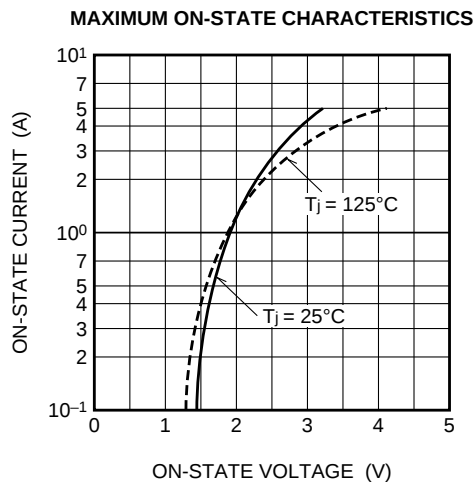
*2. Measurement using the gate trigger characteristics measurement circuit.

*3. Mounted on $25\text{mm} \times 25\text{mm} \times 0.7\text{mm}$ ceramic plate with solder.

*4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_J=125^{\circ}\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c=-0.4\text{A/ms}$ 3. Peak off-state voltage $V_D=400\text{V}$	

PERFORMANCE CURVES

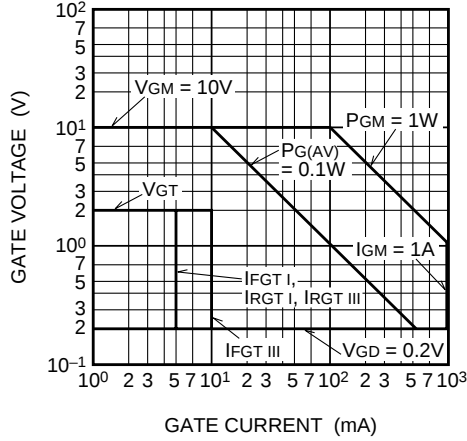


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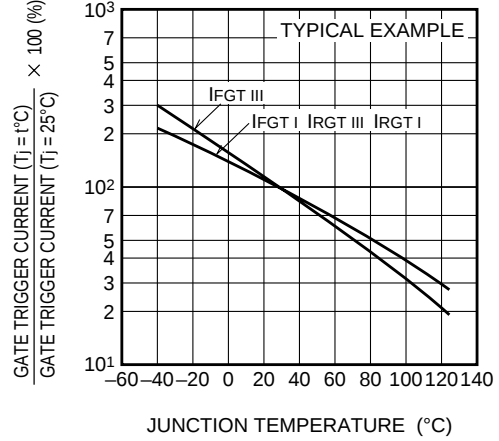
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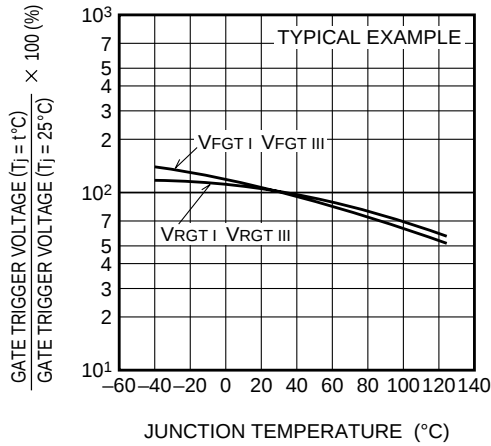
GATE CHARACTERISTICS



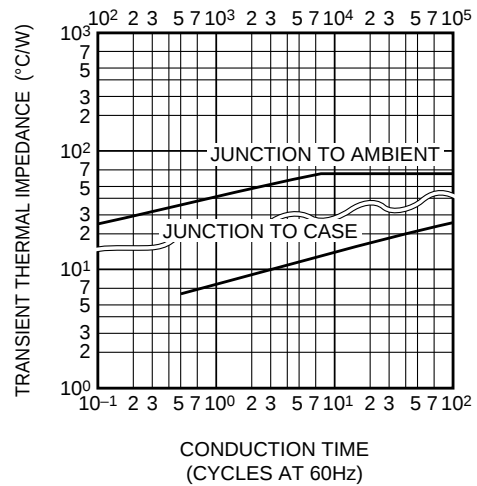
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



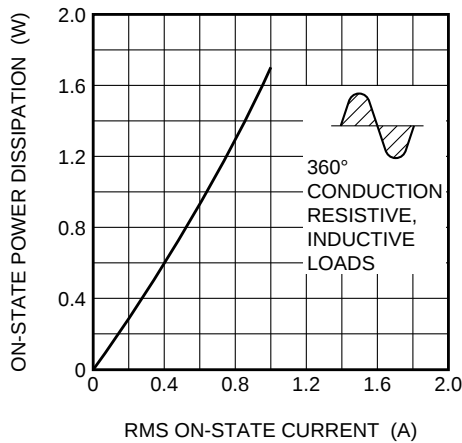
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



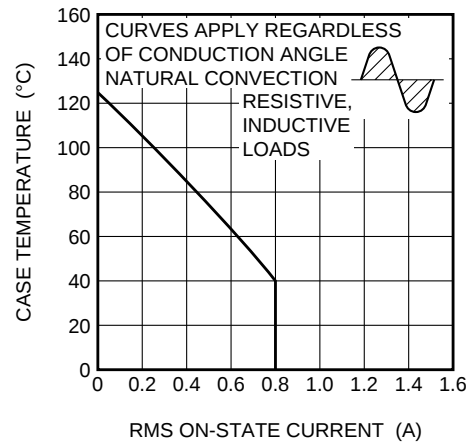
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



MAXIMUM ON-STATE POWER DISSIPATION



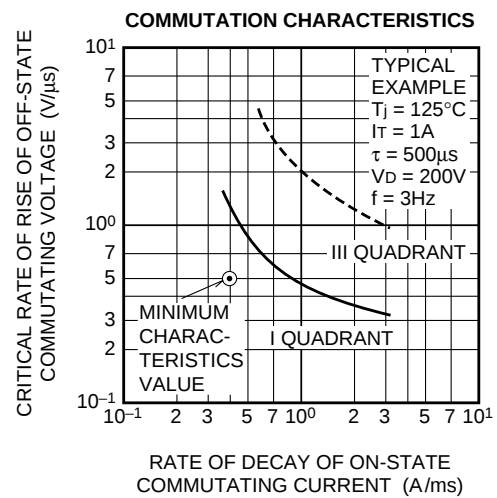
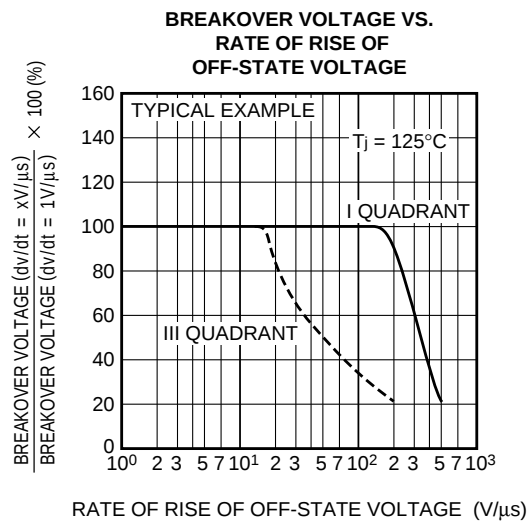
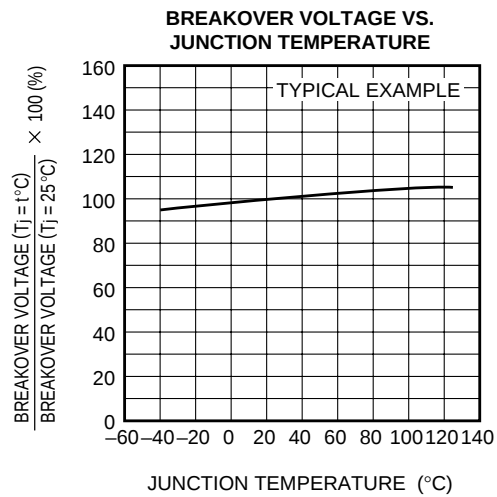
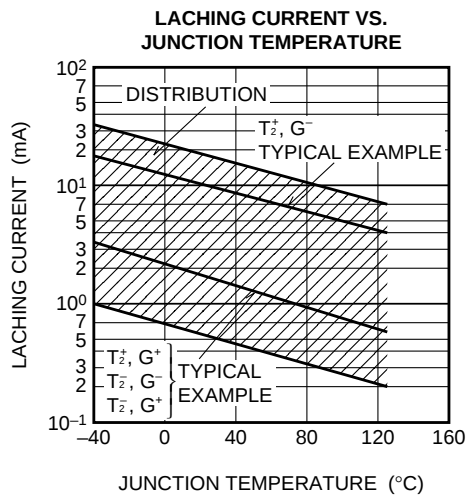
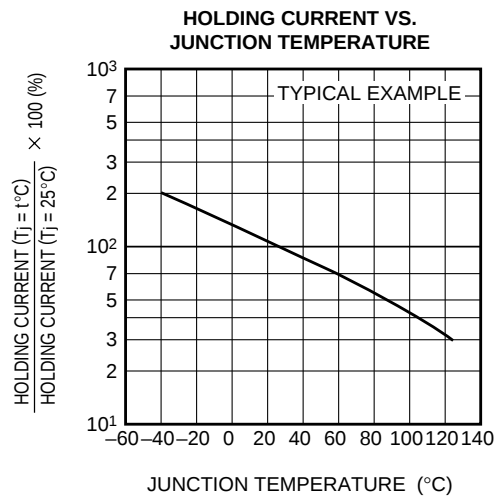
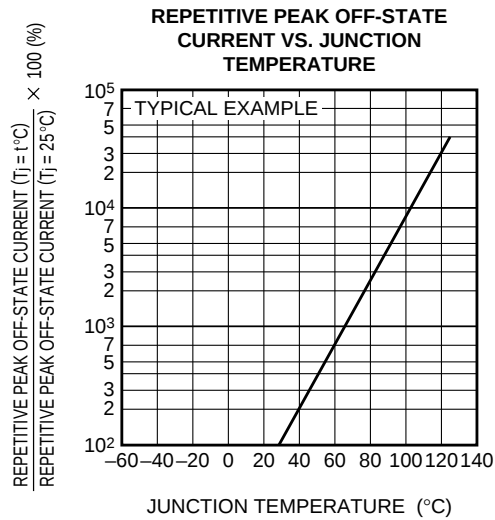
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



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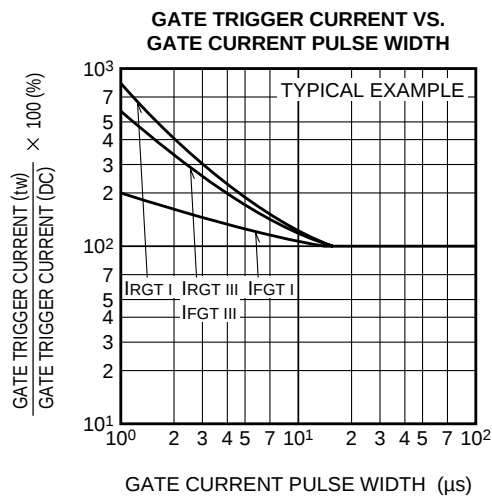
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GATE TRIGGER CHARACTERISTICS TEST CIRCUITS

