BCR08AM

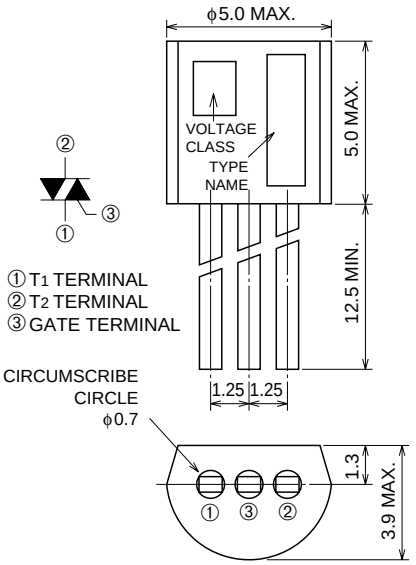
LOW POWER USE
PLANAR PASSIVATION TYPE

BCR08AM

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

OUTLINE DRAWING

Dimensions in mm



JEDEC : TO-92

APPLICATION

Electric fan, air cleaner, other general purpose control applications

MAXIMUM RATINGS

Symbol	Parameter	Voltage class	Unit
		12	
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_C=56°C	0.8	A
I_{TSM}	Surge on-state current	60Hz sinewave 1 full cycle, peak value, non-repetitive	8	A
I^2t	I^2t for fusing	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current	0.26	A^2s
P_{GM}	Peak gate power dissipation		1	W
$P_{G\ (AV)}$	Average gate power dissipation		0.1	W
V_{GM}	Peak gate voltage		6	V
I_{GM}	Peak gate current		0.5	A
T_j	Junction temperature		–40 ~ +125	°C
T_{stg}	Storage temperature		–40 ~ +125	°C
—	Weight	Typical value	0.23	g

*1. Gate open.

Mar. 2002

RENESAS
Renesas Technology Corp.

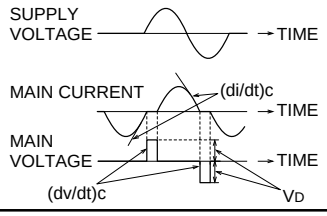
BCR08AM

LOW POWER USE
PLANAR PASSIVATION TYPE

ELECTRICAL CHARACTERISTICS

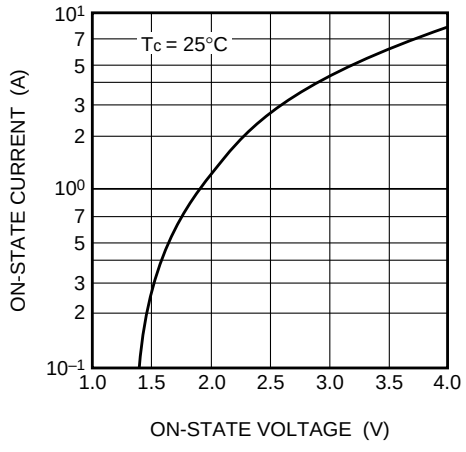
Symbol	Parameter		Test conditions	Limits			Unit
				Min.	Typ.	Max.	
I_{DRM}	Repetitive peak off-state current		T_j=125°C, V_{DRM} applied	—	—	1.0	mA
V_{TM}	On-state voltage		T_C=25°C, I_{TM}=1.2A, Instantaneous measurement	—	—	2.0	V
$V_{GT\ I}$	Gate trigger voltage *2	II	T_j=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	—	—	2.0	V
$V_{GT\ III}$		III		—	—	2.0	V
$I_{GT\ I}$	Gate trigger current *2	II	T_j=25°C, V_D=6V, R_L=6Ω, R_G=330Ω	—	—	5	mA
$I_{GT\ III}$		III		—	—	5	mA
V_{GD}	Gate non-trigger voltage		T_j=125°C, V_D=1/2V_{DRM}	0.1	—	—	V
$R_{th\ (j-c)}$	Thermal resistance		Junction to case *3	—	—	60	°C/W
$(dv/dt)_c$	Critical-rate of rise of off-state commutating voltage *4		T_j=125°C	0.5	—	—	V/μs

*2. Measurment using the gate trigger characteristics measurement circuit.
*3. Case temperature is measured at the T_2 terminal 1.5mm away from the molded case.
*4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

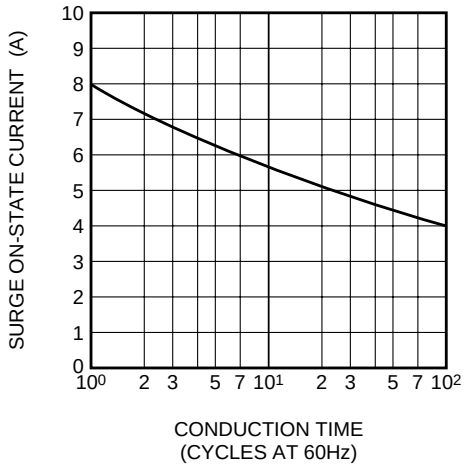
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature T_j=125°C 2. Rate of decay of on-state commutating current $(di/dt)_c$=–0.4A/ms 3. Peak off-state voltage V_D=400V	

PERFORMANCE CURVES

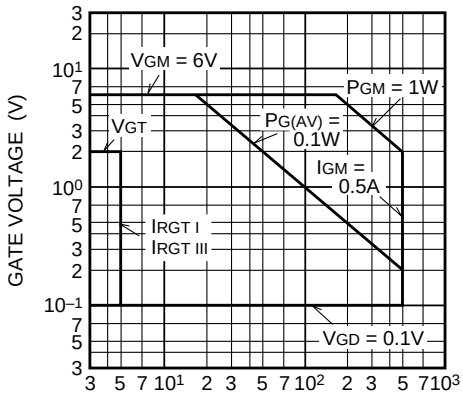
MAXIMUM ON-STATE CHARACTERISTICS



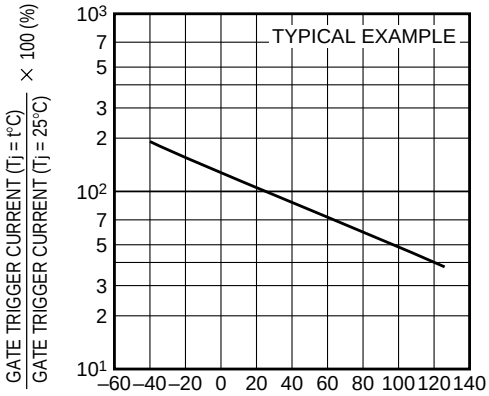
RATED SURGE ON-STATE CURRENT



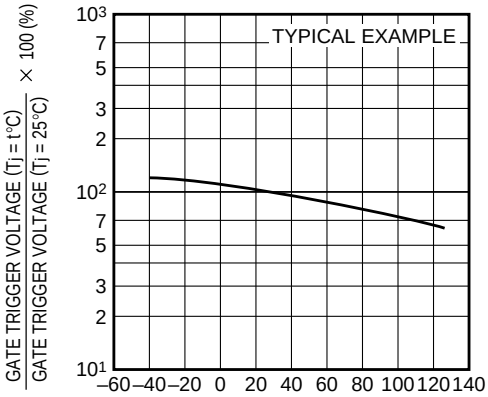
GATE CHARACTERISTICS



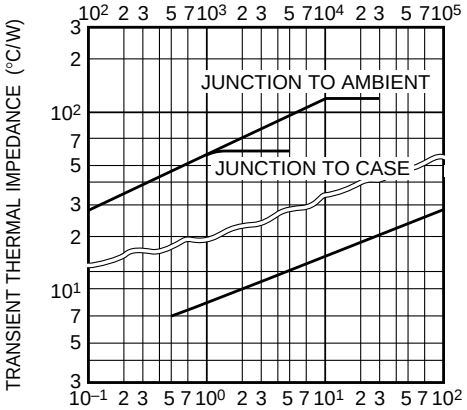
GATE TRIGGER CURRENT VS. JUNCTION TEMPERATURE



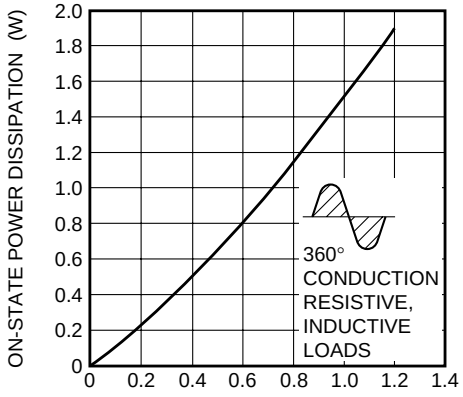
GATE TRIGGER VOLTAGE VS. JUNCTION TEMPERATURE



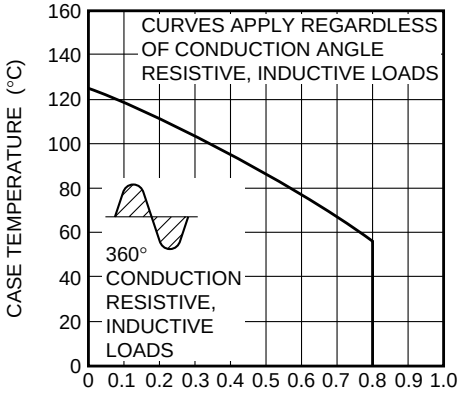
MAXIMUM TRANSIENT THERMAL IMPEDANCE CHARACTERISTICS



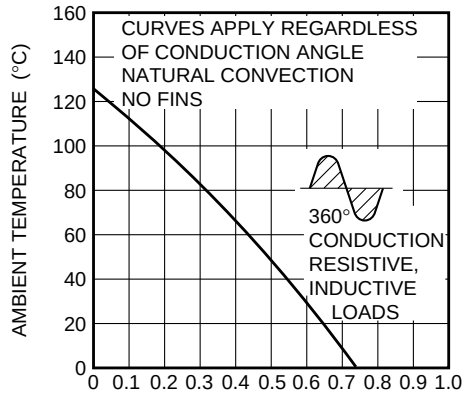
MAXIMUM ON-STATE POWER DISSIPATION



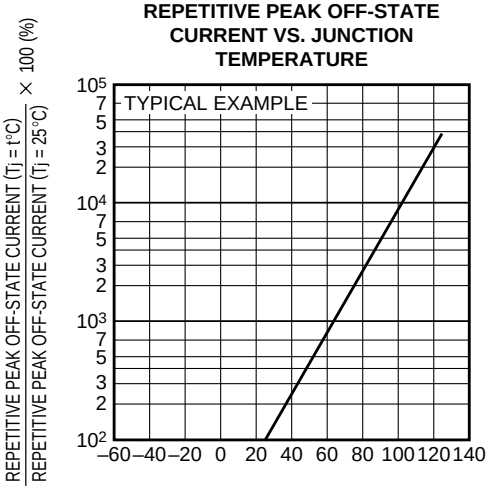
ALLOWABLE CASE TEMPERATURE VS. RMS ON-STATE CURRENT



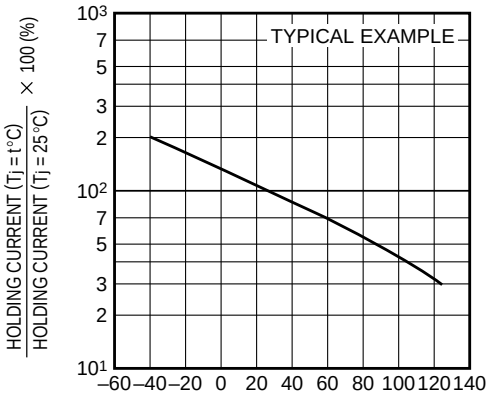
ALLOWABLE AMBIENT TEMPERATURE VS. RMS ON-STATE CURRENT



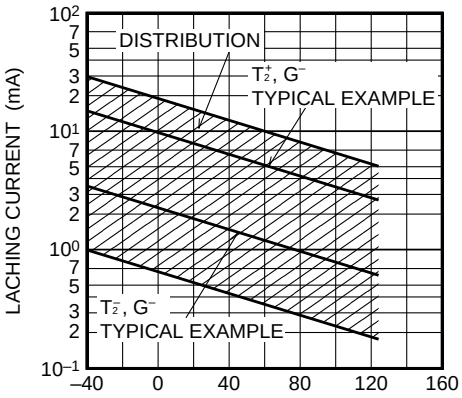
REPETITIVE PEAK OFF-STATE CURRENT VS. JUNCTION TEMPERATURE



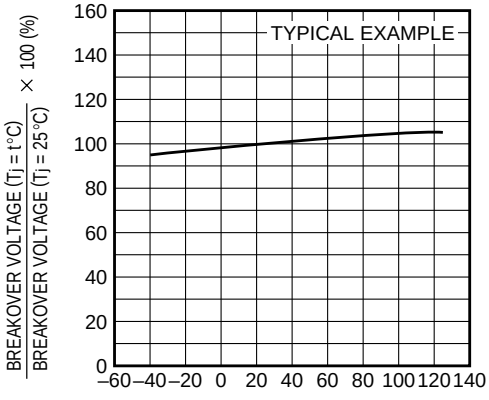
HOLDING CURRENT VS. JUNCTION TEMPERATURE



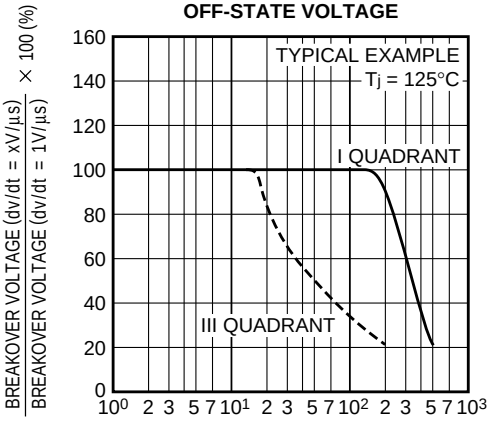
LACHING CURRENT VS. JUNCTION TEMPERATURE



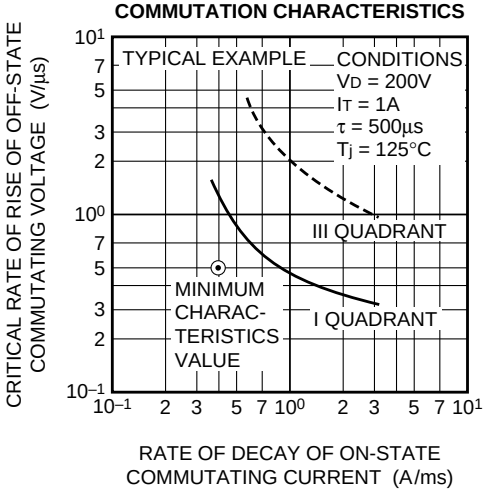
BREAKOVER VOLTAGE VS. JUNCTION TEMPERATURE



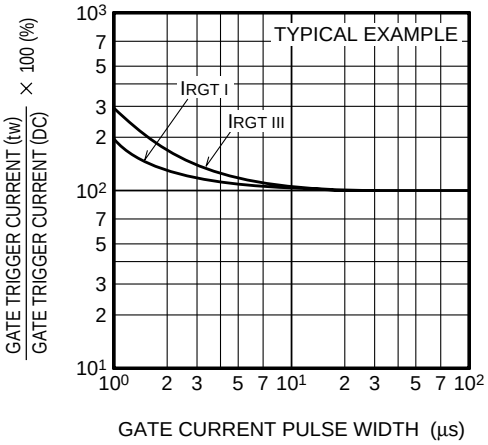
BREAKOVER VOLTAGE VS. RATE OF RISE OF OFF-STATE VOLTAGE



COMMUTATION CHARACTERISTICS



GATE TRIGGER CURRENT VS. GATE CURRENT PULSE WIDTH



GATE TRIGGER CHARACTERISTICS TEST CIRCUITS