BCR8AS-14LJ

Triac
Medium Power Use

R07DS0514EJ0100
Rev.1.00
Oct 14, 2011

Features

- $I_{T\ (RMS)}$: 8 A
- V_{DRM} : 700 V
- I_{FGTI}, I_{RGTI}, $I_{RGT\ III}$: 30 mA
- Non-Insulated Type
- Planar Type
- Surface Mounted type

Outline

RENESAS Package code: PRSS0004ZG-A
(Package name: MP-3A)

1. T_1 Terminal
2. T_2 Terminal
3. Gate Terminal
4. T_2 Terminal

Applications

Washing machine, and other general purpose AC control applications.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		14	
Repetitive peak off-state voltage[Note1]	V_{DRM}	700	V
Non-repetitive peak off-state voltage[Note1]	V_{DSM}	840	V

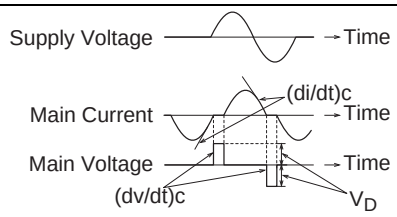
Notes: 1. Gate open.

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\ (RMS)}$	8	A	Commercial frequency, sine full wave 360°conduction, Tc =97°C
Surge on-state current	I_{TSM}	80	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	26	A^2s	Value corresponding to 1 cycle of half wave 60 Hz, surge on-state current
Peak gate power dissipation	P_{GM}	5	W	
Average gate power dissipation	$P_{G\ (AV)}$	0.5	W	
Peak gate voltage	V_{GM}	10	V	
Peak gate current	I_{GM}	2	A	
Junction Temperature	Tj	–40 to +125	°C	
Storage temperature	Tstg	–40 to +125	°C	
Mass	—	0.32	g	Typical value

Electrical Characteristics

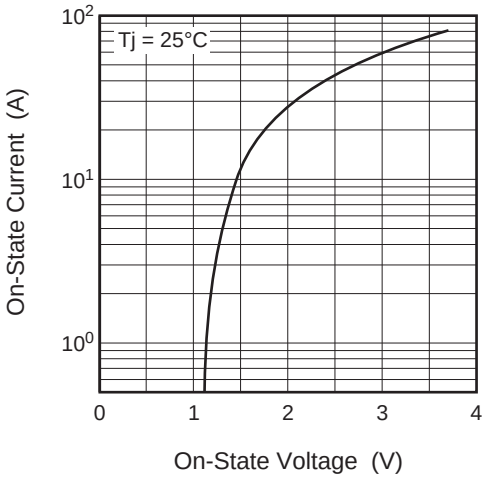
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current		I_{DRM}	—	—	2.0	mA	Tj = 125°C, V_{DRM} applied
On-state voltage		V_{TM}	—	—	1.6	V	Tc = 25°C, I_{TM} = 12 A, instantaneous measurement
Gate trigger voltage[Note2]	I	V_{FGT_I}	—	—	1.5	V	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGT_I}	—	—	1.5	V	
	III	$V_{RGT_{III}}$	—	—	1.5	V	
Gate trigger curent[Note2]	I	I_{FGT_I}	—	—	30	mA	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGT_I}	—	—	30	mA	
	III	$I_{RGT_{III}}$	—	—	30	mA	
Gate non-trigger voltage		V_{GD}	0.2	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-c)}$	—	—	2.7	°C/W	Junction to case[Note3]
Critical-rate of rise of off-state commutation voltage[Note4]		(dv/dt)c	10	—	—	V/μs	Tj = 125°C

Notes: 2. Measurement using the gate trigger characteristics measurement circuit.
3. Case temperature is measured on the T_2 tab.
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below

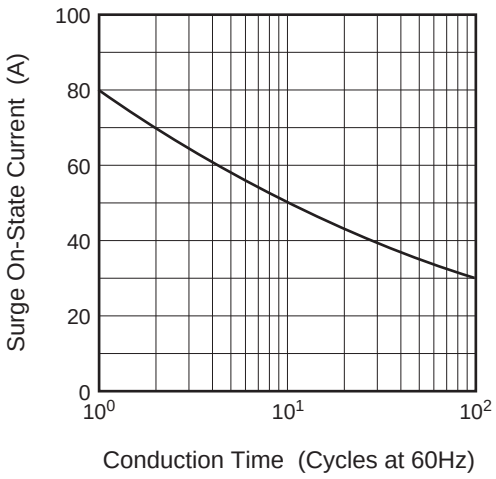
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature Tj = 125°C 2. Rate of decay of on-state commutating current (di/dt)c = –4.0 A/ms 3. Peak off-state voltage V_D = 400 V	

Performance Curves

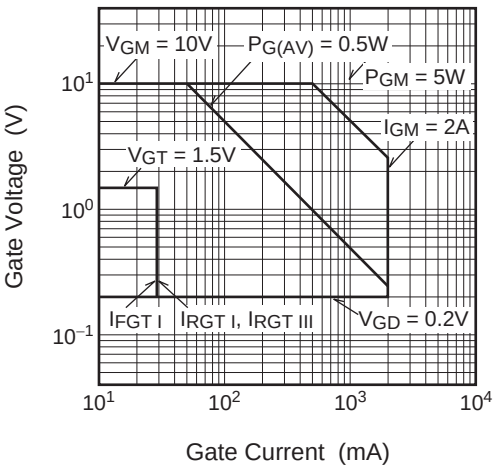
Maximum On-State Characteristics



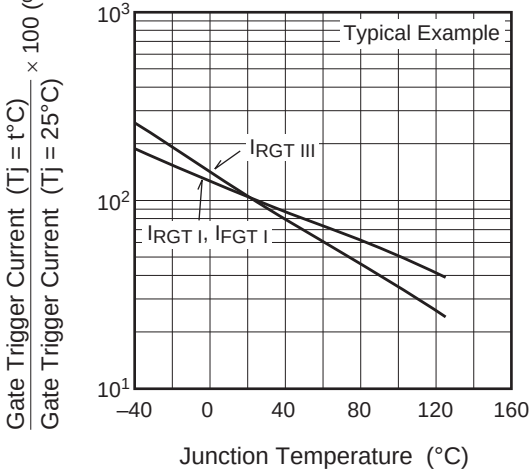
Rated Surge On-State Current



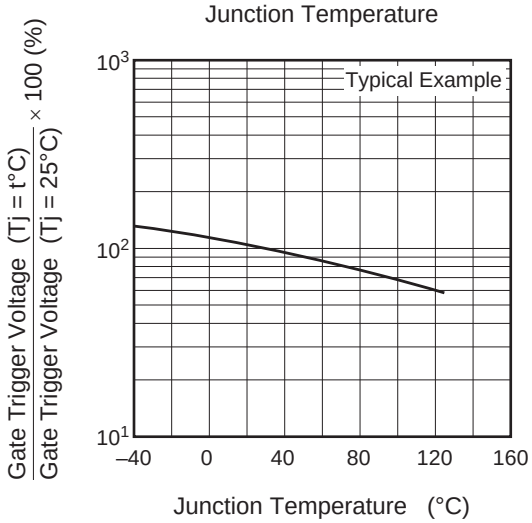
Gate Characteristics (I, II and III)



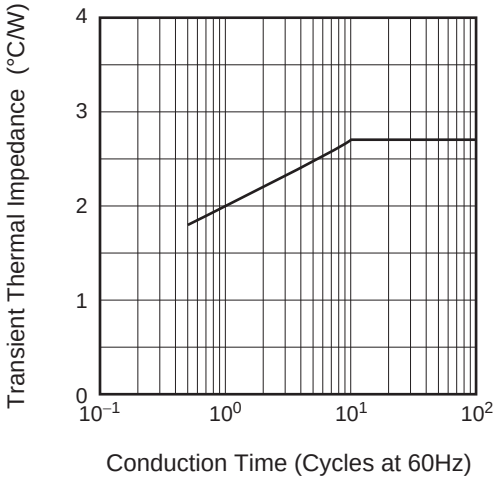
Gate Trigger Current vs. Junction Temperature



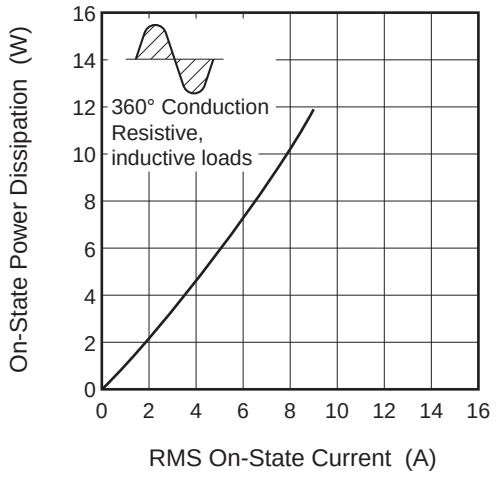
Gate Trigger Voltage vs. Junction Temperature



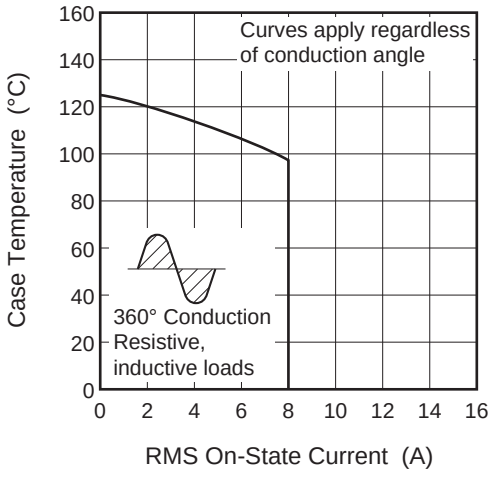
Maximum Transient Thermal Impedance Characteristics (Junction to case)



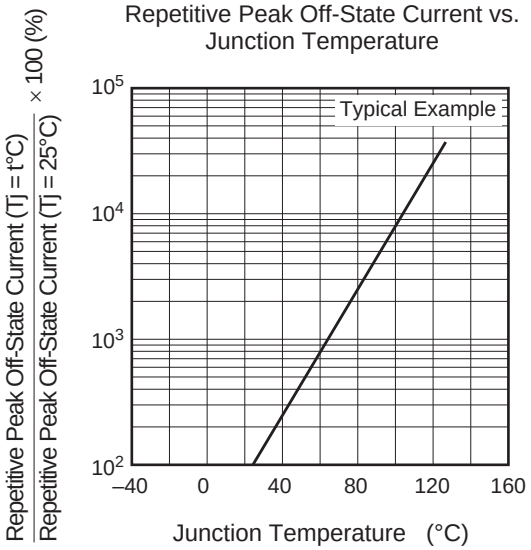
Maximum On-State Power Dissipation



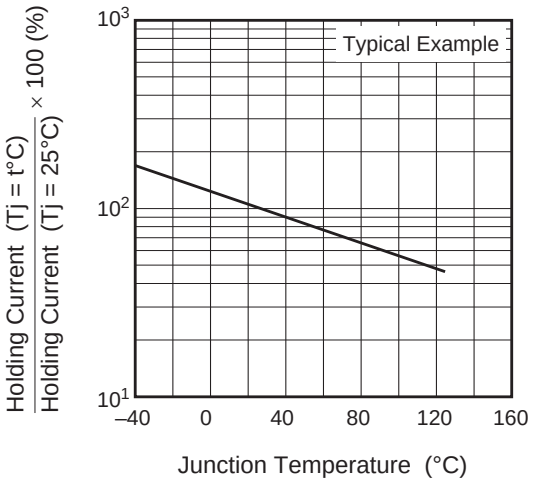
Allowable Case Temperature vs.
RMS On-State Current



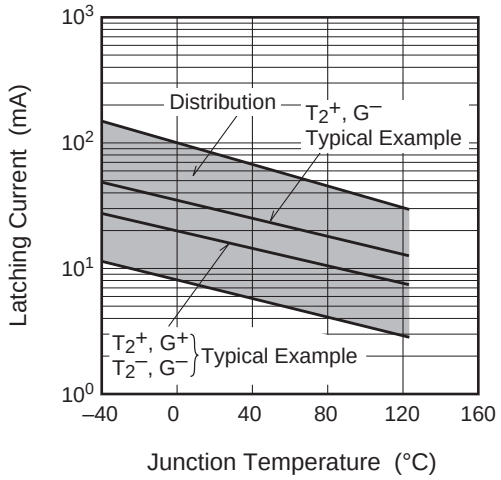
Repetitive Peak Off-State Current vs.
Junction Temperature



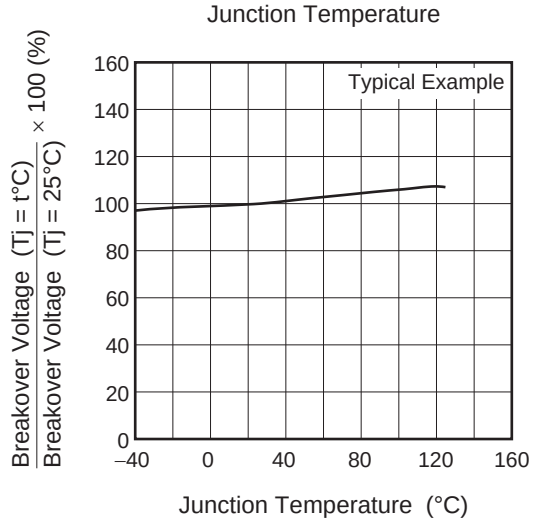
Holding Current vs.
Junction Temperature



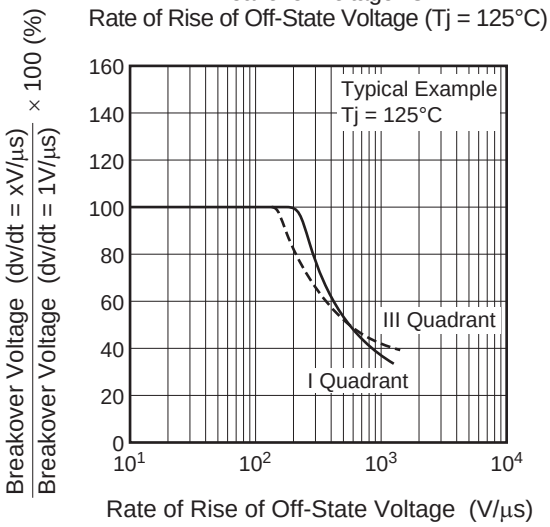
Latching Current vs.
Junction Temperature



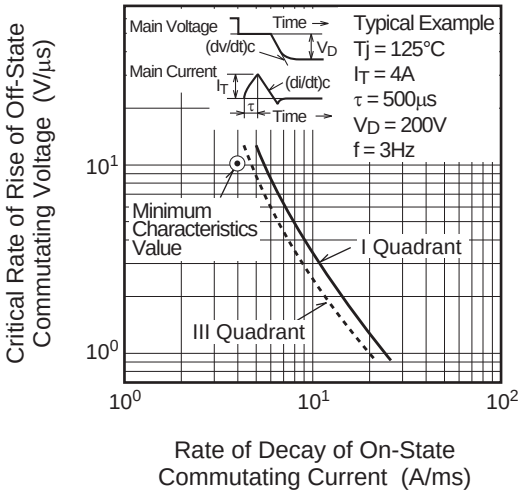
Breakover Voltage vs.
Junction Temperature



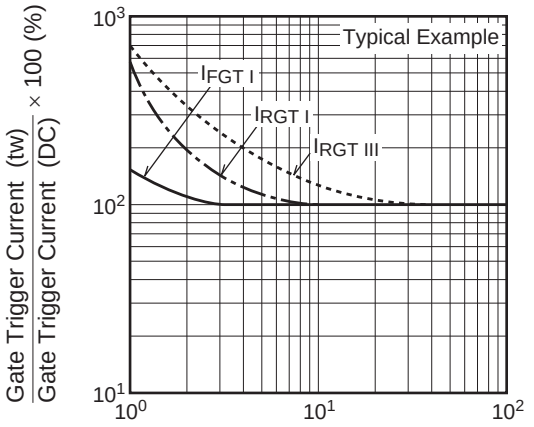
Breakover Voltage vs.
Rate of Rise of Off-State Voltage (Tj = 125°C)



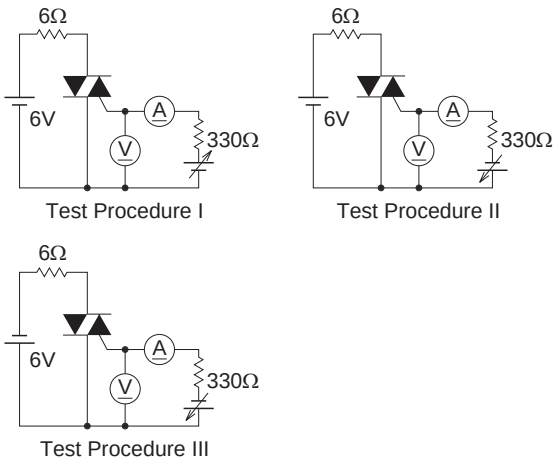
Commutation Characteristics (Tj = 125°C)



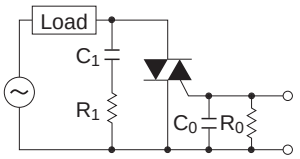
Gate Trigger Current vs.
Gate Current Pulse Width



Gate Trigger Characteristics Test Circuits



Recommended Circuit Values Around The Triac

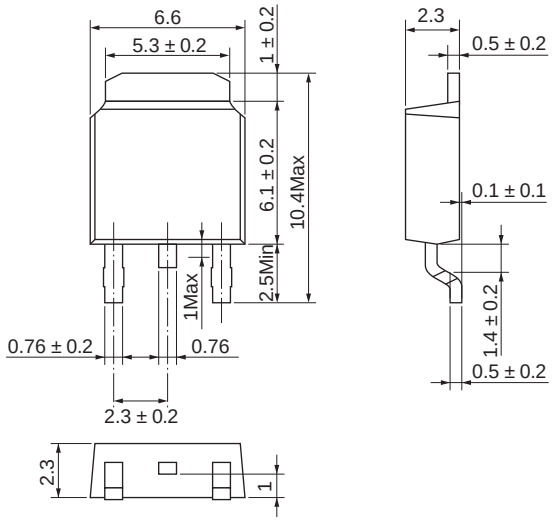


C_1 = 0.1 to 0.47μF C_0 = 0.1μF
R_1 = 47 to 100Ω R_0 = 100Ω

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
MP-3A	SC-63	PRSS0004ZG-A	—	0.32g

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR8AS-14LJ#B01	Tube	75 pcs.	MP-3A package
BCR8AS14LJ-T13#B01	Embossed Tape	3000 pcs.	MP-3A package, Taping direction “T1”

Note : Please confirm the specification about the shipping in detail.

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