

BCR08AS-12A

Triac

Low Power Use

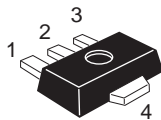
R07DS0134EJ0500
 (Previous: REJ03G0292-0400)
 Rev.5.00
 Sep 15, 2010

Features

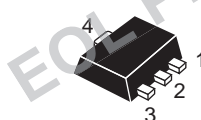
- $I_{T(RMS)}$: 0.8 A
- V_{DRM} : 600 V
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 5 mA
- $I_{FGT III}$: 10 mA
- Non-Insulated Type
- Planar Passivation Type
- Surface Mounted type
- Completed Pb Free

Outline

RENESAS Package code: PLZZ0004CA-A
 (Package name: UPAK)



RENESAS Package code: PLZZ0004CB-A
 (Package name: SOT-89)



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

Applications

Hybrid IC, solid state relay, electric fan, washing machine, and other general purpose control applications

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		12 (Mark BF)	
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	600	V
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	720	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	0.8	A	Commercial frequency, sine full wave 360° conduction, $T_a = 40^\circ\text{C}$ ^{Note3}
Surge on-state current	I_{TSM}	8	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.26	A^2s	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P_{GM}	1	W	
Average gate power dissipation	$P_{G(AV)}$	0.1	W	
Peak gate voltage	V_{GM}	10	V	
Peak gate current	I_{GM}	1	A	
Junction temperature	T_j	- 40 to +125	$^\circ\text{C}$	
Storage temperature	T_{stg}	- 40 to +125	$^\circ\text{C}$	
Mass	—	50	mg	Typical value

Notes: 1. Gate open.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	2.0	mA	$T_j = 125^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	2.0	V	$T_c = 25^\circ\text{C}$, $I_{\text{TM}} = 1.2\text{ A}$, Instantaneous measurement
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	2.0	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	V_{RGTI}	—	—	2.0	
	III	V_{RGTIII}	—	—	2.0	
	IV	V_{FGTIII}	—	—	2.0	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	5	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	5	
	III	I_{RGTIII}	—	—	5	
	IV	I_{FGTIII}	—	—	10	
Gate non-trigger voltage	V_{GD}	0.1	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{\text{DRM}}$
Thermal resistance	$R_{\text{th(j-a)}}$	—	—	65	$^\circ\text{C/W}$	Junction to ambient ^{Note3}
Critical-rate of rise of off-state commutating voltage ^{Note4}	$(dv/dt)_c$	0.5	—	—	$\text{V}/\mu\text{s}$	$T_j = 125^\circ\text{C}$

Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

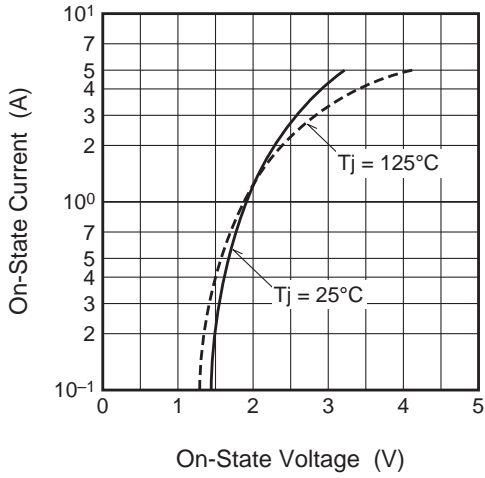
3. Soldering with ceramic plate (25 mm × 25 mm × t0.7 mm).

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

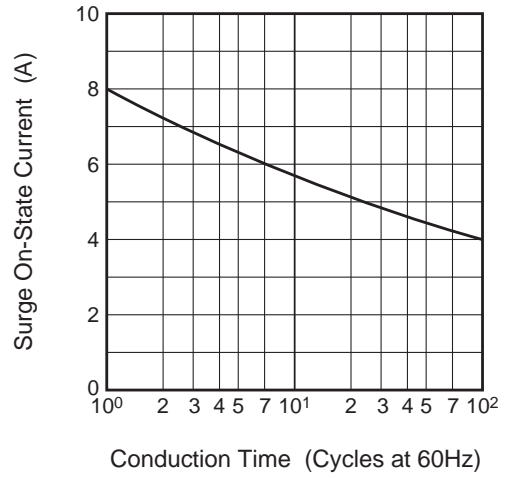
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -0.4\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

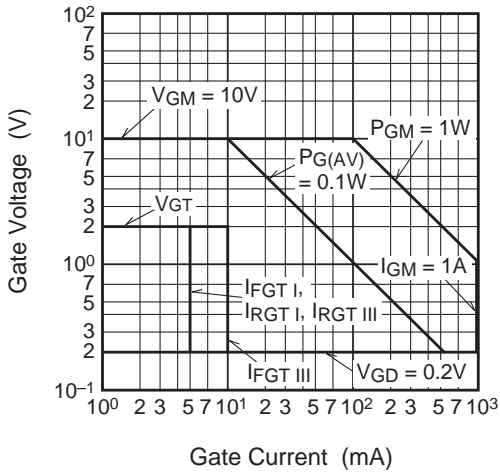
Maximum On-State Characteristics



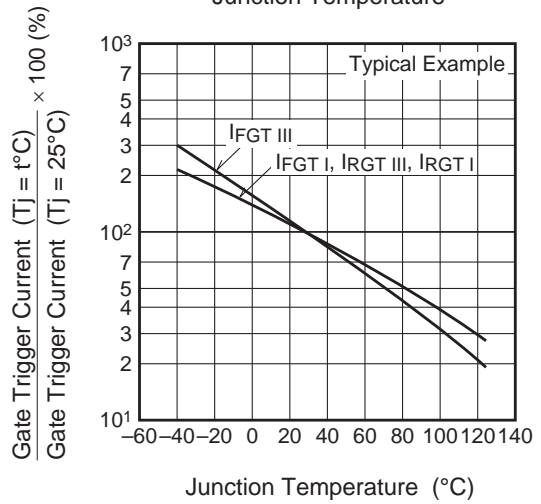
Rated Surge On-State Current



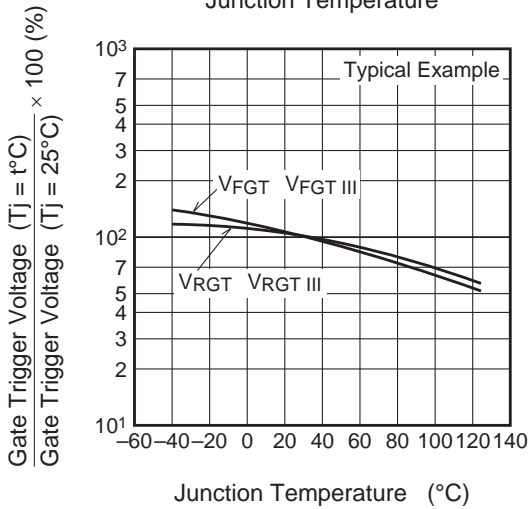
Gate Characteristics



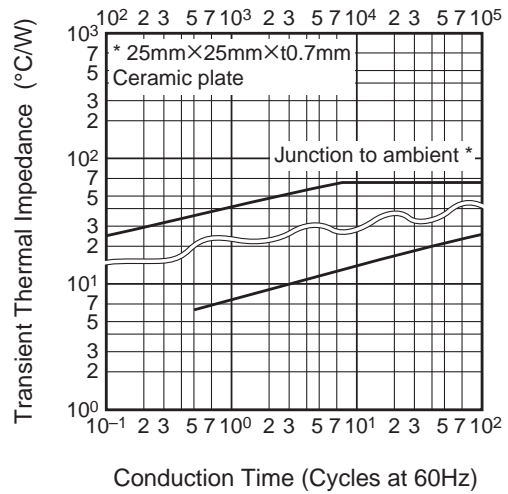
Gate Trigger Current vs. Junction Temperature



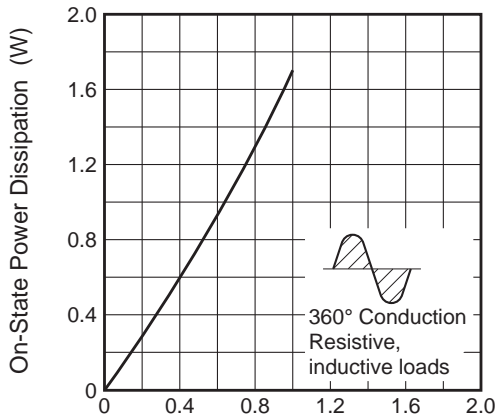
Gate Trigger Voltage vs. Junction Temperature



Maximum Transient Thermal Impedance Characteristics (Junction to ambient)

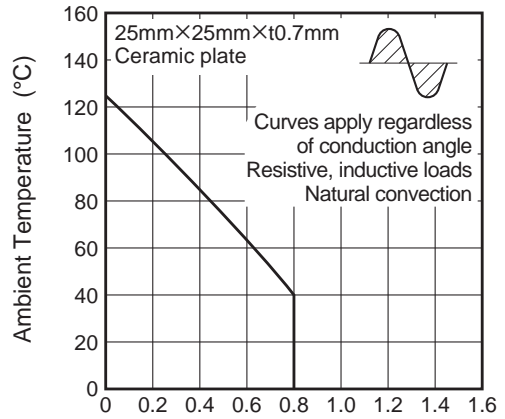


Maximum On-State Power Dissipation



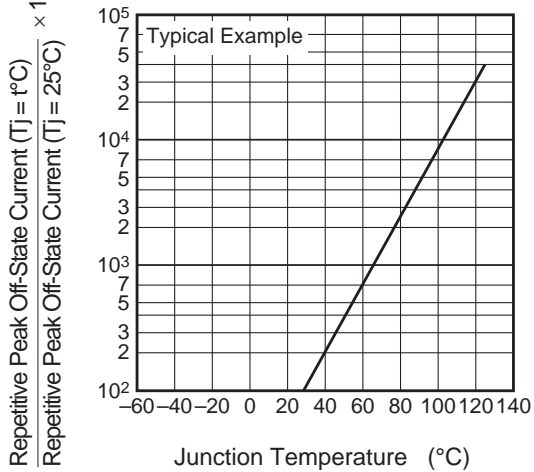
RMS On-State Current (A)

Allowable Ambient Temperature vs. RMS On-State Current



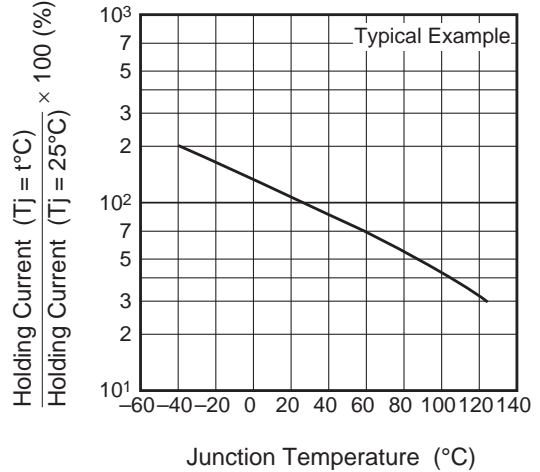
RMS On-State Current (A)

Repetitive Peak Off-State Current vs. Junction Temperature



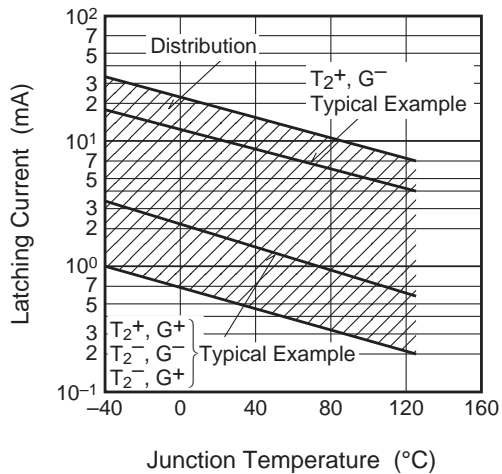
Junction Temperature (°C)

Holding Current vs. Junction Temperature



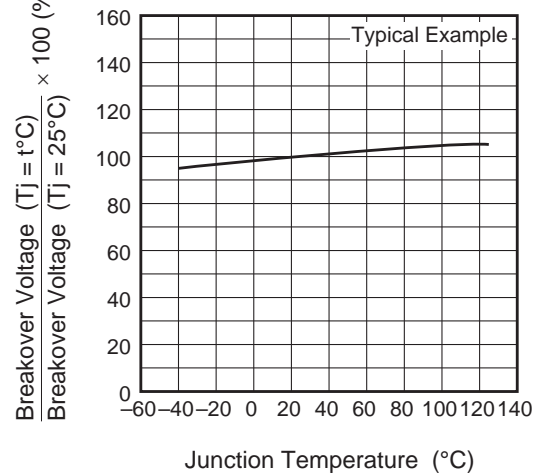
Junction Temperature (°C)

Latching Current vs. Junction Temperature

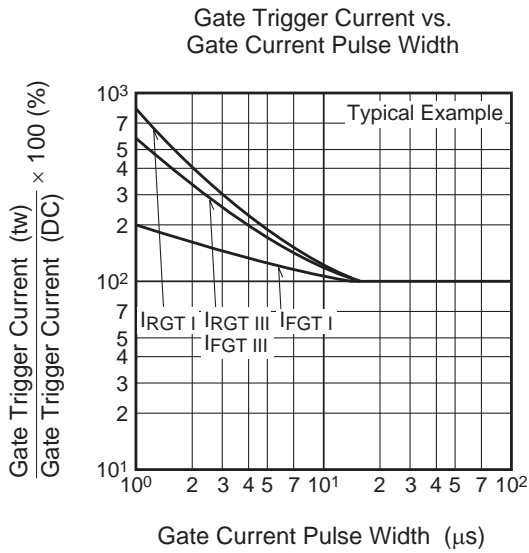
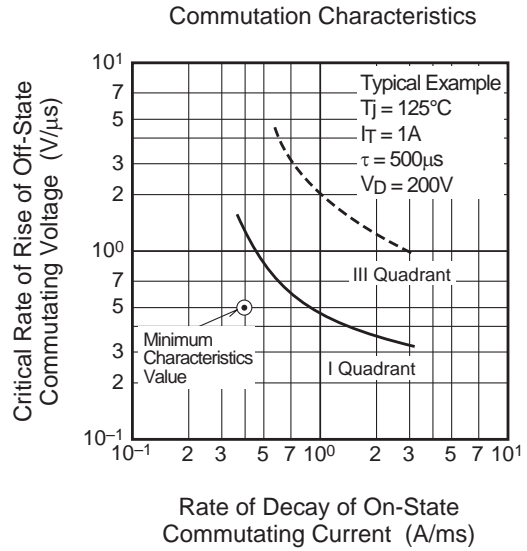
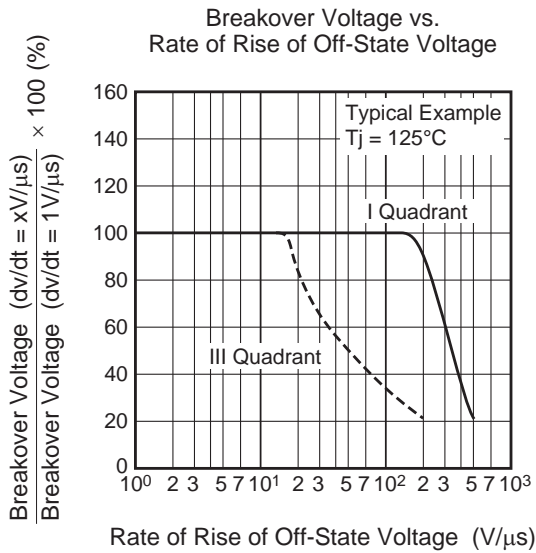


Junction Temperature (°C)

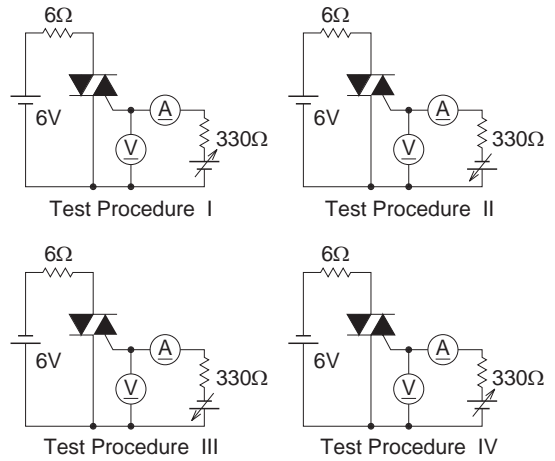
Breakover Voltage vs. Junction Temperature



Junction Temperature (°C)



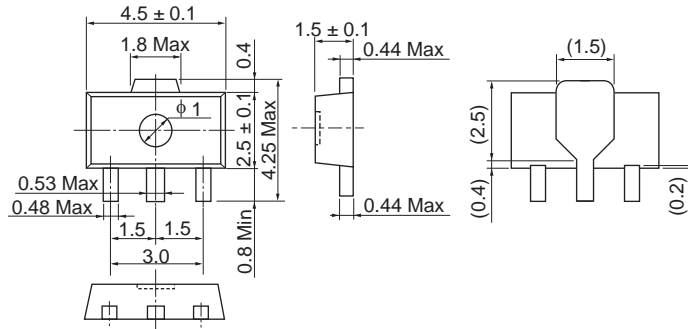
Gate Trigger Characteristics Test Circuits



Package Dimensions

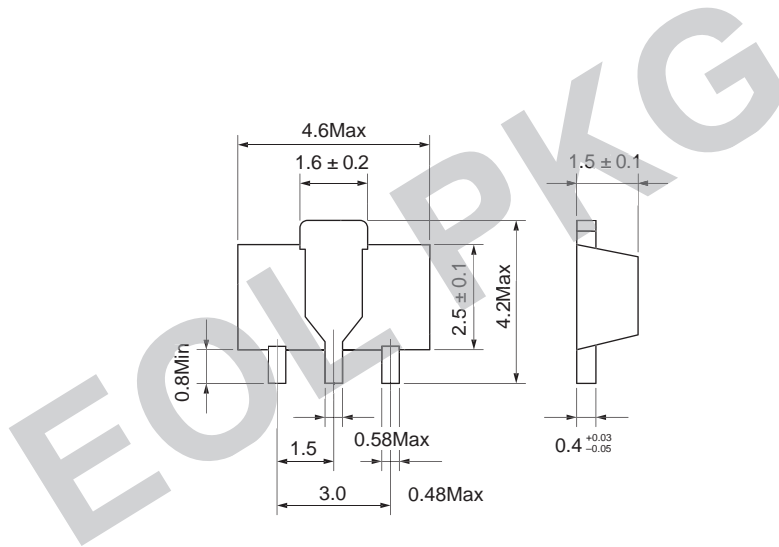
Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
UPAK	SC-62	PLZZ0004CA-A	UPAK / UPAKV	0.050g

Unit: mm



Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
SOT-89	SC-62	PLZZ0004CB-A	—	0.48g

Unit: mm



Order Code

Lead form	Standard packing	Quantity	Standard order code	Standard order code example
Surface-mounted type	Taping	4000	Type name -T +Direction (1 or 2)+4	BCR08AS-12A-T14

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

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