



BCR08AS-12

Triac

Low Power Use

REJ03G0292-0200

Rev.2.00

Mar 22, 2007

Features


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

Outline

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



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





1. T₁ Terminal
2. T₂ Terminal
3. Gate Terminal
4. T₂ 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 ² s	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	°C	
Storage temperature	T_{stg}	- 40 to +125	°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	$T_c = 25^\circ\text{C}$, $I_{TM} = 1.2\text{ A}$, 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	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-a)}$	—	—	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.

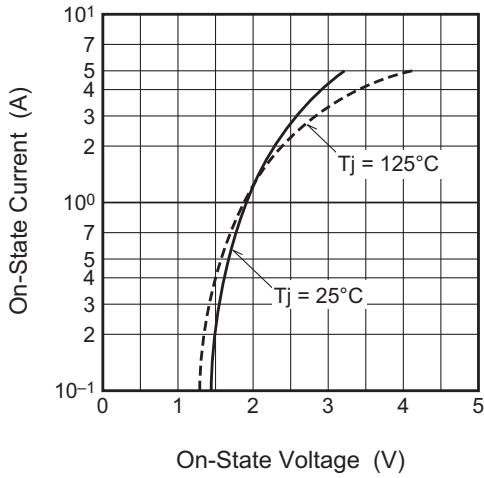
3. Soldering with ceramic plate (25 mm × 25 mm × t0.7 mm).

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

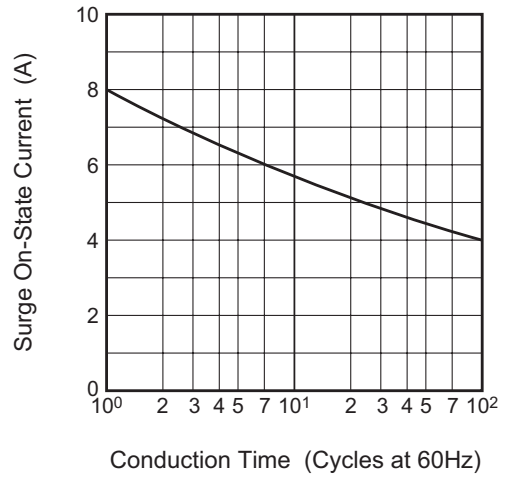
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -0.4\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

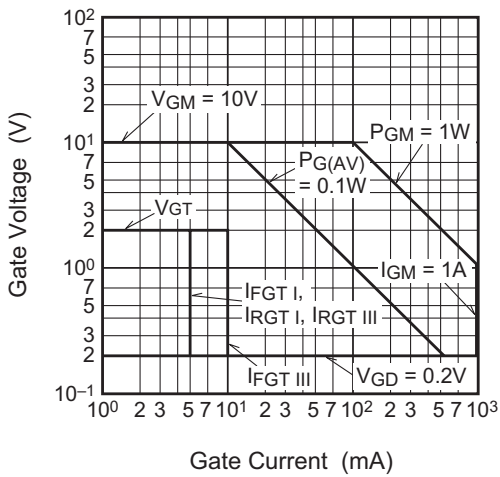
Maximum On-State Characteristics



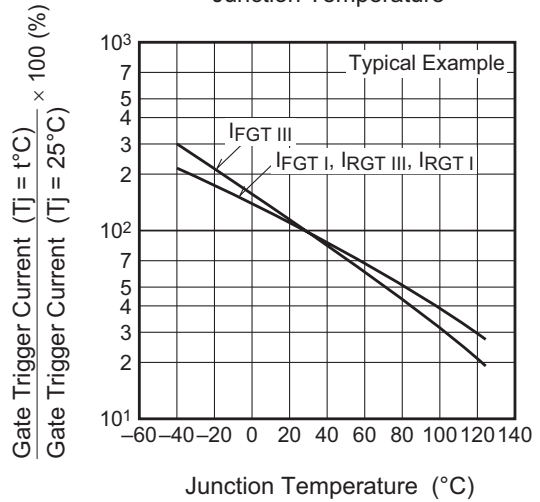
Rated Surge On-State Current



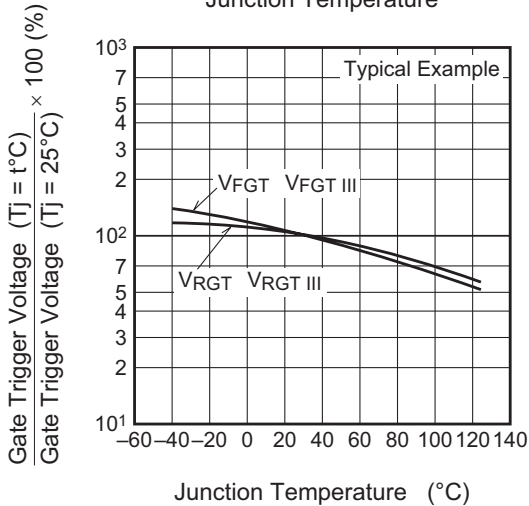
Gate Characteristics



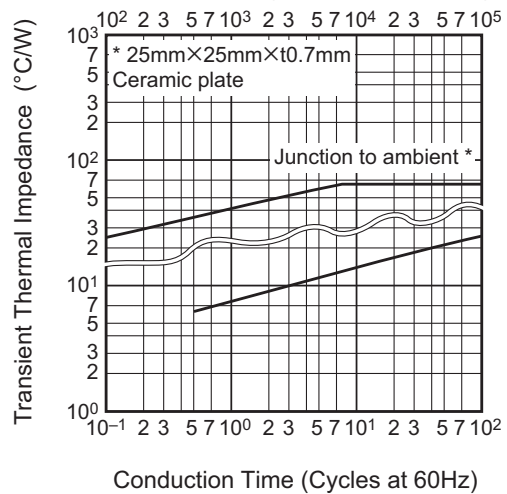
Gate Trigger Current vs. Junction Temperature



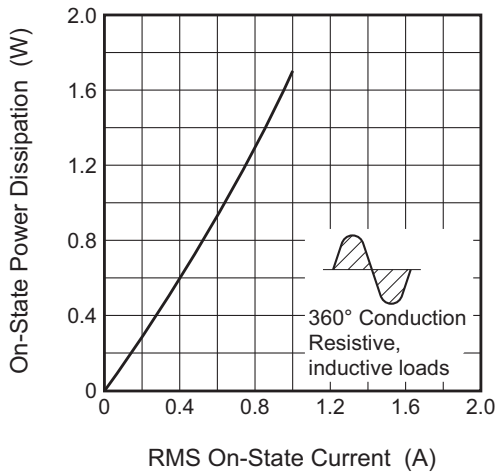
Gate Trigger Voltage vs. Junction Temperature



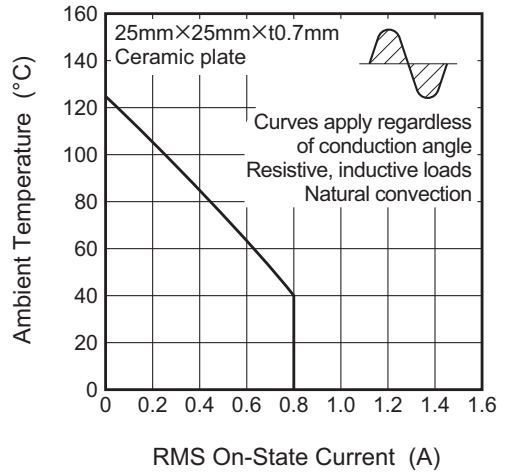
Maximum Transient Thermal Impedance Characteristics (Junction to ambient)



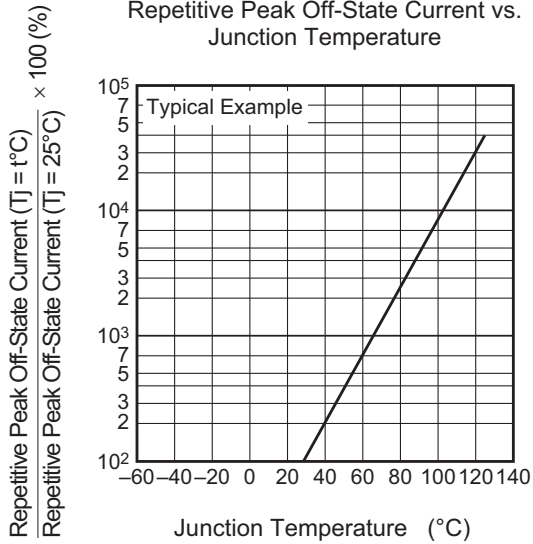
Maximum On-State Power Dissipation



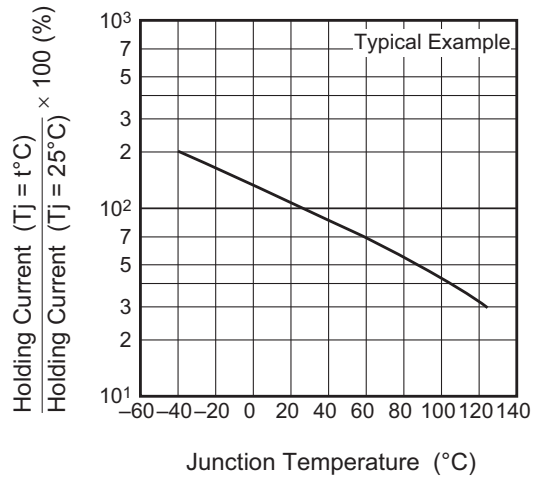
Allowable Ambient Temperature vs. RMS On-State Current



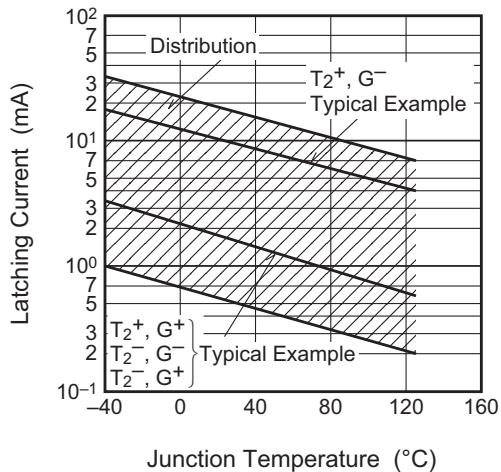
Repetitive Peak Off-State Current vs. Junction Temperature



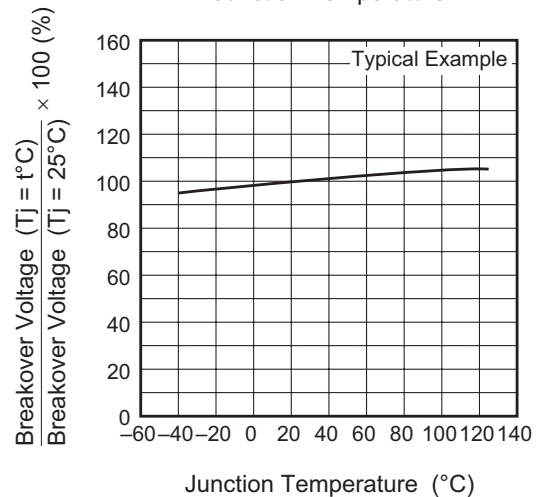
Holding Current vs. Junction Temperature

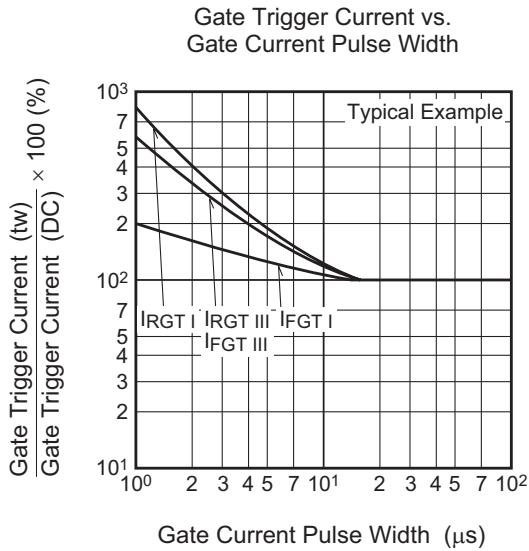
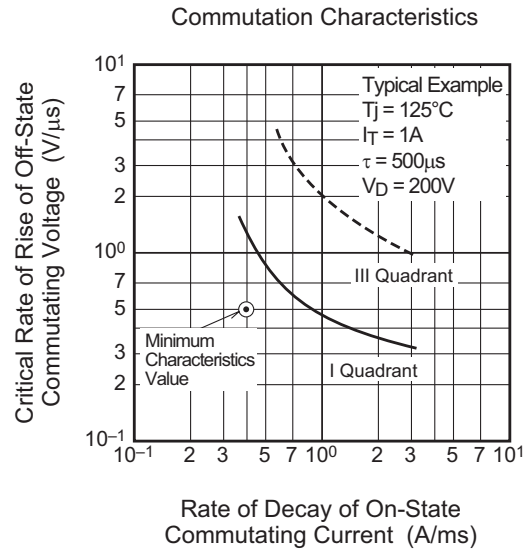
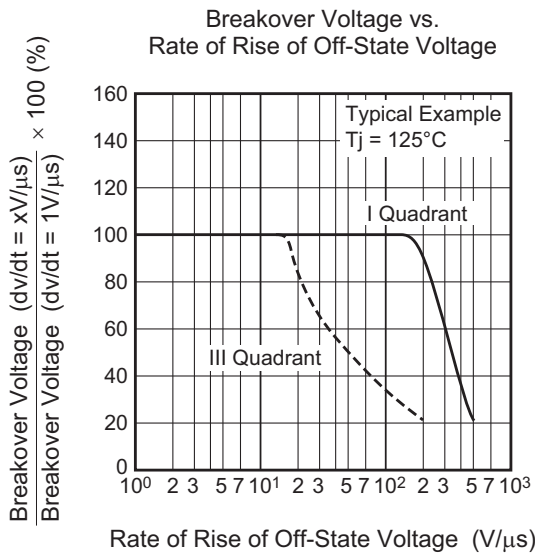


Latching Current vs. Junction Temperature

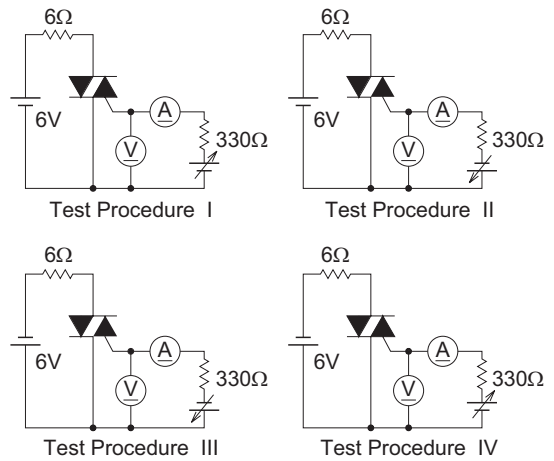


Breakover Voltage vs. Junction Temperature

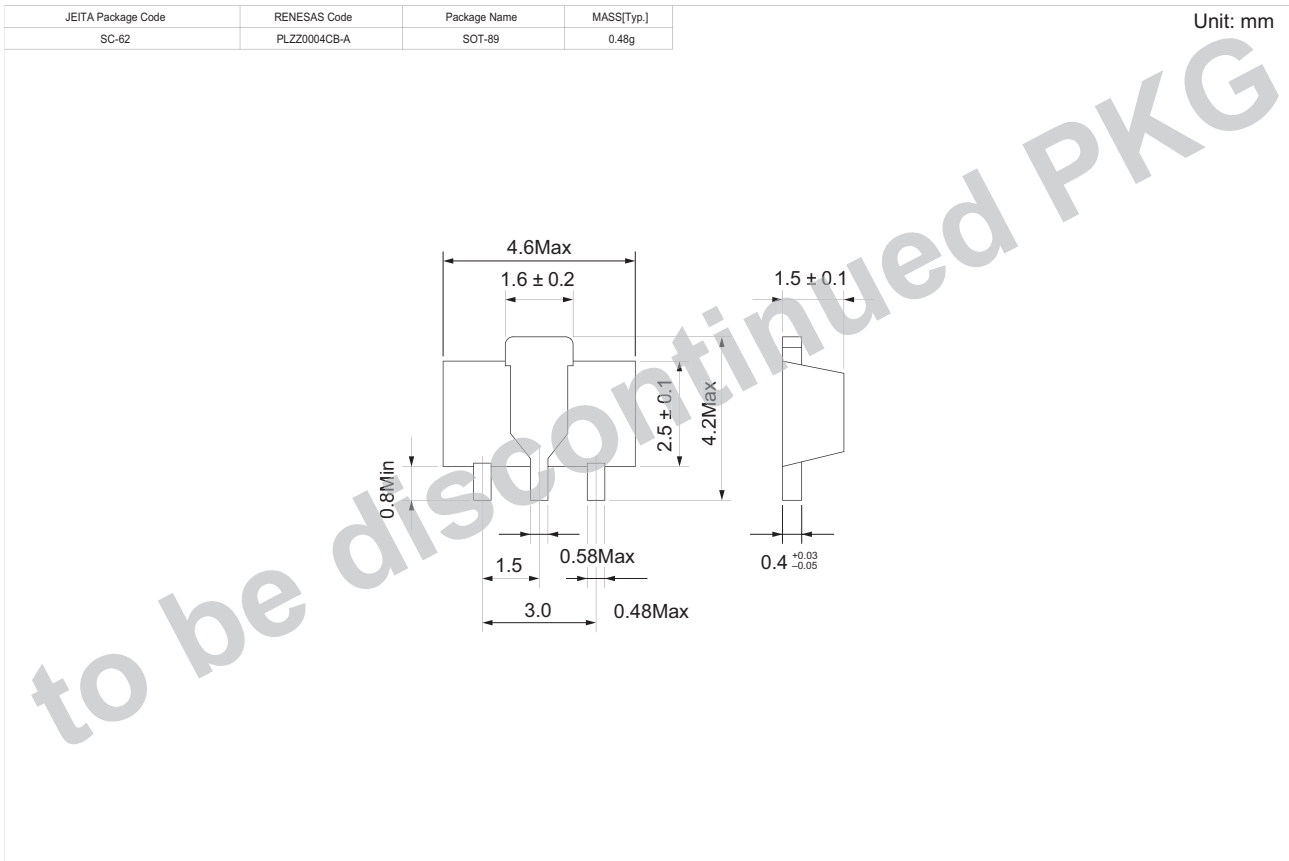
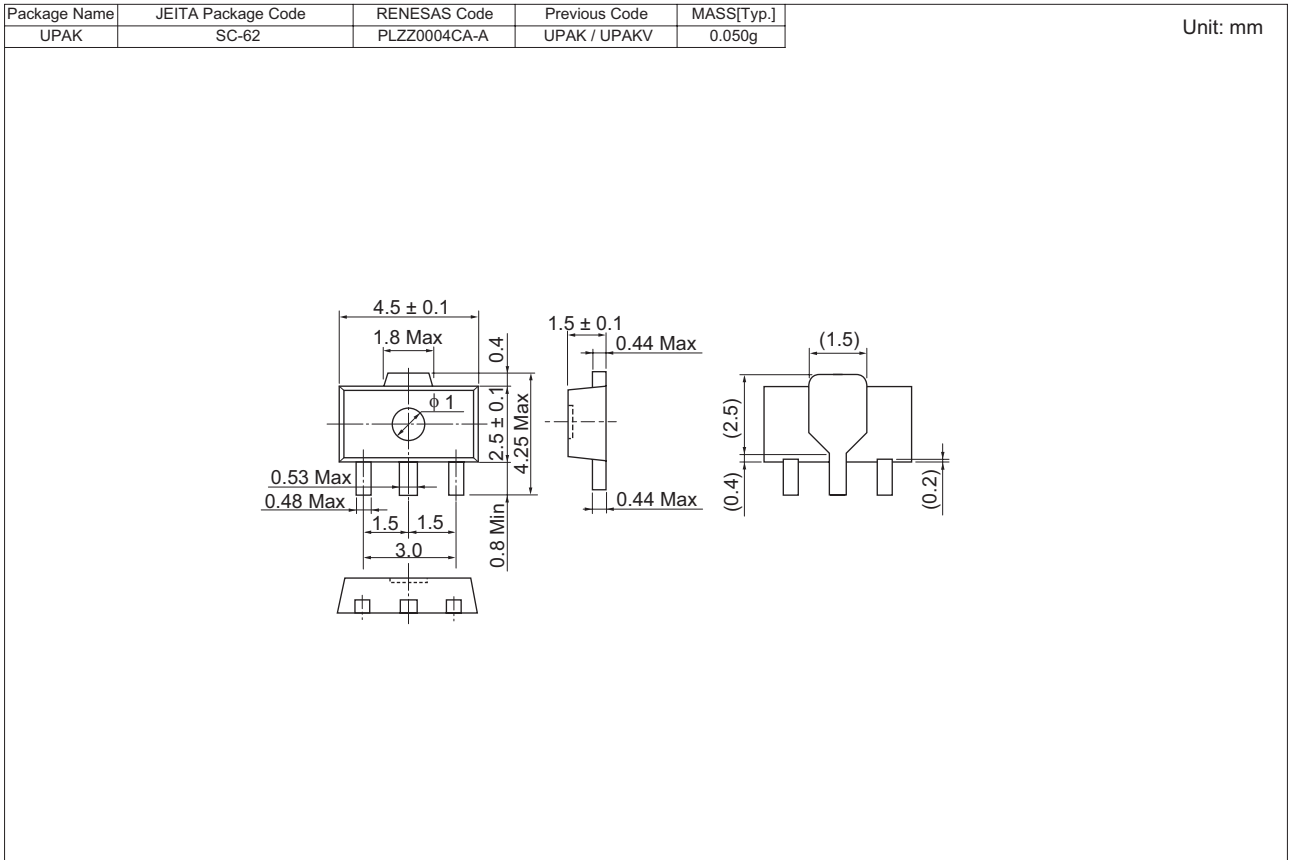




Gate Trigger Characteristics Test Circuits



Package Dimensions



BCR08AS-12

Order Code

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

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

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