

# BCR08AS-12A

## Triac

Low Power Use

REJ03G0292-0400

Rev.4.00

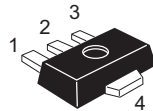
Dec 10, 2008

### Features

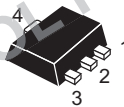
- $I_{T(RMS)}$  : 0.8 A
- $V_{DRM}$  : 600 V
- $I_{FGTI}$ ,  $I_{RGTI}$ ,  $I_{RGT III}$  : 5 mA
- $I_{FGT}$  : 10 mA
- Non-Insulated Type
- Planar Passivation Type
- Completed Pb Free

### Outline

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



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



1. T<sub>1</sub> Terminal
2. T<sub>2</sub> Terminal
3. Gate Terminal
4. T<sub>2</sub> 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 <sup>Note1</sup>	$V_{DRM}$	600	V
Non-repetitive peak off-state voltage <sup>Note1</sup>	$V_{DSM}$	720	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	0.8	A	Commercial frequency, sine full wave 360° conduction, $T_a = 40^{\circ}\text{C}$ <sup>Note3</sup>
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 <sup>2</sup> 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 <sup>Note2</sup>	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 <sup>Note2</sup>	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 <sup>Note3</sup>
Critical-rate of rise of off-state commutating voltage <sup>Note4</sup>	$(dv/dt)_c$	0.5	—	—	V/ $\mu\text{s}$	$T_j = 125^\circ\text{C}$

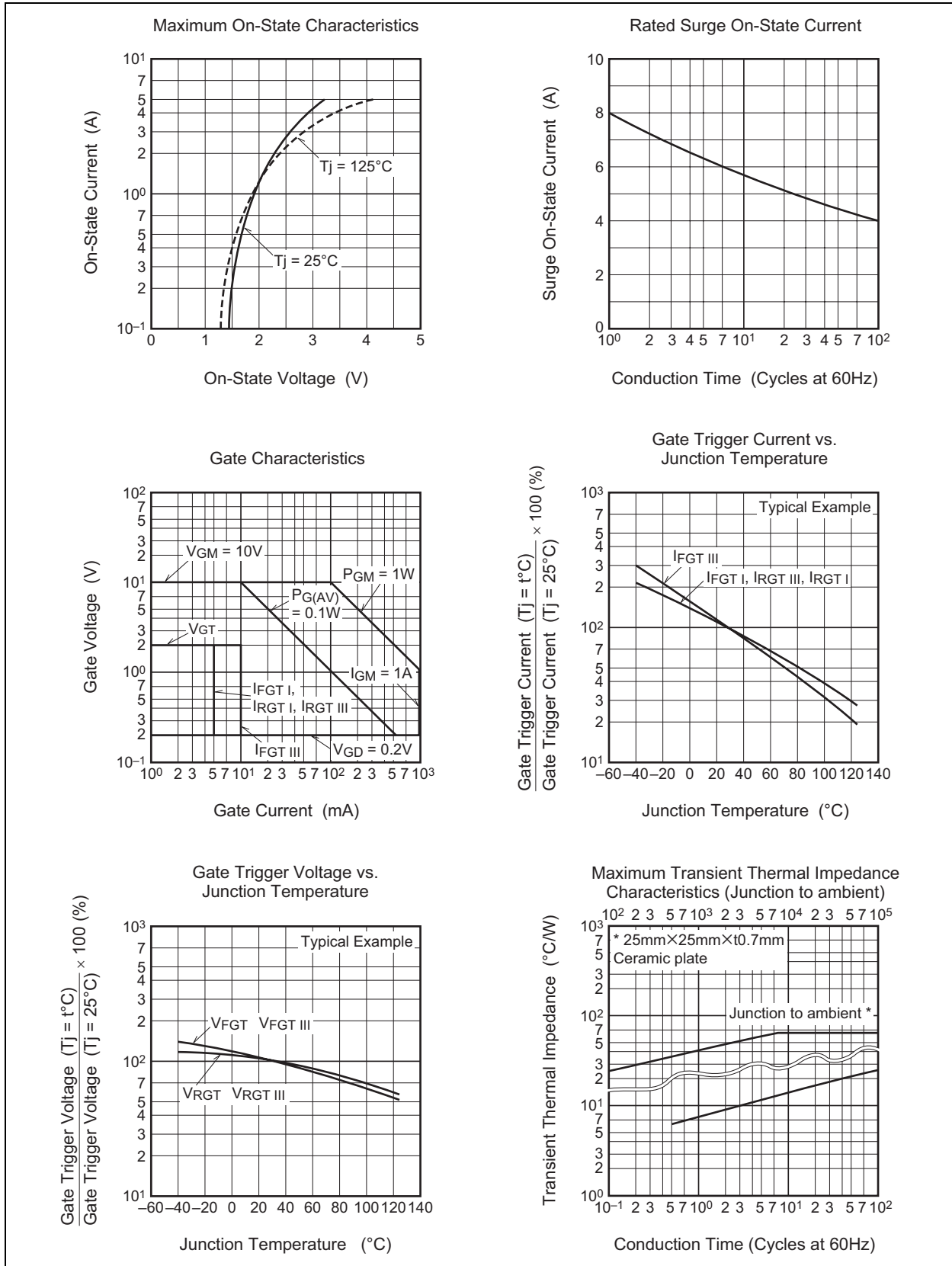
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

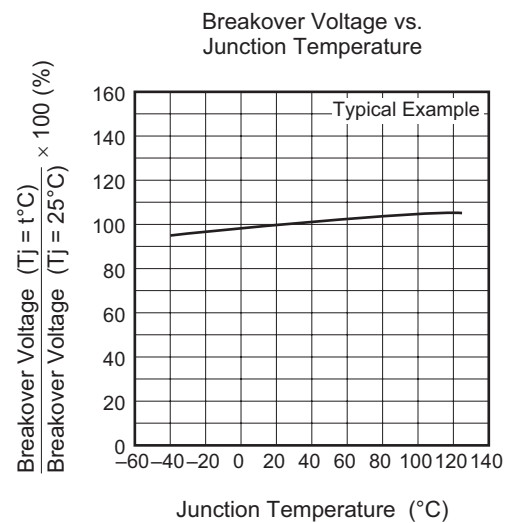
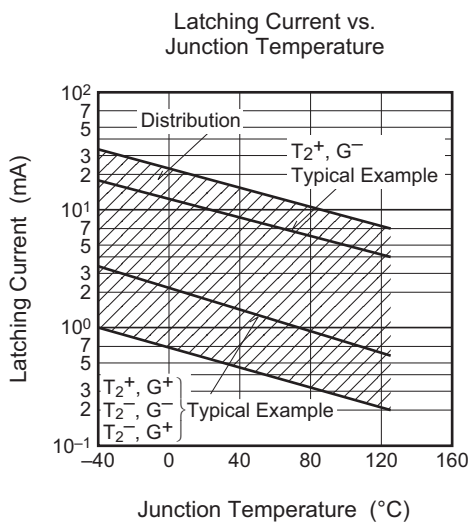
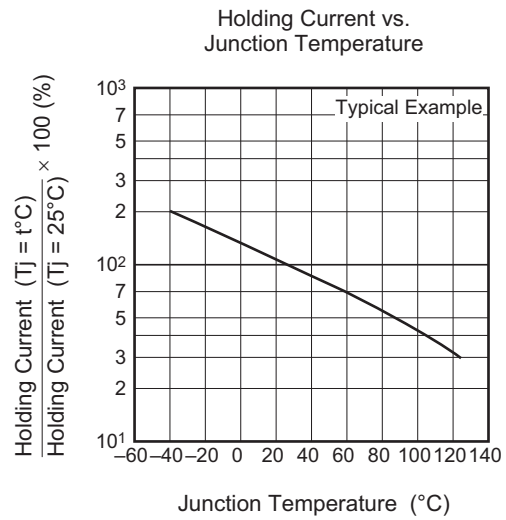
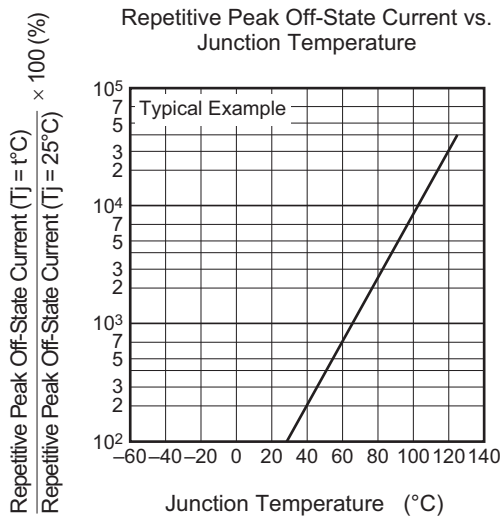
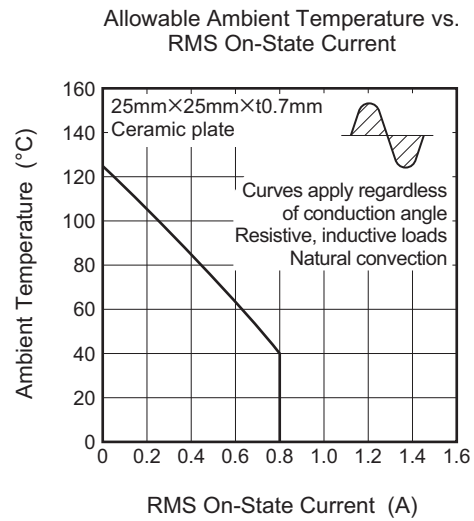
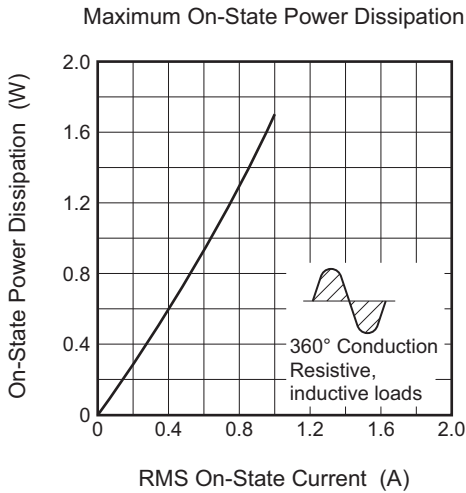
3. Soldering with ceramic plate (25 mm × 25 mm × t0.7 mm).

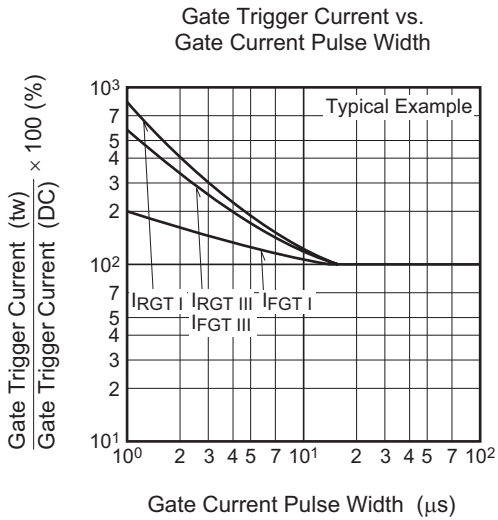
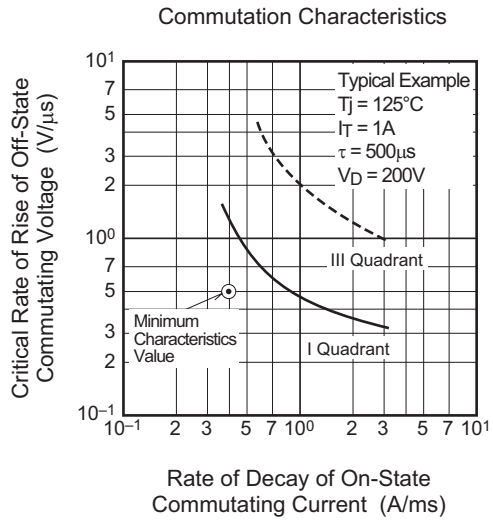
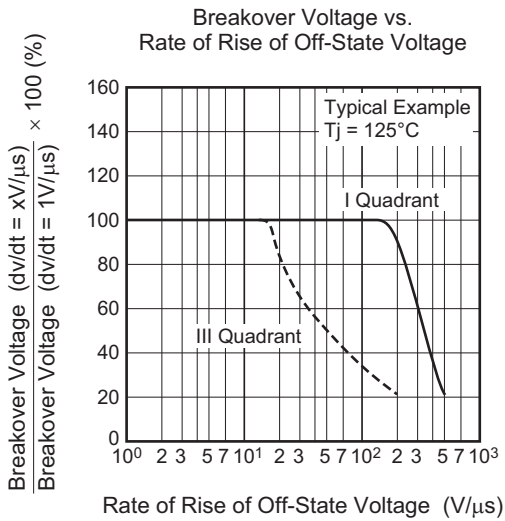
4. Test conditions of the critical-rate of rise of off-state commutating voltage is shown in the table below.

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 $V_D = 400\text{ V}$	

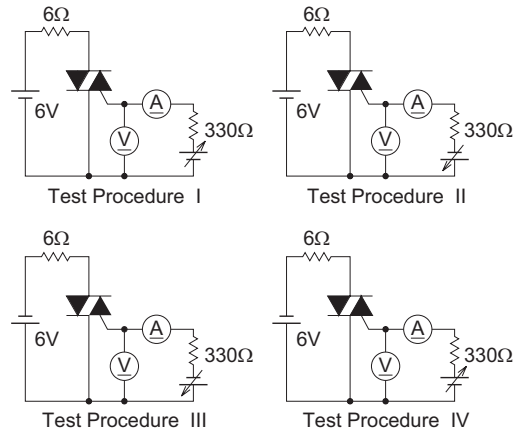
Performance Curves



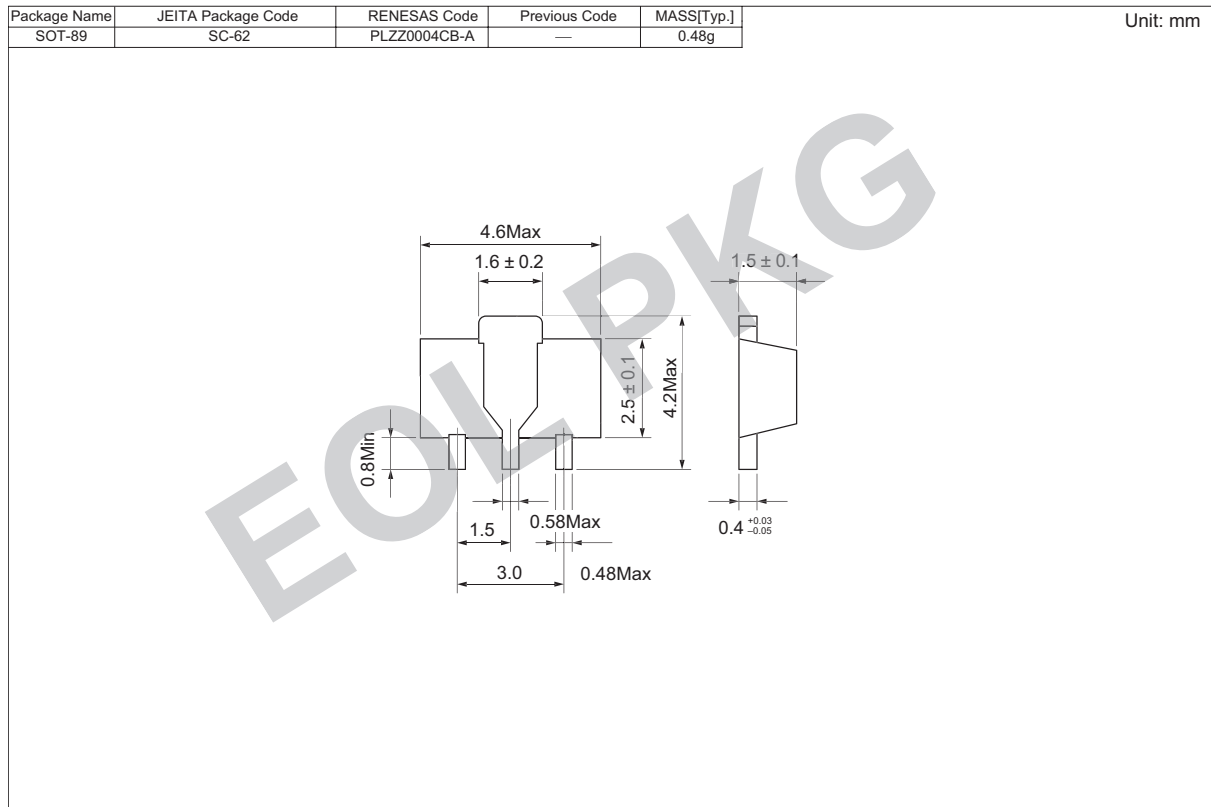
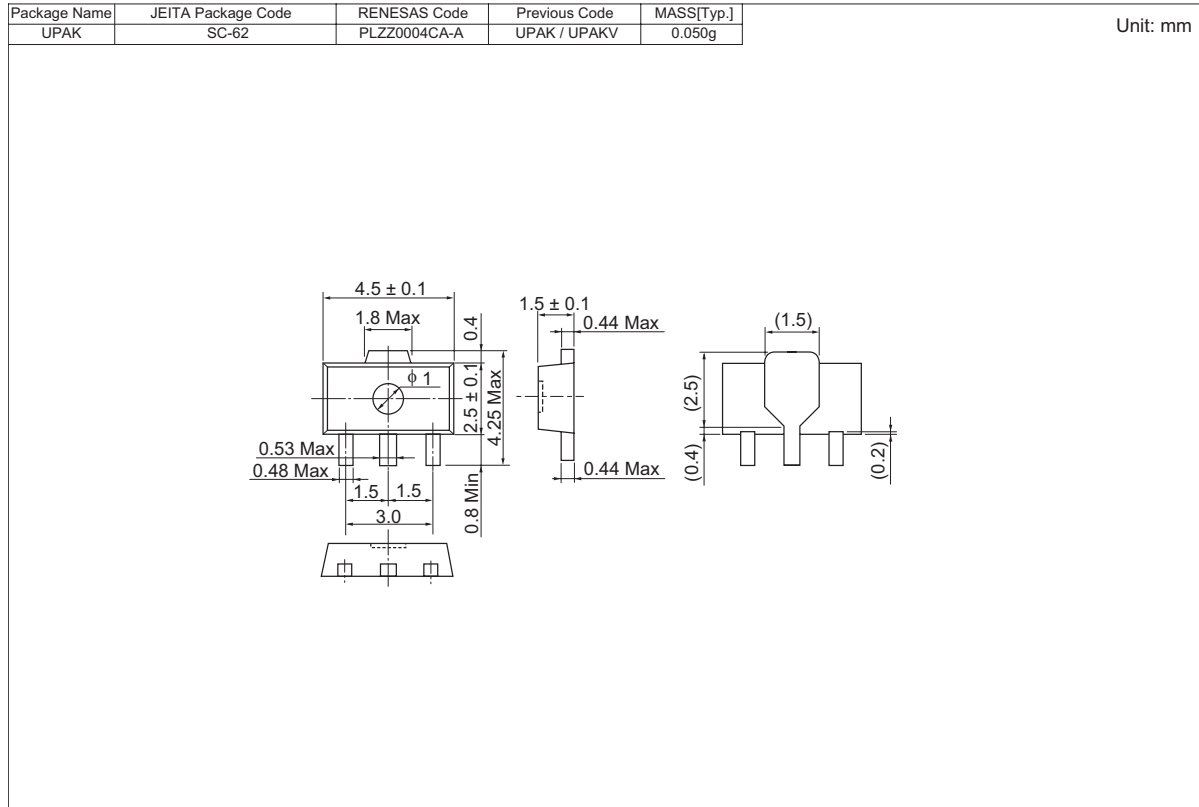




Gate Trigger Characteristics Test Circuits



## Package Dimensions



**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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