BCR08ES-14A

700V - 0.8A - Triac
Low Power Use

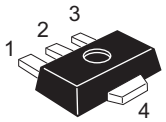
R07DS0971EJ0001
Rev.0.01
Nov 28, 2012

Features

- $I_{T\ (RMS)}$: 0.8 A
- V_{DRM} : 700 V
- I_{FGTI}, I_{RGTI}, I_{RGTIII} : 5 mA or 10mA
- □mode trigger is available (#B11, #B12)
- Non-Insulated Type
- Planar Passivation Type
- Surface Mounted Type
- Completed Pb Free

Outline

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



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

Applications

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

Maximum Ratings

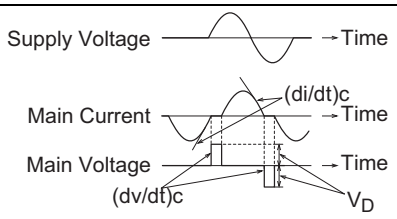
Parameter	Symbol	Voltage class	Unit
		14	
Repetitive peak off-state voltage[Note1]	V_{DRM}	700	V
Non- repetitive peak off-state voltage[Note1]	V_{DSM}	840	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\ (RMS)}$	0.8	A	Commercial frequency, sine full wave 360° conduction, Ta= 40°C[Note3]
Surge on-state current	I_{TSM}	8	A	60 Hz 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 60 Hz, 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}	6	V	
Peak gate current	I_{GM}	0.5	A	
Junction temperature	Tj	– 40 to +125	°C	
Storage temperature	Tstg	– 40 to +125	°C	
Mass	—	50	mg	Typical value

Electrical Characteristics

Parameter		Symbol	BCR08ES-14A#B10		BCR08ES-14A#B11		BCR08ES-14A#B12		Unit	Test conditions
			Min.	Max.	Min.	Max.	Min.	Max.		
Repetitive peak off-state current		I_{DRM}	—	1.0	—	1.0	—	1.0	mA	Tj = 125°C V_{DRM} applied
On-state voltage		V_{TM}	—	2.0	—	2.0	—	2.0	V	Tc = 25°C, I_{TM} =1.2 A instantaneous measurement
Gate trigger voltage[Note2]	I	V_{FGT_I}	—	2.0	—	2.0	—	2.0	V	Tj = 25°C, V_D = 6 V R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGT_I}	—	2.0	—	2.0	—	2.0	V	
	III	$V_{RGT_{III}}$	—	2.0	—	2.0	—	2.0	V	
	□	$V_{FGT_{III}}$	—	—	—	2.0	—	2.0	V	
Gate trigger current[Note2]	I	I_{FGT_I}	—	5	—	5	—	10	mA	Tj = 25°C, V_D = 6 V R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGT_I}	—	5	—	5	—	10	mA	
	III	$I_{RGT_{III}}$	—	5	—	5	—	10	mA	
	□	$I_{FGT_{III}}$	—	—	—	7	—	10	mA	
Gate non-trigger voltage		V_{GD}	0.2	—	0.2	—	0.2	—	V	Tj = 125°C V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-a)}$	—	65	—	65	—	65	°C/W	Junction to ambient[Note3]
Critical-rate of rise of off-state commutating voltage[Note4]		(dv/dt)c	0.5	—	0.5	—	0.5	—	V/μs	Tj = 125°C

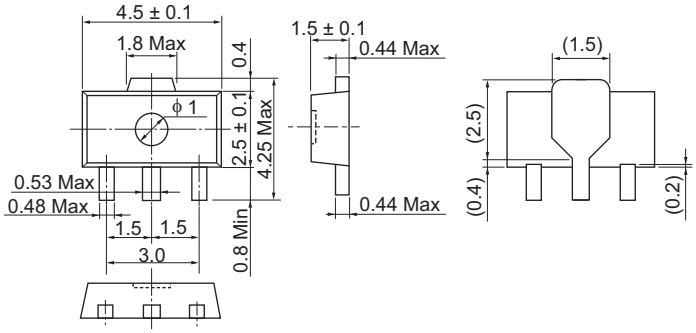
Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. Soldering with ceramic plate (25 mm × 25 mm × t0.7 mm)
4. Test conditions of the critical-rate of rise of off-state commutating voltage are shown in the table below.

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 = – 0.4 A/ms 3. Peak off-state voltage V_D = 400 V	

Package Dimensions

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

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR08ES-14AT14#B10	Embossed Tape	4000 pcs.	Taping direction “T1”
BCR08ES-14AT14#B11	Embossed Tape	4000 pcs.	Taping direction “T1”
BCR08ES-14AT14#B12	Embossed Tape	4000 pcs.	Taping direction “T1”

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