BCR1AM-12A

Triac

Low Power Use

REJ03G1248-0200
Rev.2.00
Nov 30, 2007

Features

- $I_{T\,(RMS)}$: 1 A
- V_{DRM} : 600 V
- I_{FGTI}, I_{RGTI}, $I_{RGT\,III}$: 7 mA
- Non-Insulated Type
- Planar Passivation Type

Outline

RENESAS Package code: PRSS0003EA-A
(Package name: TO-92)

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

Applications

Contactless AC switch, fan motor, rice-cooker, electric pot, air cleaner, heater, refrigerator, washing machine, electric fan, vending machine, trigger circuit for low and medium triac, and other general purpose control applications

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		12	
Repetitive peak off-state voltage[Note1]	V_{DRM}	600	V
Non-repetitive peak off-state voltage[Note1]	V_{DSM}	720	V

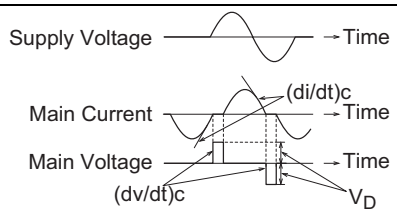
Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\ (RMS)}$	1.0	A	Commercial frequency, sine full wave 360° conduction, Tc = 56°C[Note3]
Surge on-state current	I_{TSM}	10	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.41	A^2s	Value corresponding to 1 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}	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	—	0.23	g	Typical value

Notes: 1. Gate open.

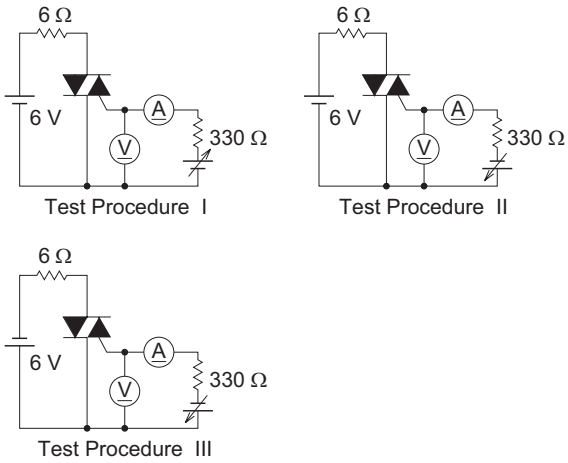
Electrical Characteristics

Parameter		Symbol	Rated value			Unit	Test conditions
			Min.	Typ.	Max.		
Repetitive peak off-state current		I_{DRM}	—	—	0.5	mA	Tj = 125°C, V_{DRM} applied
On-state voltage		V_{TM}	—	—	1.6	V	Tc = 25°C, I_{TM} = 1.5 A, Instantaneous measurement
Gate trigger voltage[Note2]	I	V_{FGTI}	—	—	2.0	V	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGTI}	—	—	2.0	V	
	III	V_{RGTIII}	—	—	2.0	V	
Gate trigger current[Note2]	I	I_{FGTI}	—	—	7	mA	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGTI}	—	—	7	mA	
	III	I_{RGTIII}	—	—	7	mA	
Gate non-trigger voltage		V_{GD}	0.1	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-c)}$	—	—	50	°C/W	Junction to case[Note3]
Critical-rate of rise of off-state commutating voltage[Note4]		(dv/dt)c	2	—	—	V/µs	Tj = 125°C

Notes: 2. Measurement using the gate trigger characteristics measurement circuit.
3. Case temperature is measured at the T_2 terminal 1.5 mm away from the molded case.
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 = – 0.5 A/ms 3. Peak off-state voltage V_D = 400 V	

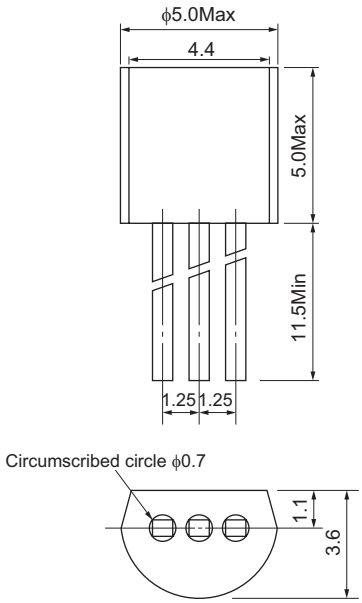
Gate Trigger Characteristics Test Circuits



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-92*	SC-43A	PRSS0003EA-A	—	0.23g

Unit: mm



Order Code

Lead form	Standard packing	Quantity	Standard order code	Standard order code example
Straight type	Vinyl sack	500	Type name	BCR1AM-12A
Lead form	Vinyl sack	500	Type name – Lead forming code	BCR1AM-12A-A6
Form A8	Taping	2000	Type name – TB	BCR1AM-12A-TB

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

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