

BCR3FM-12RB

600V - 3A - Triac
Medium Power Use

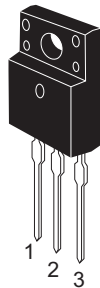
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Features

- $I_{T(RMS)}$: 3 A
- V_{DRM} : 600 V
- T_j : 150 °C
- I_{FGTB} , I_{RGTB} , I_{RGTIII} : 15 mA (10 mA) ^{Note4}
- Insulated Type
- Planar Passivation Type
- Viso: 2000 V

Outline

RENESAS Package code: PRSS0003AG-A
(Package name: TO-220FP)



1. T₁ Terminal
2. T₂ Terminal
3. Gate Terminal

Applications

Electric rice cooker, electric pot, and controller for other heater

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	$I_{T(RMS)}$	3	A	Commercial frequency, sine full wave 360° conduction, $T_c = \begin{cases} 136^\circ\text{C} (\#BB0, \text{ See Ordering Info.}) \\ 130^\circ\text{C} (\#FA0, \text{ See Ordering Info.}) \end{cases}$
Surge on-state current	I_{TSM}	30	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	3.7	A^2s	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P_{GM}	3	W	
Average gate power dissipation	$P_{G(AV)}$	0.3	W	
Peak gate voltage	V_{GM}	6	V	
Peak gate current	I_{GM}	0.5	A	
Junction Temperature	T_j	-40 to +150	°C	
Storage temperature	T_{stg}	-40 to +150	°C	
Mass	—	1.9	g	Typical value
Isolation voltage ^{Note5}	Viso	2000	V	$T_a = 25^\circ\text{C}$, AC 1 minute $T_1 \bullet T_2 \bullet G$ terminal to case

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	2.0	mA	$T_j = 150^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.5	V	$T_c = 25^\circ\text{C}$, $I_{TM} = 4.5$ A, instantaneous measurement
Gate trigger voltage ^{Note2}	I	V_{FGTI}	—	—	1.5	$T_j = 25^\circ\text{C}$, $V_D = 6$ V, $R_L = 6 \Omega$, $R_G = 330 \Omega$
	II	V_{RGTI}	—	—	1.5	
	III	V_{RGTIII}	—	—	1.5	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	15 ^{Note4}	$T_j = 25^\circ\text{C}$, $V_D = 6$ V, $R_L = 6 \Omega$, $R_G = 330 \Omega$
	II	I_{RGTI}	—	—	15 ^{Note4}	
	III	I_{RGTIII}	—	—	15 ^{Note4}	
Gate non-trigger voltage	V_{GD}	0.2	—	—	V	$T_j = 125^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
		0.1	—	—	V	$T_j = 150^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-c)}$	—	—	4.0	°C/W	Junction to case ^{Note3} #BB0 (See Ordering Info.)
		—	—	5.2	°C/W	Junction to case ^{Note3} #FA0 (See Ordering Info.)

- Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. The contact thermal resistance $R_{th(c-f)}$ in case of greasing is 0.5°C/W .
4. High sensitivity ($I_{GT} \leq 10$ mA) is also available (I_{GT} item: 1).
5. Make sure that your finished product containing this device meets your safe isolation requirements.
For safety, it's advisable that heatsink is electrically floating.

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