BCR3FM-12LB

600V - 3A - Triac
Medium Power Use

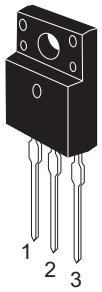
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Features

- $I_{T\ (RMS)}$: 3 A
- V_{DRM} : 600 V
- Tj: 150°C
- I_{FGTI}, I_{RGTI}, I_{RGTIII}: 20 mA (10 mA) Note5
- Insulated Type
- Planar Passivation Type
- Viso: 2000 V

Outline

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





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

Applications

Switching mode power supply, small motor control, heater control, solenoid driver, and other general purpose control applications

Maximum Ratings

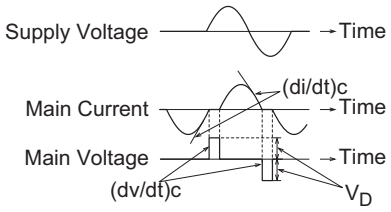
Parameter	Symbol	Voltage class	Unit
		12	
Repetitive peak off-state voltage Note1	V_{DRM}	600	V
Non-repetitive peak off-state voltage Note1	V_{DSM}	720	V

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\ (RMS)}$	3	A	Commercial frequency, sine full wave 360° conduction, Tc = 134°C
Surge on-state current	I_{TSM}	30	A	60Hz 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 60 Hz, 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	Tj	–40 to +150	°C	
Storage temperature	Tstg	–40 to +150	°C	
Mass	—	1.9	g	Typical value
Isolation voltage Note6	Viso	2000	V	Ta = 25°C, AC 1 minute T_1 • T_2 • G terminal to case

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current		I_{DRM}	—	—	2.0	mA	Tj = 150°C, V_{DRM} applied
On-state voltage		V_{TM}	—	—	1.5	V	Tc = 25°C, I_{TM} = 4.5 A, instantaneous measurement
Gate trigger voltage Note2	I	V_{FGTI}	—	—	1.5	V	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGTI}	—	—	1.5	V	
	III	V_{RGTIII}	—	—	1.5	V	
Gate trigger curent Note2	I	I_{FGTI}	—	—	20 Note5	mA	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGTI}	—	—	20 Note5	mA	
	III	I_{RGTIII}	—	—	20 Note5	mA	
Gate non-trigger voltage		V_{GD}	0.2	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM}
			0.1	—	—	V	Tj = 150°C, V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-c)}$	—	—	4.0	°C/W	Junction to case Note3
Critical-rate of rise of off-state commutation voltage Note4		(dv/dt)c	5	—	—	V/μs	Tj = 125°C
			1	—	—	V/μs	Tj = 150°C

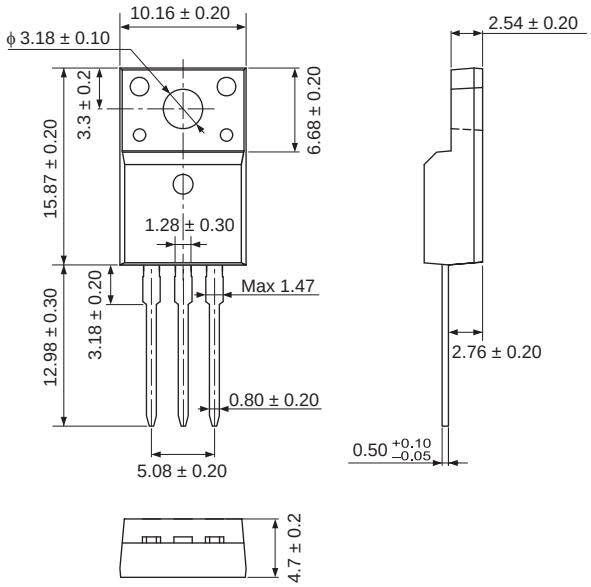
Notes: 1. Gate open.
2. Measurement using the gate trigger characteristics measurement circuit.
3. The contact thermal resistance $R_{th\ (c-f)}$ in case of greasing is 0.5°C/W.
4. Test conditions of the critical-rate of rise of off-state commutation voltage is shown in the table below.
5. High sensitivity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

Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature Tj = 125/150°C 2. Rate of decay of on-state commutating current (di/dt)c = –1.5A/ms 3. Peak off-state voltage V_D = 400 V	

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-220FP	—	PRSS0003AG-A	—	1.9g

Unit: mm



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR3FM-12LB#BB0	Tube	50 pcs.	Straight type
BCR3FM-12LB-A8#BB0	Tube	50 pcs.	A8 Lead form

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

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