

BCR2PM-14LE

800V – 2A - Triac

R07DS0233EJ0200

Low Power Use

Rev.2.00

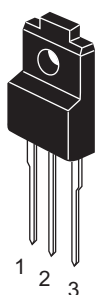
Dec 24, 2014

Features

- $I_{T(RMS)}$: 2 A
- V_{DRM} : 800 V ($T_j = 125^\circ\text{C}$)
- $I_{FGT I}$, $I_{RGT I}$, $I_{RGT III}$: 10 mA
- Planar Passivation Type
- The product guaranteed maximum junction temperature 150°C .

Outline

RENESAS Package code: PRSS0003AA-B
(Package name: TO-220F(2))



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

Applications

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

Precautions on Usage

When the BCR2PM-14LE is used, do not attach the heat radiating fin.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit	Condition
		14		
Repetitive peak off-state voltage ^{Note1}	V_{DRM}	800	V	$T_j = 125^\circ\text{C}$
		700	V	$T_j = 150^\circ\text{C}$
Non-repetitive peak off-state voltage ^{Note1}	V_{DSM}	840	V	

Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T(RMS)}$	2	A	Commercial frequency, sine full wave 360° conduction
Surge on-state current	I_{TSM}	10	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	0.41	A ² s	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}	1	A	
Junction temperature	T_j	- 40 to +150	°C	
Storage temperature	T_{stg}	- 40 to +150	°C	
Mass	—	2.0	g	Typical value

Notes: 1. Gate open.

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	1.0	mA	$T_j = 150^\circ\text{C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	2.1	V	$T_j = 25^\circ\text{C}$, $I_{TM} = 3\text{ A}$, Instantaneous measurement
Gate trigger voltage ^{Note2}	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	
Gate trigger current ^{Note2}	I	I_{FGTI}	—	—	10	$T_j = 25^\circ\text{C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	II	I_{RGTI}	—	—	10	
	III	I_{RGTIII}	—	—	10	
Gate non-trigger voltage	V_{GD}	0.1	—	—	V	$T_j = 150^\circ\text{C}$, $V_D = 1/2 V_{DRM}$
Thermal resistance	$R_{th(j-a)}$	—	—	45	°C/W	Junction to ambient, Natural convection
Critical-rate of rise of off-state commutation voltage ^{Note3}	$(dv/dt)_c$	0.5	—	—	V/ μs	$T_j = 125^\circ\text{C}$

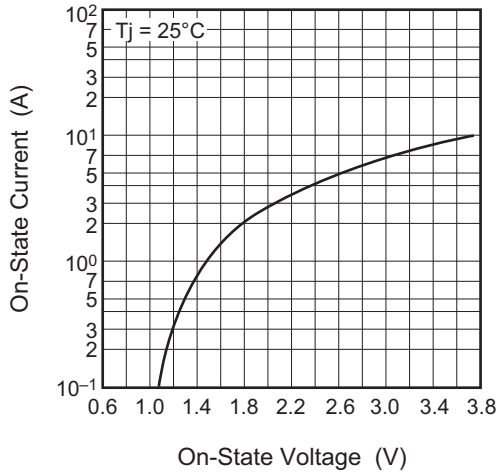
Notes: 2. Measurement using the gate trigger characteristics measurement circuit.

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

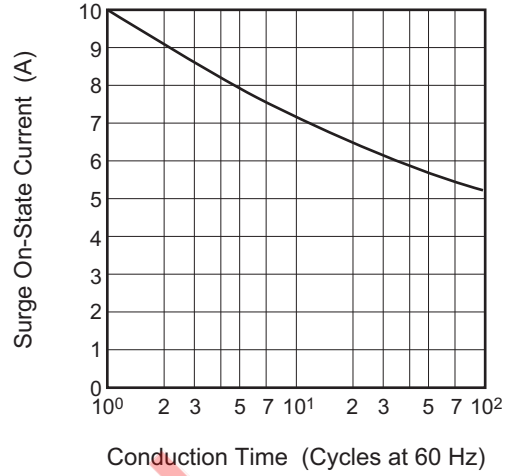
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature $T_j = 125^\circ\text{C}$ 2. Rate of decay of on-state commutating current $(di/dt)_c = -1.0\text{ A/ms}$ 3. Peak off-state voltage $V_D = 400\text{ V}$	

Performance Curves

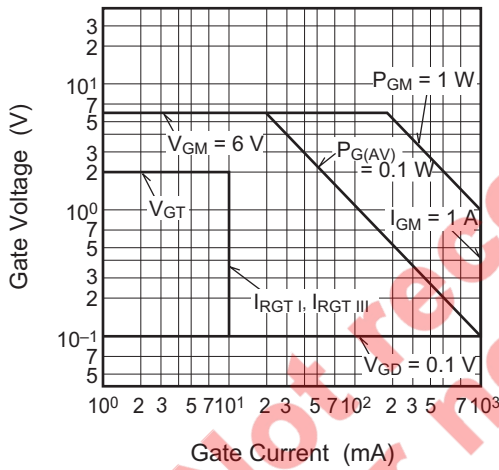
Maximum On-State Characteristics



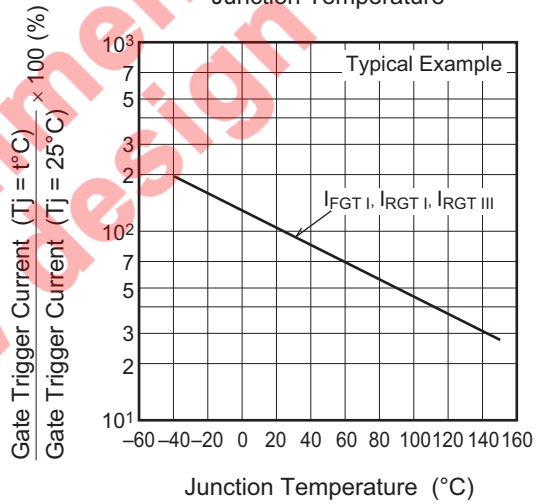
Rated Surge On-State Current



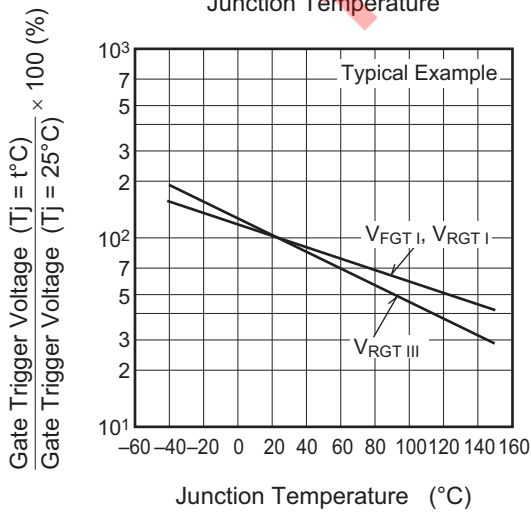
Gate Characteristics (II and III)



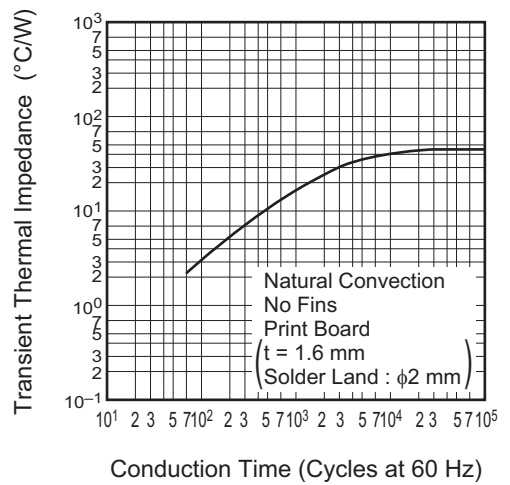
Gate Trigger Current vs. Junction Temperature



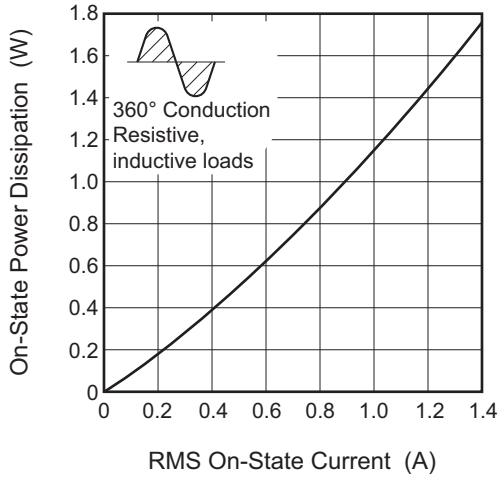
Gate Trigger Voltage vs. Junction Temperature



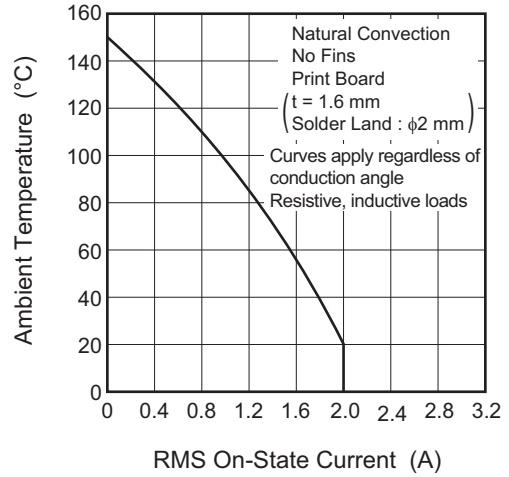
Maximum Transient Thermal Impedance Characteristics (Junction to ambient)



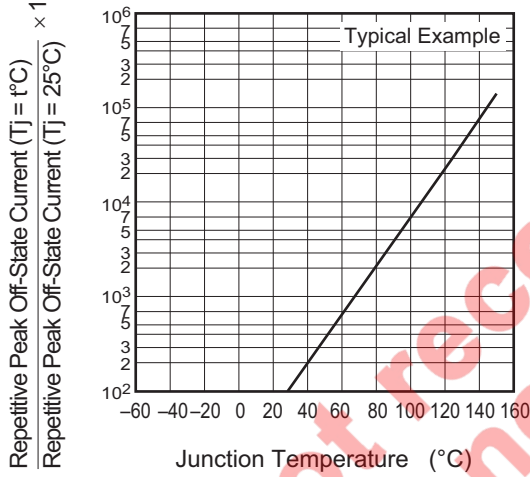
Maximum On-State Power Dissipation



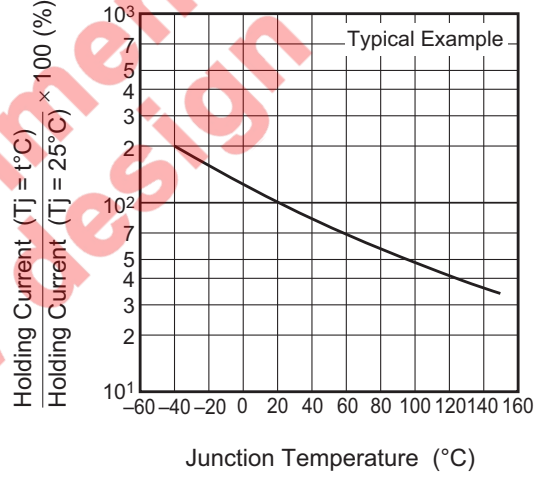
Allowable Ambient Temperature vs. RMS On-State Current



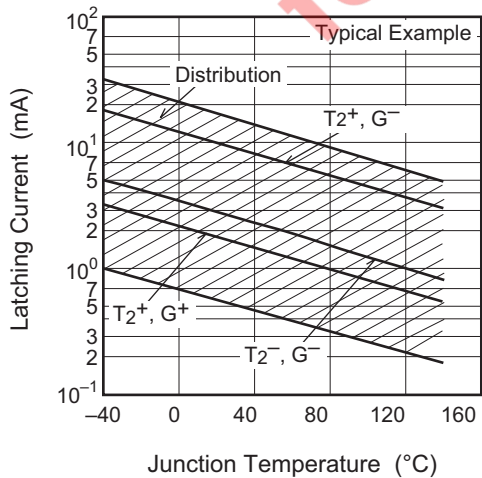
Repetitive Peak Off-State Current vs. Junction Temperature



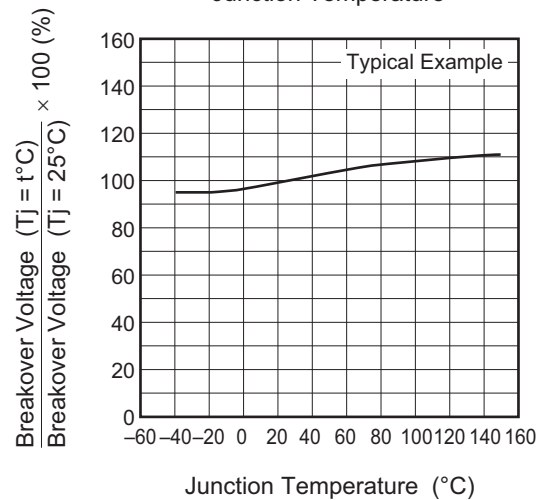
Holding Current vs. Junction Temperature



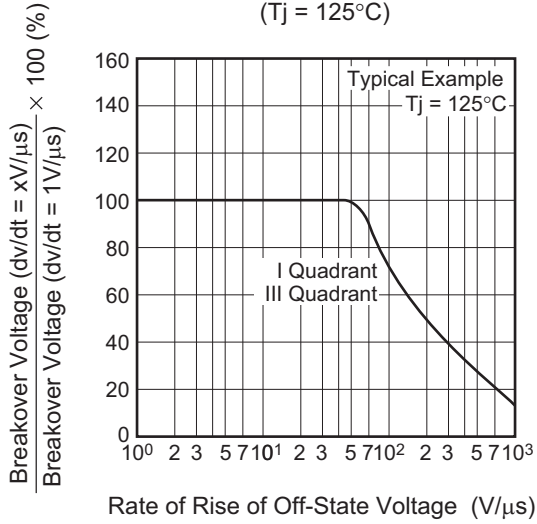
Latching Current vs. Junction Temperature



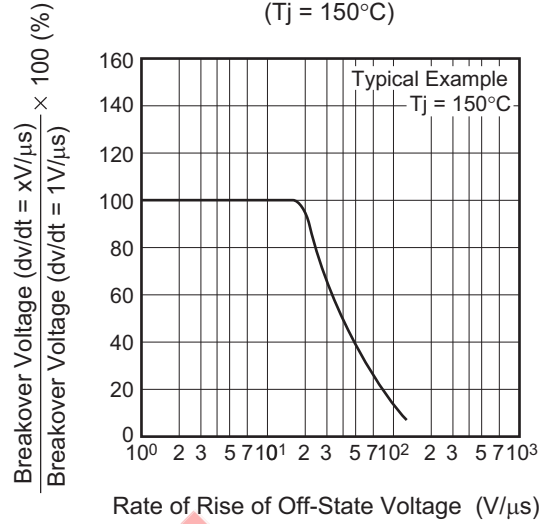
Breakover Voltage vs. Junction Temperature



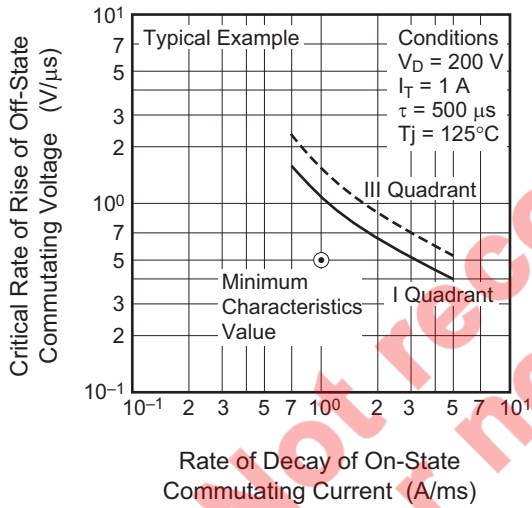
Breakover Voltage vs. Rate of Rise of Off-State Voltage
(Tj = 125°C)



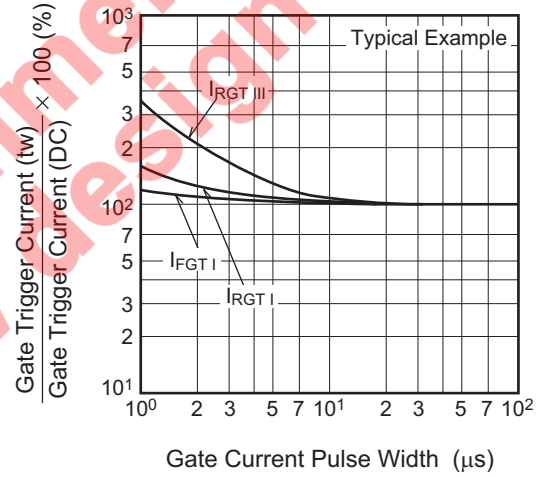
Breakover Voltage vs. Rate of Rise of Off-State Voltage
(Tj = 150°C)



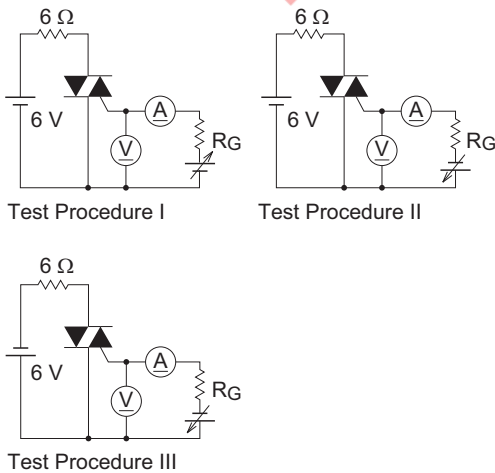
Commutation Characteristics



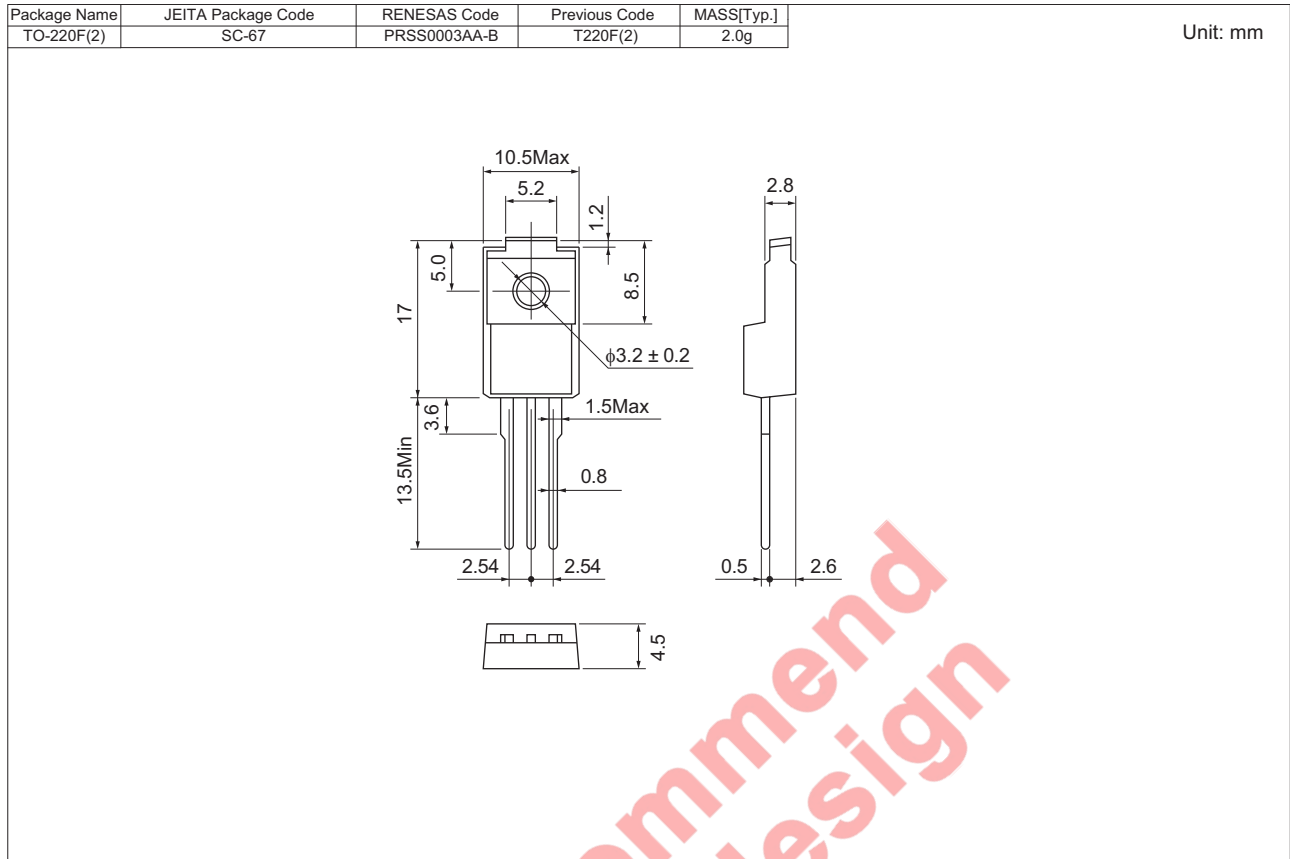
Gate Trigger Current vs. Gate Current Pulse Width



Gate Trigger Characteristics Test Circuits



Package Dimensions



Ordering Information

Orderable Part Number	Packing	Quantity	Remark
BCR2PM-14LE#B00	Bag	100 pcs.	Straight type
BCR2PM-14LE-AS#B00	Tube	50 pcs.	AS Lead form

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

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