BCR8FM-16LB

800V - 8A - Triac

Medium Power Use

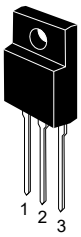
R07DS1325EJ0200
Rev.2.00
Apr 1, 2017

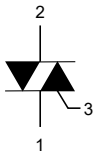
Features

- $I_{T\,(RMS)}$: 8 A
- V_{DRM} : 800 V
- I_{FGTI}, I_{RGTI}, $I_{RGT\,III}$: 30 mA
- Viso : 2000 V
- The product guaranteed maximum junction temperature 150°C
- Insulated Type
- Planar Type

Outline

RENESAS Package code: PRSS0003AP-A
(Package name: TO-220FPA)





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

Applications

Washing machine, Power supply, Solid state relay, and other general purpose AC control applications.

Maximum Ratings

Parameter	Symbol	Voltage class	Unit
		16	
Repetitive peak off-state voltage[Note1]	V_{DRM}	800	V
Non-repetitive peak off-state voltage[Note1]	V_{DSM}	960	V

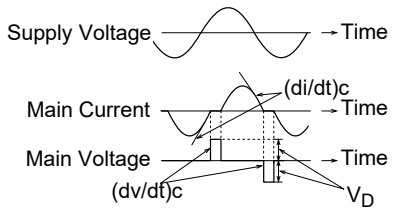
Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_{T\,(RMS)}$	8	A	Commercial frequency, sine full wave 360° conduction, Tc = 107°C
Surge on-state current	I_{TSM}	80	A	60Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusing	I^2t	26	A^2s	Value corresponding to 1 cycle of half wave 60Hz, surge on-state current
Peak gate power dissipation	P_{GM}	5	W	
Average gate power dissipation	$P_{G\,(AV)}$	0.5	W	
Peak gate voltage	V_{GM}	10	V	
Peak gate current	I_{GM}	2	A	
Junction temperature	Tj	– 40 to +150	°C	
Storage temperature	Tstg	– 40 to +150	°C	
Mass	—	1.65	g	Typical value
Isolation voltage	Viso	2000	V	Ta = 25°C, AC 1 minute, T_1 • T_2 • G terminal to case

Notes: 1. Gate open.

Electrical Characteristics

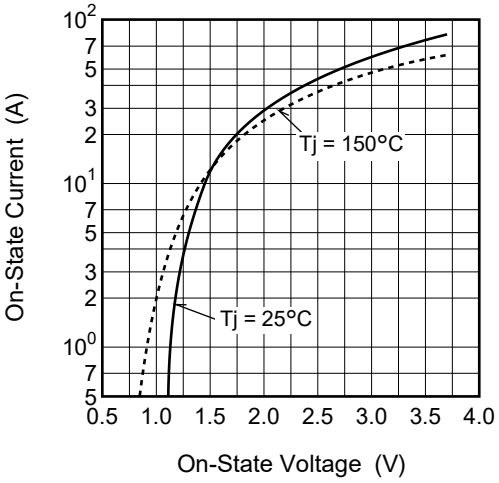
Parameter		Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current		I_{DRM}	—	—	2.0	mA	Tj = 150°C, V_{DRM} applied
On-state voltage		V_{TM}	—	—	1.6	V	Tc = 25°C, I_{TM} = 12 A, Instantaneous measurement
Gate trigger voltage[Note2]	I	V_{FGTI}	—	—	1.5	V	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	V_{RGTI}	—	—	1.5	V	
	III	V_{RGTIII}	—	—	1.5	V	
Gate trigger current[Note2]	I	I_{FGTI}	—	—	30	mA	Tj = 25°C, V_D = 6 V, R_L = 6 Ω, R_G = 330 Ω
	II	I_{RGTI}	—	—	30	mA	
	III	I_{RGTIII}	—	—	30	mA	
Gate non-trigger voltage		V_{GD}	0.2	—	—	V	Tj = 125°C, V_D = 1/2 V_{DRM}
			0.1	—	—		Tj = 150°C, V_D = 1/2 V_{DRM}
Thermal resistance		$R_{th\ (j-c)}$	—	—	4.3	°C/W	Junction to case[Note3]
Critical-rate of rise of off-state commutating voltage[Note4]		(dv/dt)c	10	—	—	V/μs	Tj = 125°C
			1	—	—		Tj = 150°C

Notes: 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 commutating voltage is shown in the table below.

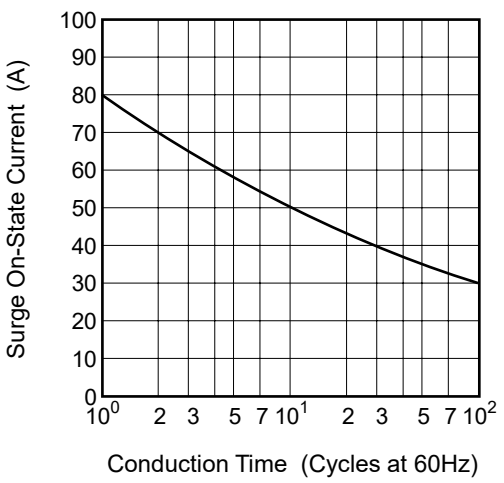
Test conditions	Commutating voltage and current waveforms (inductive load)
1. Junction temperature Tj = 125°C/150°C 2. Rate of decay of on-state commutating current (di/dt)c = – 4.0 A/ms 3. Peak off-state voltage V_D = 400 V	

Performance Curves

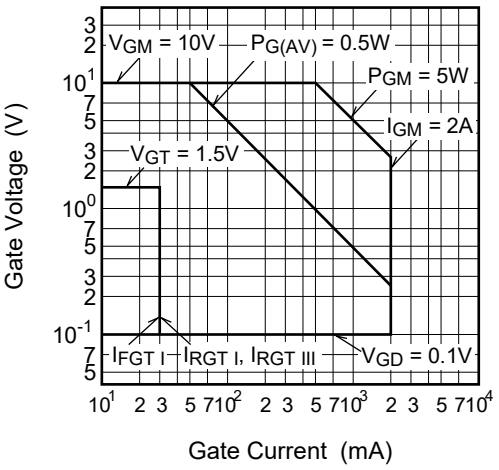
Maximum On-State Characteristics



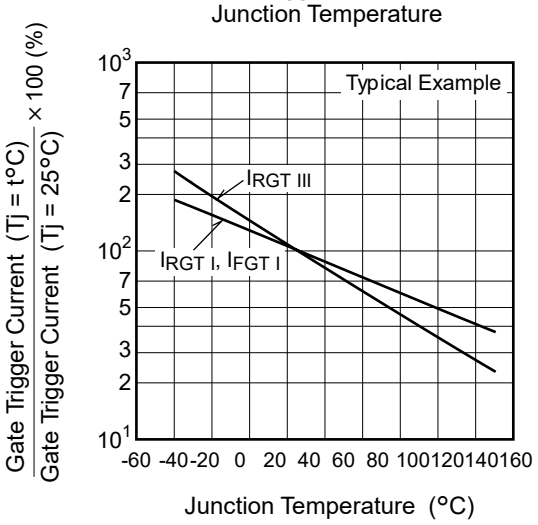
Rated Surge On-State Current



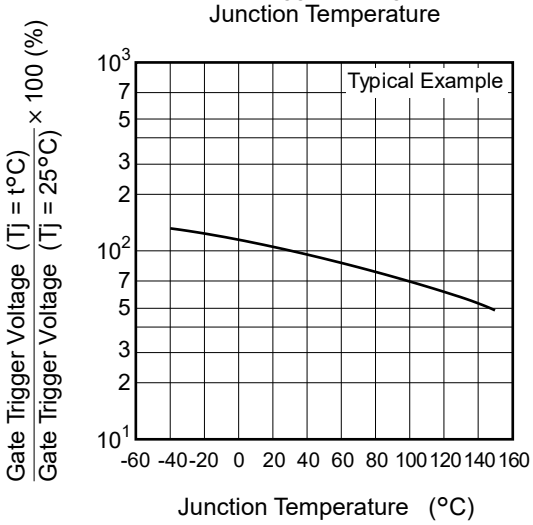
Gate Characteristics (I, II and III)



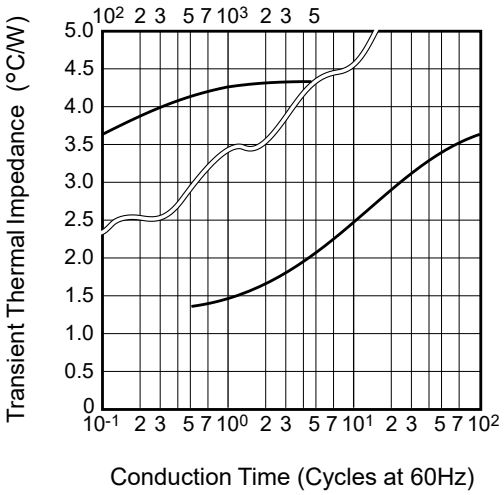
Gate Trigger Current vs. Junction Temperature



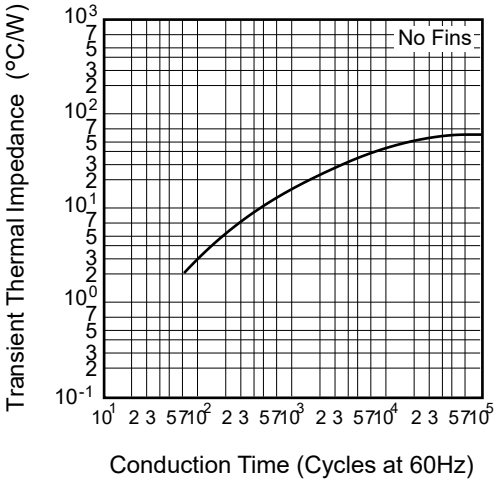
Gate Trigger Voltage vs. Junction Temperature



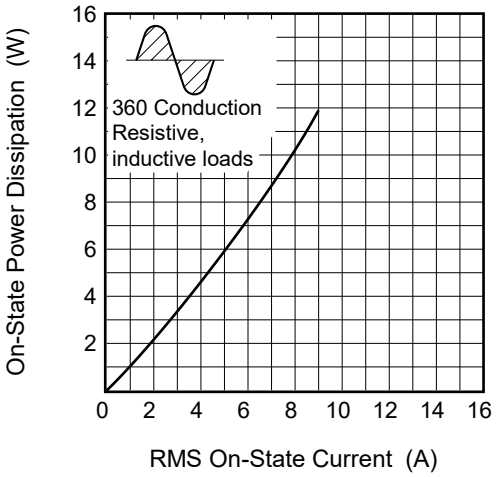
Maximum Transient Thermal Impedance Characteristics (Junction to case)



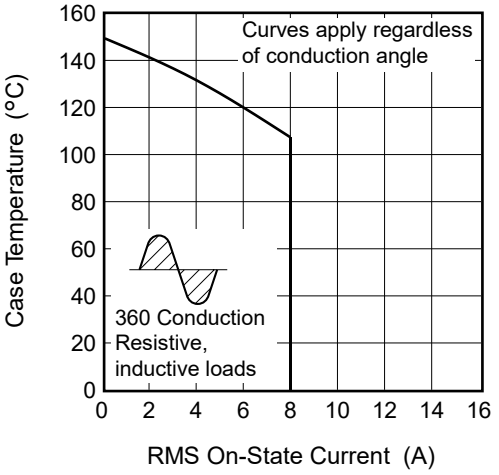
Maximum Transient Thermal Impedance Characteristics (Junction to ambient)



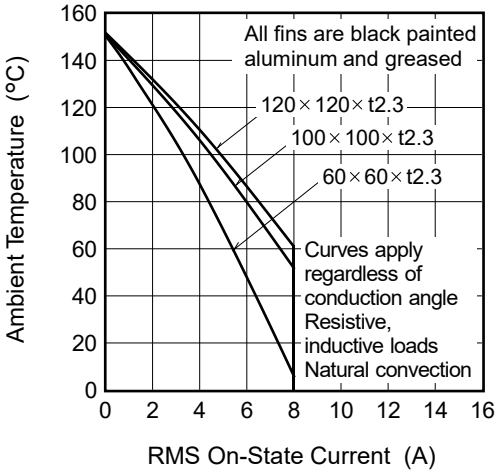
Maximum On-State Power Dissipation



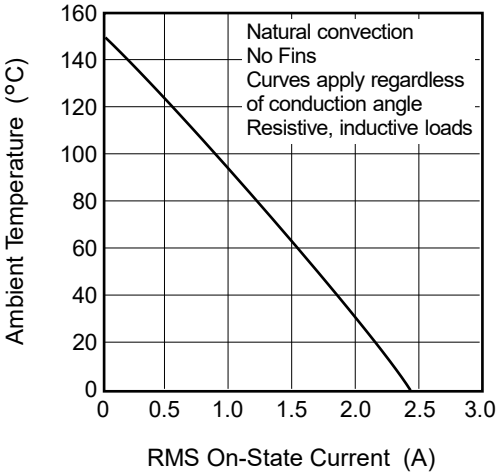
Allowable Case Temperature vs. RMS On-State Current



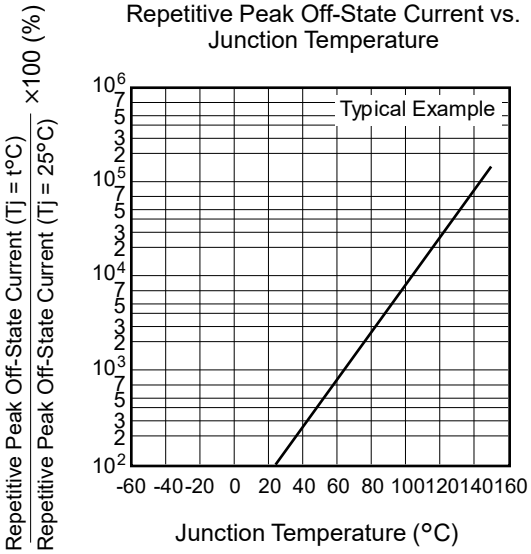
Allowable Ambient Temperature vs. RMS On-State Current



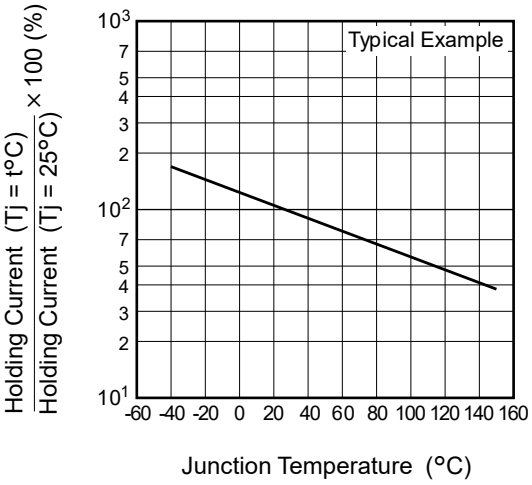
Allowable Ambient Temperature vs. RMS On-State Current



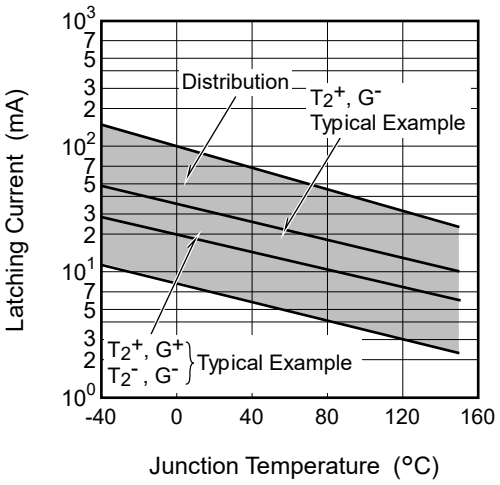
Repetitive Peak Off-State Current vs. Junction Temperature



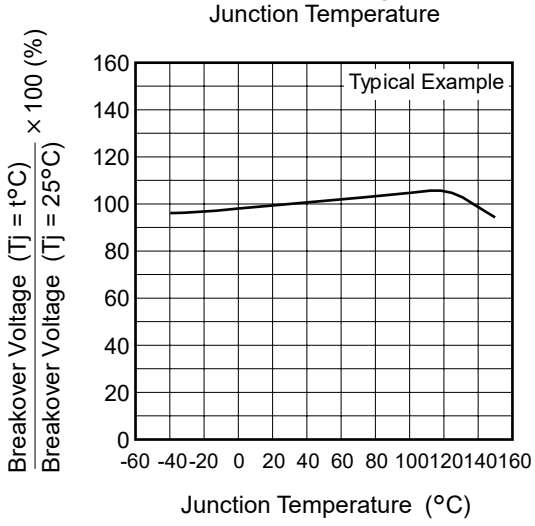
Holding Current vs.
Junction Temperature



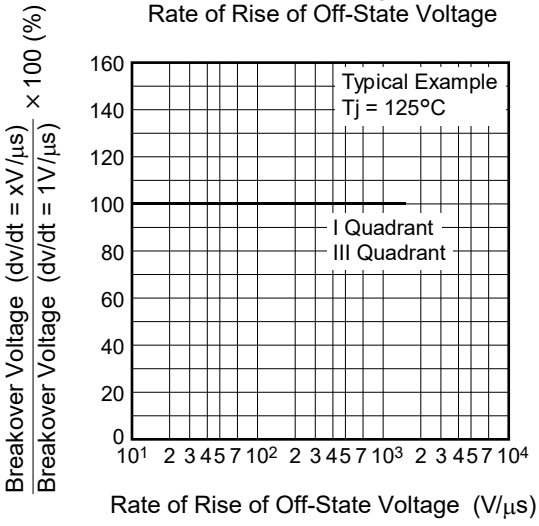
Latching Current vs.
Junction Temperature



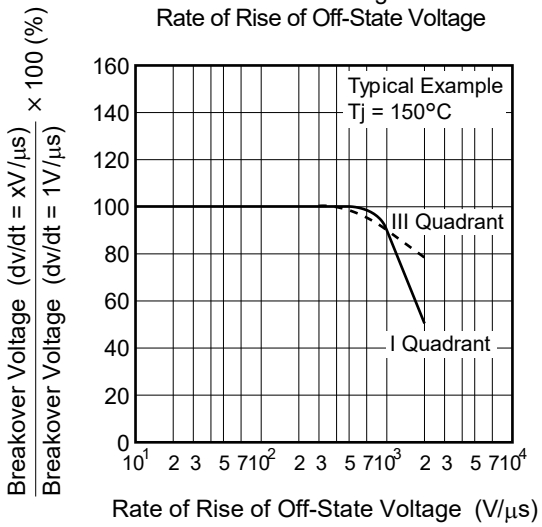
Breakover Voltage vs.
Junction Temperature



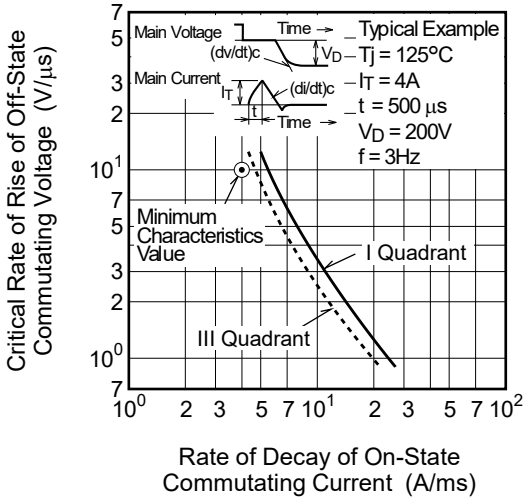
Breakover Voltage vs.
Rate of Rise of Off-State Voltage



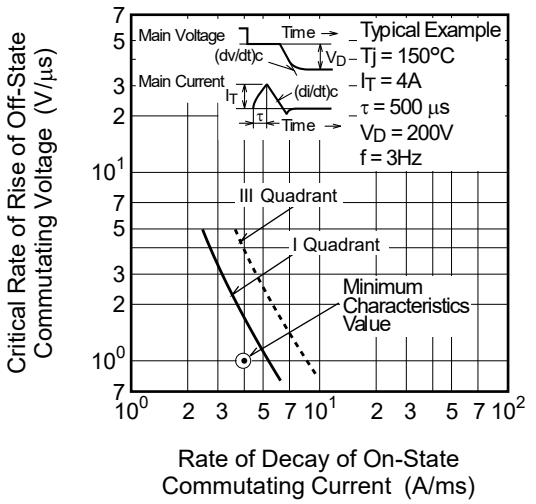
Breakover Voltage vs.
Rate of Rise of Off-State Voltage



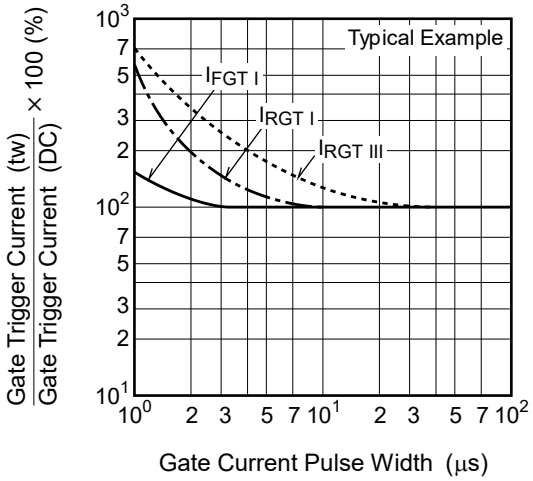
Commutation Characteristics (Tj = 125°C)



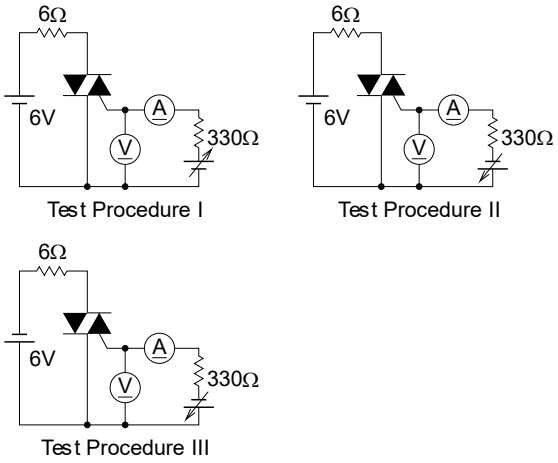
Commutation Characteristics (Tj = 150°C)



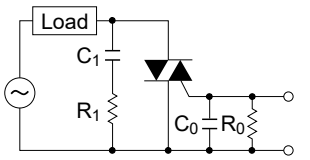
Gate Trigger Current vs. Gate Current Pulse Width



Gate Trigger Characteristics Test Circuits



Recommended peripheral components for Triac

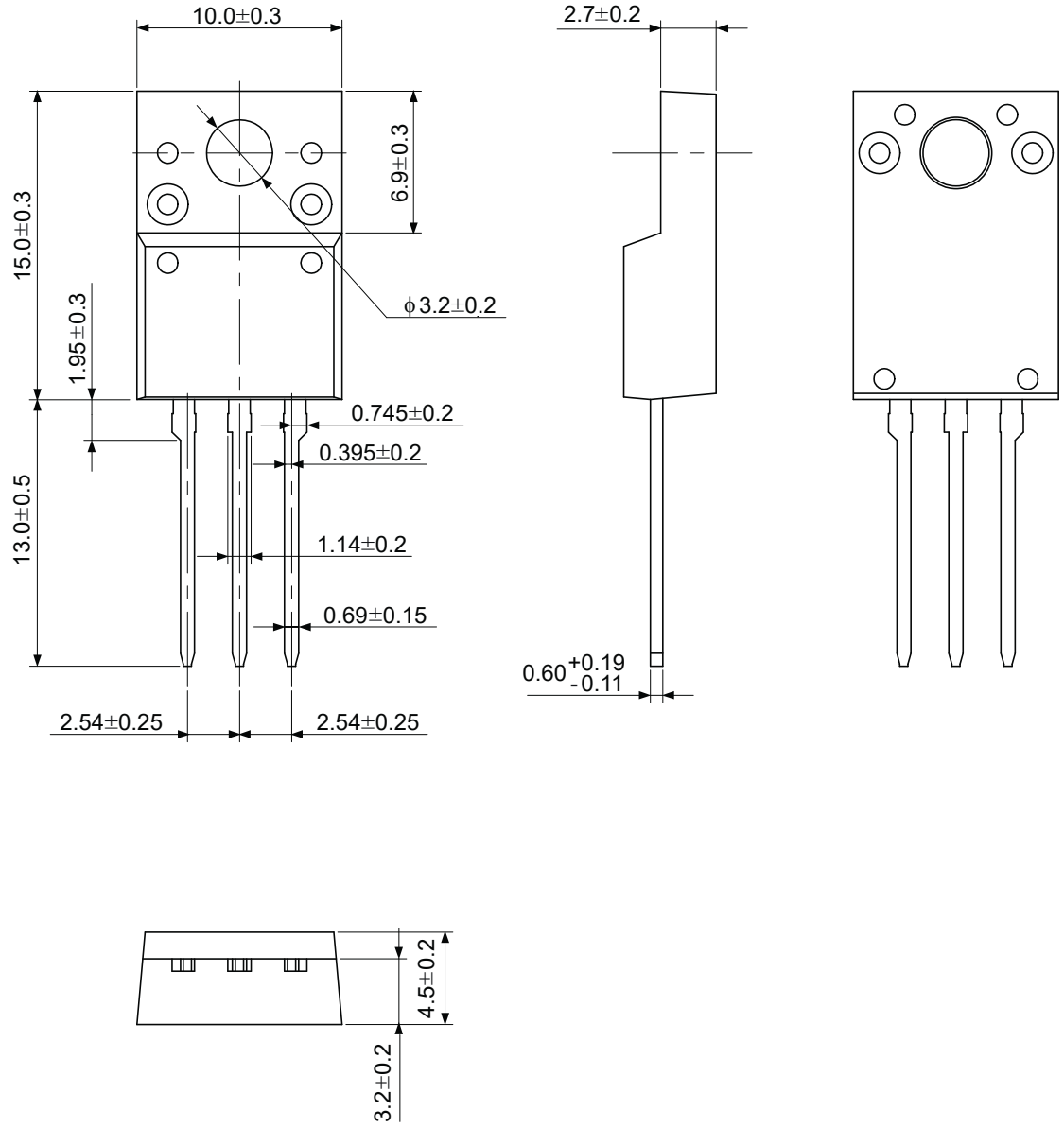


C_1 = 0.1 to 0.47 μF C_0 = 0.1 μF
R_1 = 47 to 100Ω R_0 = 100Ω

Package Dimensions

JEITA Package Code	RENESAS Code	Previous Code	MASS (Typ) [g]
-	PRSS0003AP-A	TO-220FPA	1.65

Unit: mm



Ordering Information

Orderable Part Number	Packing Note	Quantity	Remark
BCR8FM-16LB#BG0	Tube	50 pcs.	Straight type
BCR8FM-16LB-□□#BG0	Tube	50 pcs.	□□:Lead forming type

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

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(Rev.3.0-1 November 2016)

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