

BCR20FM-14LJ

700V - 20A - Triac

Medium Power Use

R07DS0981EJ0300

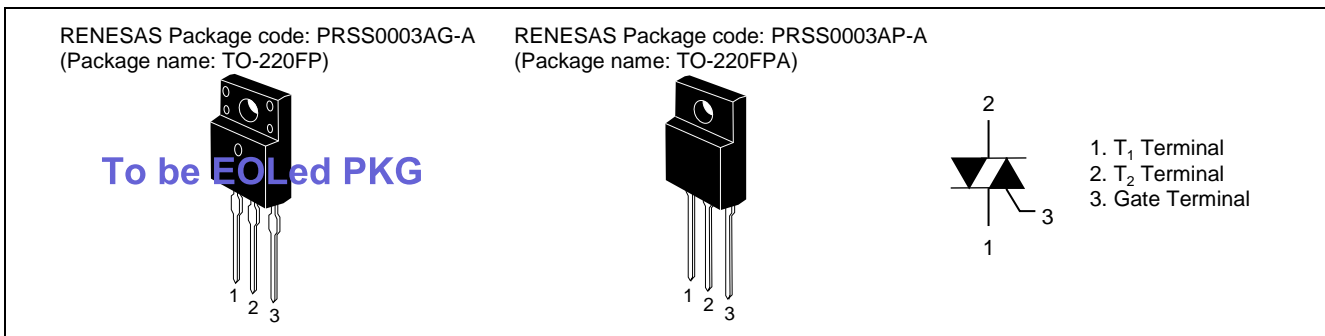
Rev.3.00

May 31, 2018

Features

- $I_T (RMS)$: 20 A
- V_{DRM} : 800 V ($T_j=125$ C)
- T_j : 150°C
- I_{FGTI} , I_{RGTI} , I_{RGTIII} : 30 mA
- Insulated Type
- Planar Passivation Type
- Viso: 2000V

Outline



Application

Power supply, motor control, heater control, solid state relay, and other general purpose AC control applications.

Maximum Ratings

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

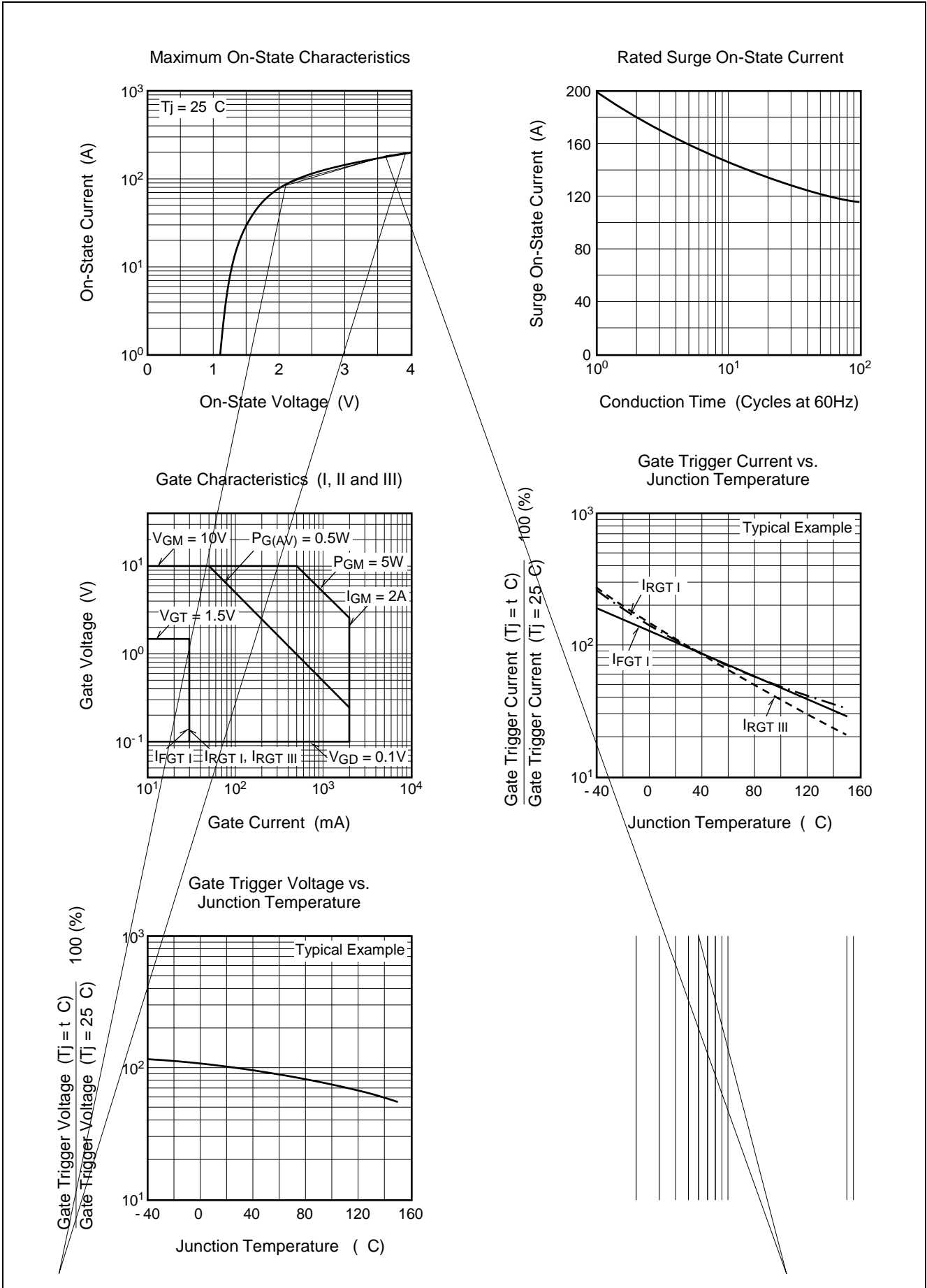
Parameter	Symbol	Ratings	Unit	Conditions
RMS on-state current	$I_T (RMS)$	20	A	Commercial frequency, sine full wave 360 conduction, $T_c = 86$ C (#BB0, #BH0) ^{Note2} $T_c = 80$ C (#BG0) ^{Note2}
Surge on-state current	I_{TSM}	200	A	60 Hz sinewave 1 full cycle, peak value, non-repetitive
I^2t for fusion	I^2t	167	A ² s	Value corresponding to 1 cycle of half wave 60 Hz, 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	T_j	-40 to +150	C	
Storage temperature	T_{stg}	-40 to +150	C	
Isolation voltage ^{Note6}	V_{iso}	2000	V	$T_a=25$ C, AC 1 minute, $T_1 \cdot T_2 \cdot G$ terminal to case

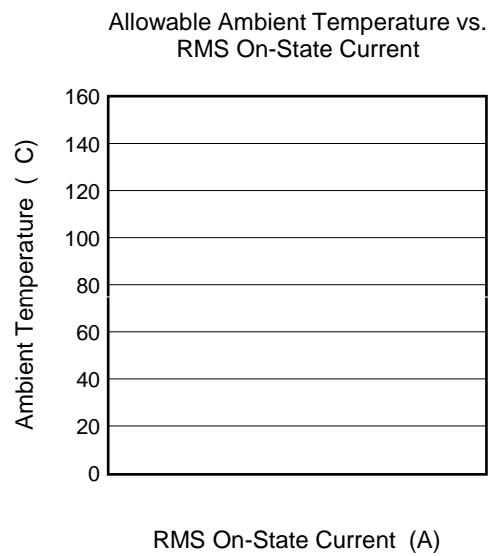
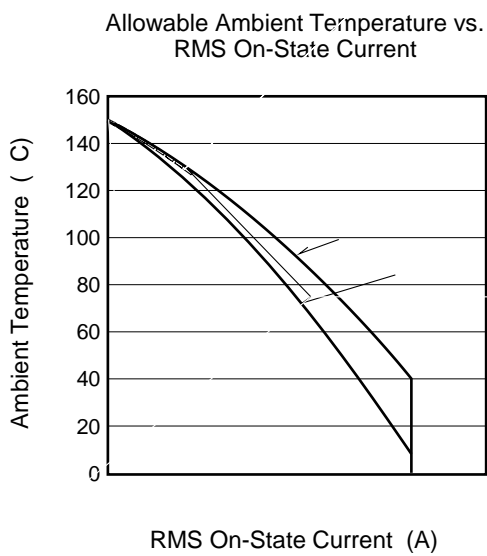
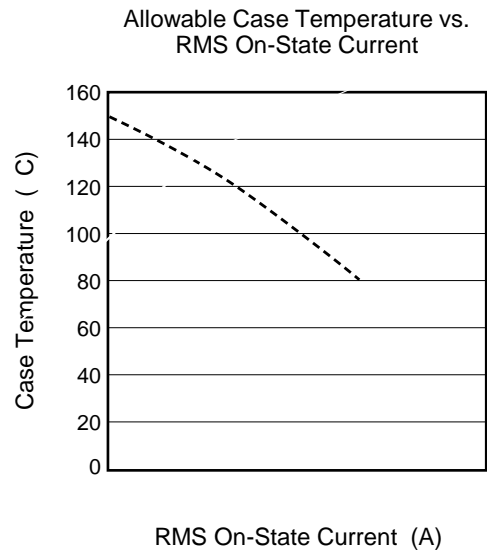
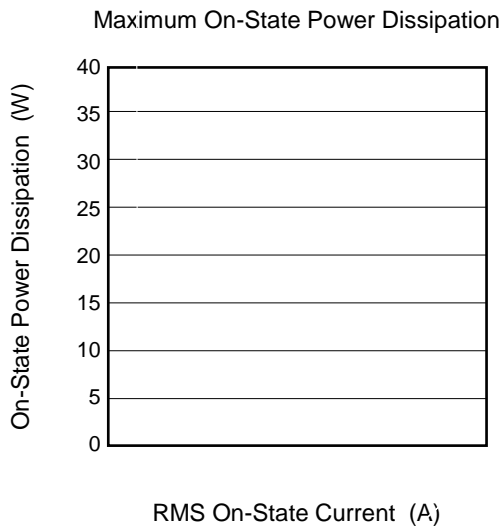
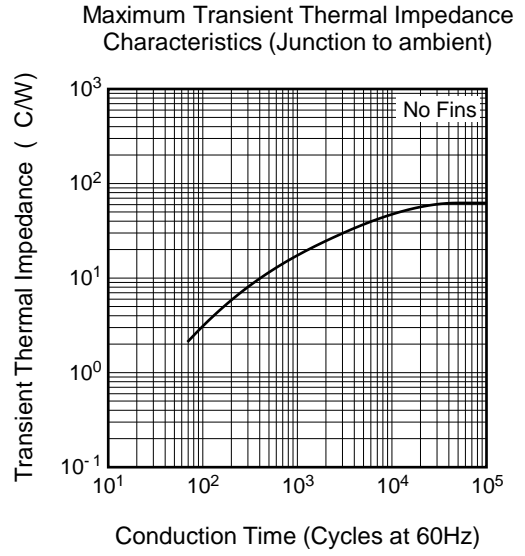
- Notes: 1. Gate open.
2. Please refer to the Ordering Information.

Electrical Characteristics

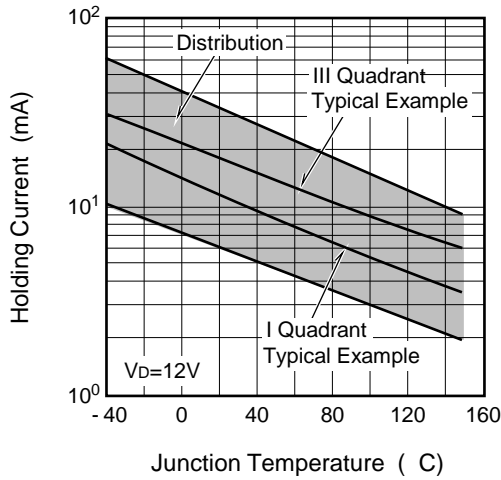
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test conditions
Repetitive peak off-state current	I_{DRM}	—	—	3.0	mA	$T_j = 150\text{ C}$, V_{DRM} applied
On-state voltage	V_{TM}	—	—	1.5	V	$T_c = 25\text{ C}$, $I_{TM} = 30\text{ A}$, instantaneous measurement
Gate trigger voltage ^{Note3}	V_{FGT}	—	—	1.5	V	$T_j = 25\text{ C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	V_{RGT}	—	—	1.5	V	
	V_{RGT}	—	—	1.5	V	
Gate trigger current ^{Note3}	I_{FGT}	—	—	30	mA	$T_j = 25\text{ C}$, $V_D = 6\text{ V}$, $R_L = 6\ \Omega$, $R_G = 330\ \Omega$
	I_{RGT}	—	—	30	mA	
	I_{RGT}	—	—	30	mA	
Gate non-trigger voltage	V_{GD}	0.2	—	—		

Performance Curves

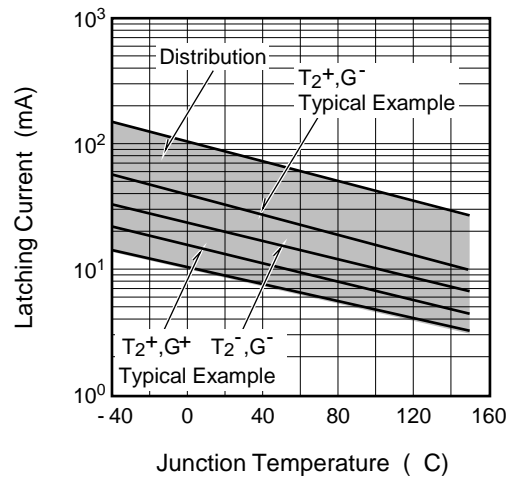




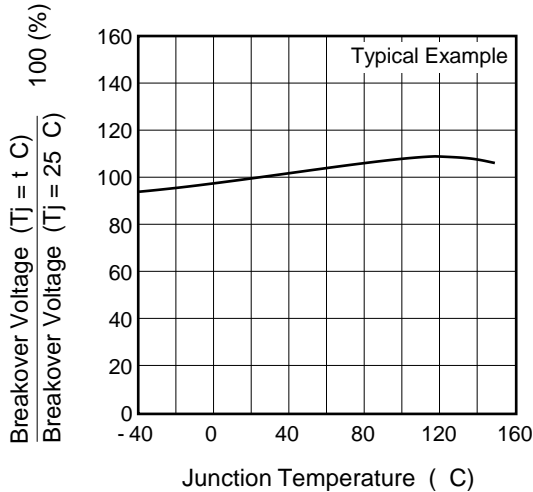
Holding Current vs. Junction Temperature



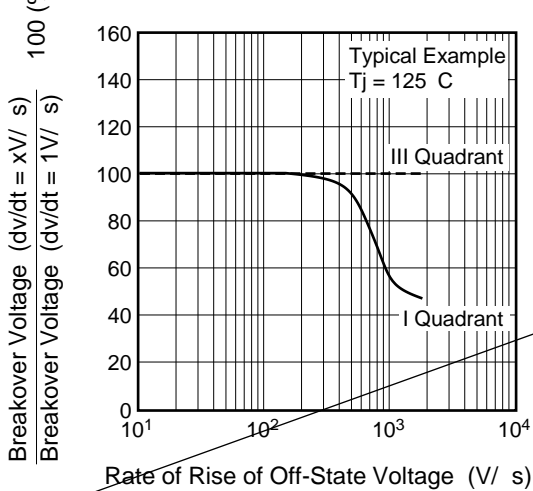
Latching Current vs. Junction Temperature



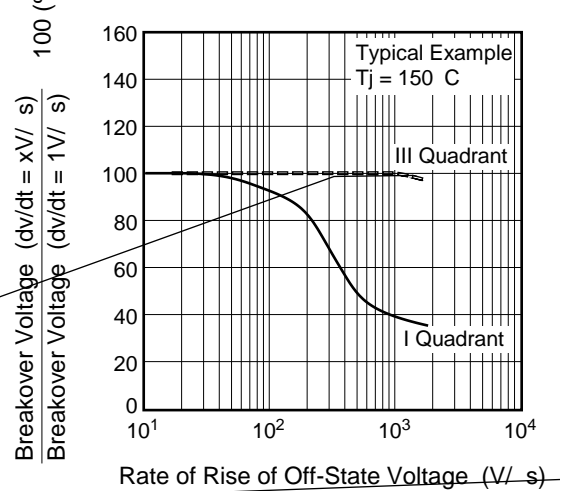
Breakover Voltage vs. Junction Temperature



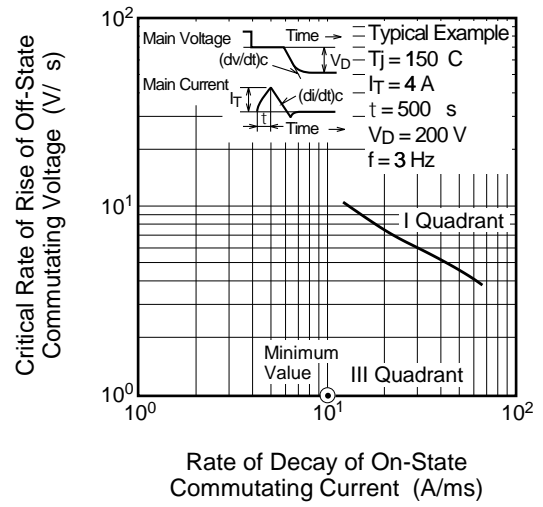
Breakover Voltage vs. Rate of Rise of Off-State Voltage ($T_j = 125$ C)



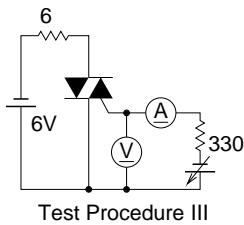
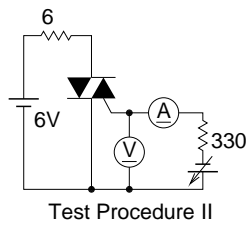
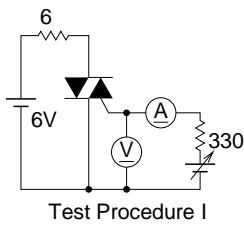
Breakover Voltage vs. Rate of Rise of Off-State Voltage ($T_j = 150$ C)



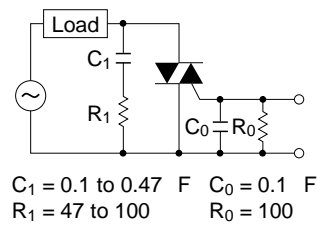
Commutation Characteristics (Tj = 150 C)



Gate Trigger Characteristics Test Circuits



Recommended peripheral components for Triac

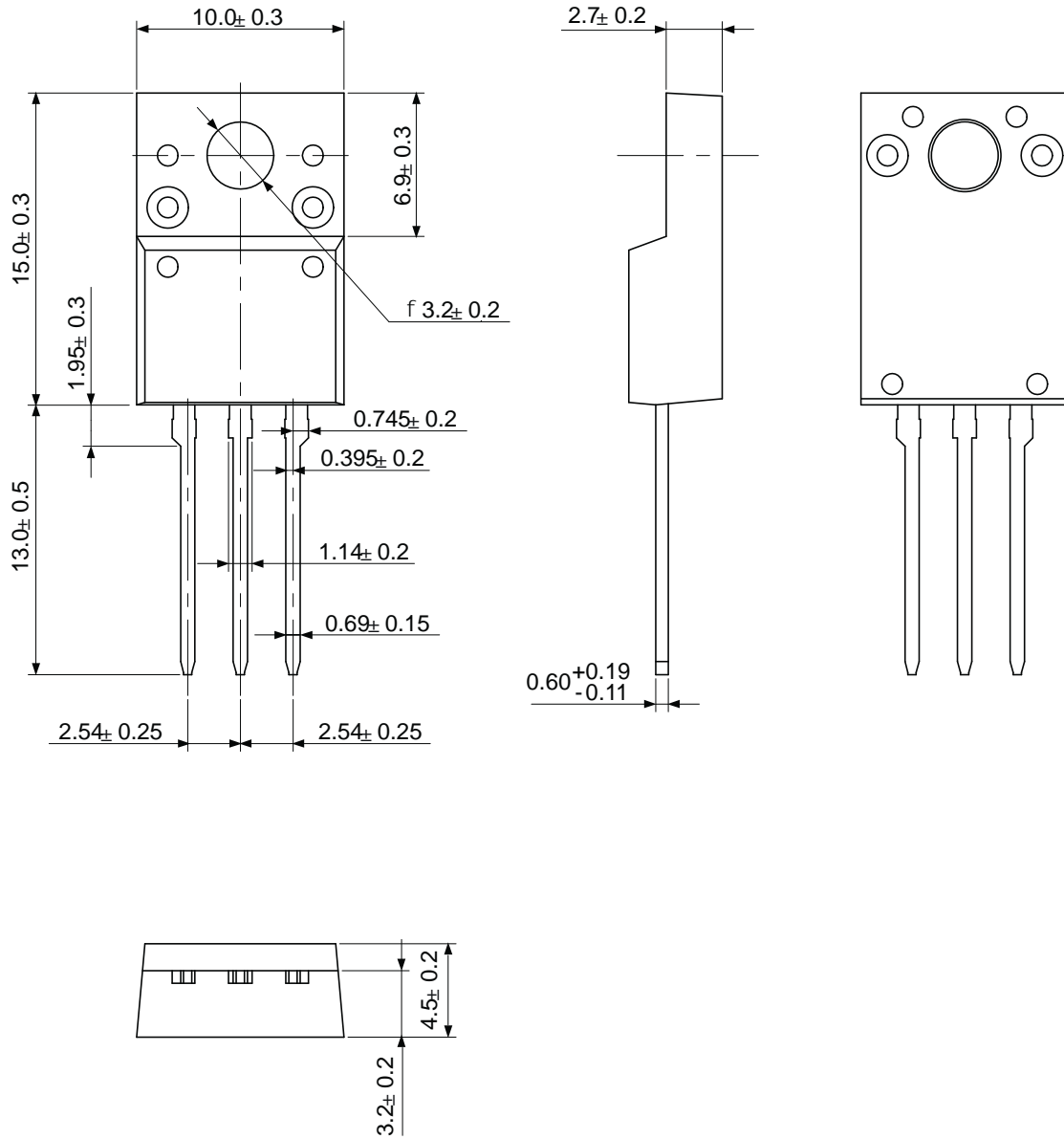


Package Dimensions

Ordering code: #BH0, #BG0

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

Unit: mm



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