

# RJQ6022DPM

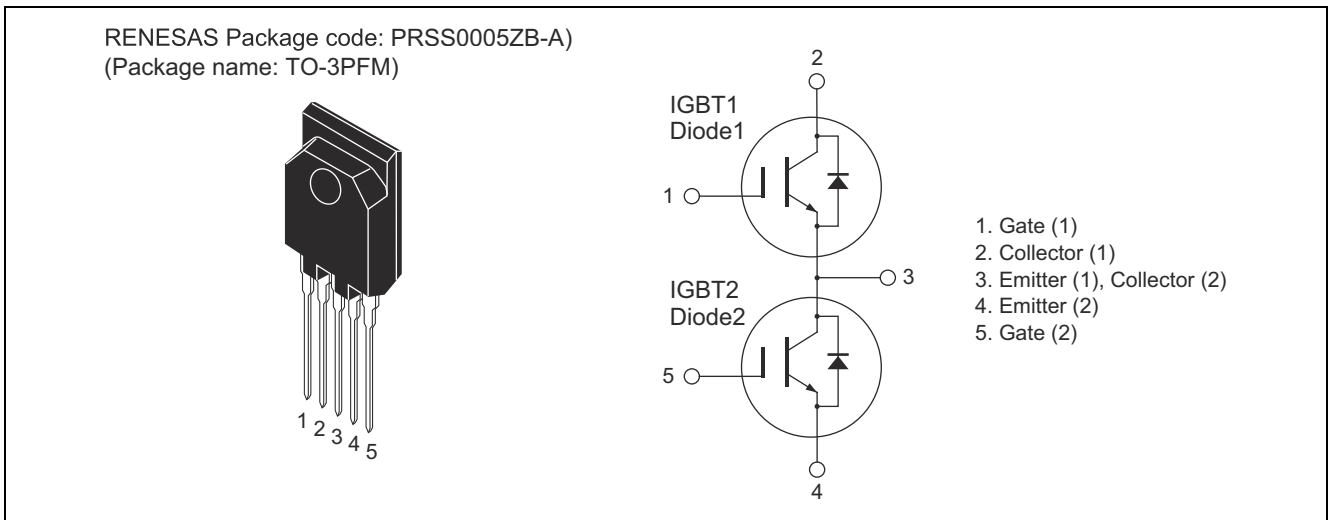
600V - 10A - IGBT  
High Speed Power Switching

R07DS0651EJ0100  
Rev.1.00  
Jan 23, 2012

## Features

- High speed switching
- Low on-state voltage
- Built in fast recovery diode in one package

## Outline



## Absolute Maximum Ratings

### IGBT1, IGBT2

(Ta = 25°C)

Item	Symbol	Ratings	Unit	
Collector to emitter voltage / diode reverse voltage	$V_{CES} / V_R$	600	V	
Gate to emitter voltage	$V_{GES}$	±30	V	
Collector current	$T_c = 25^\circ\text{C}$	$I_c$	20	A
	$T_c = 100^\circ\text{C}$	$I_c$	10	A
Collector peak current	$I_{C(\text{peak})}$ <sup>Note1</sup>	40	A	
Junction temperature	$T_j$	150	°C	
Storage temperature	$T_{stg}$	-55 to +150	°C	

- Notes: 1.  $PW \leq 10 \mu\text{s}$ , duty cycle  $\leq 1\%$   
2.  $PW \leq 5 \mu\text{s}$ , duty cycle  $\leq 1\%$

### Diode1, Diode2

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Maximum reverse voltage	$V_{RM}$	600	V
Continuous forward current	$I_F$	10	A
Peak surge forward current	$I_{FSM}$	20	A
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C

## Electrical Characteristics

### IGBT1, IGBT2

(T<sub>a</sub> = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I <sub>CES</sub> /I <sub>R</sub>	—	—	20	μA	V <sub>CE</sub> = 600 V, V <sub>GE</sub> = 0
Gate to emitter leak current	I <sub>GES</sub>	—	—	±1	μA	V <sub>GE</sub> = ±30 V, V <sub>CE</sub> = 0
Gate to emitter cutoff voltage	V <sub>GE(off)</sub>	5.5	—	7.5	V	V <sub>CE</sub> = 10 V, I <sub>C</sub> = 1 mA
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	—	1.4	2.0	V	I <sub>C</sub> = 10 A, V <sub>GE</sub> = 15 V <sup>Note3</sup>
	V <sub>CE(sat)</sub>	—	2.0	—	V	I <sub>C</sub> = 20 A, V <sub>GE</sub> = 15 V <sup>Note3</sup>
Short circuit withstand time	t <sub>sc</sub>	—	6	—	μs	V <sub>CC</sub> ≤ 360 V, V <sub>GE</sub> = 15 V T <sub>C</sub> = 100 °C

Notes: 3. Pulse test.

### Diode1, Diode2

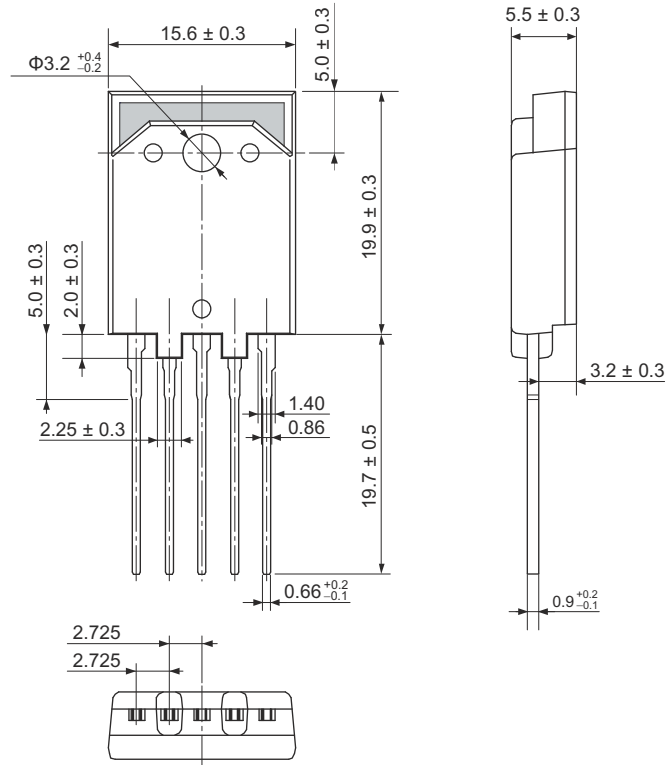
(T<sub>a</sub> = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Forward voltage	V <sub>F</sub>	—	1.5	2.0	V	I <sub>F</sub> = 10 A
Reverse current	I <sub>R</sub>	—	—	10	μA	V <sub>R</sub> = 600 V
Reverse recovery time	t <sub>rr</sub>	—	15	—	ns	I <sub>F</sub> = 10 A, di/dt = -300A/μs

Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-3PFM	SC-93	PRSS0005ZB-A	TO-3PFM / TO-3PFM-5	5.3g

Unit: mm



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