

RJQ6021DPM

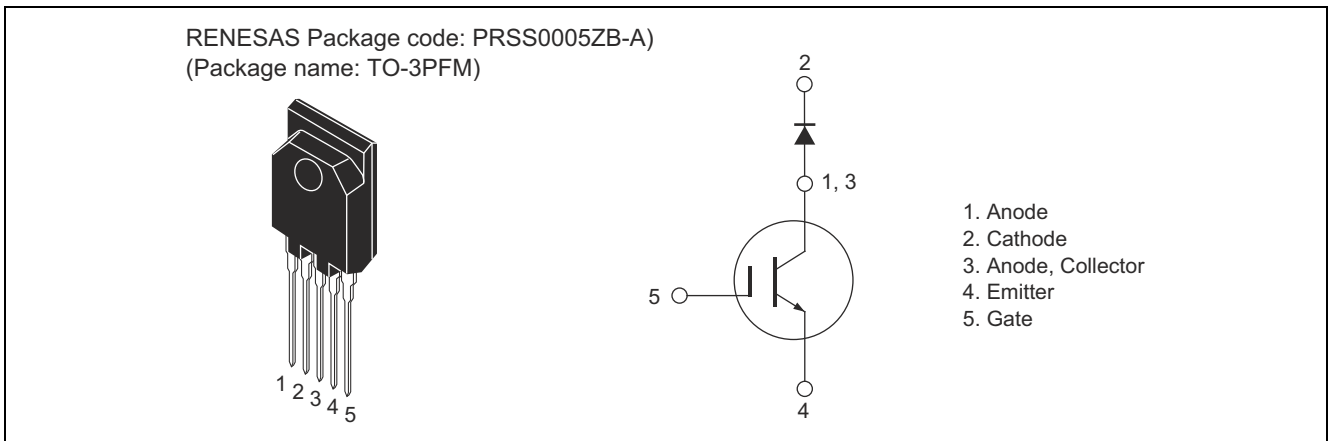
600V - 10A - IGBT
High Speed Power Switching

R07DS0650EJ0100
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

IGBT

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CES}	600	V
Gate to emitter voltage	V_{GES}	±30	V
Collector current	$T_c = 25^\circ\text{C}$	I_C	20
	$T_c = 100^\circ\text{C}$	I_C	10
Collector peak current	$I_{C(\text{peak})}$ ^{Note1}	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 $\leq 1\%$

Diode

(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

IGBT

(T_a = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I _{CES}	—	—	20	μA	V _{CE} = 600 V, V _{GE} = 0
Gate to emitter leak current	I _{GES}	—	—	±1	μA	V _{GE} = ±30 V, V _{CE} = 0
Gate to emitter cutoff voltage	V _{GE(off)}	5.5	—	7.5	V	V _{CE} = 10 V, I _C = 1 mA
Collector to emitter saturation voltage	V _{CE(sat)}	—	1.5	2.1	V	I _C = 10 A, V _{GE} = 15 V ^{Note2, 3}
	V _{CE(sat)}	—	2.1	—	V	I _C = 20 A, V _{GE} = 15 V ^{Note2, 3}
Input capacitance	C _{ies}	—	880	—	pF	V _{CE} = 25 V
Output capacitance	C _{oes}	—	48	—	pF	V _{GE} = 0
Reveres transfer capacitance	C _{res}	—	35	—	pF	f = 1 MHz
Short circuit withstand time	t _{sc}	—	6	—	μs	V _{CC} ≤ 360 V, V _{GE} = 15 V T _C = 100 °C

Notes: 2. Pulse test.

3. Value at pin 3 to pin 4.

Diode

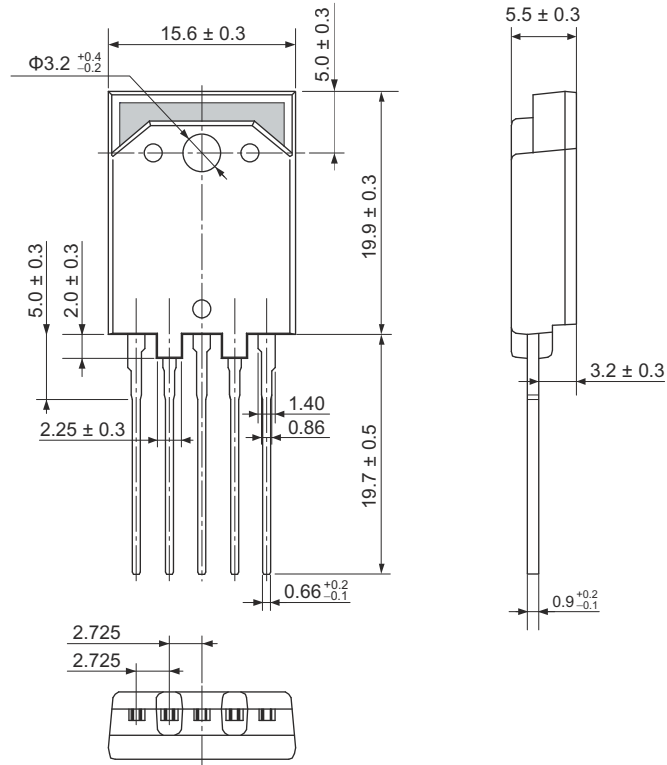
(T_a = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Forward voltage	V _F	—	1.5	2.0	V	I _F = 10 A
Reverse current	I _R	—	—	10	μA	V _R = 600 V
Reverse recovery time	t _{rr}	—	15	—	ns	I _F = 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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