RJP6065DPM

Silicon N Channel IGBT
High Speed Power Switching

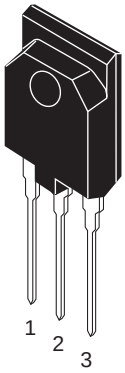
R07DS0204EJ0100
Rev.1.00
Nov 19, 2010

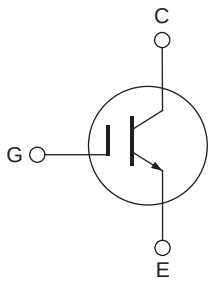
Features

- Low collector to emitter saturation voltage
  $V_{CE(sat)}$ = 1.8 V typ. (I_C = 40 A, V_{GE} = 15V, Ta = 25°C)
- Gate to emitter voltage rating ±30 V
- Pb-free lead plating and chip bonding

Outline

RENESAS Package code: PRSS0003ZA-A
(Package name: TO-3PFM)





1. Gate
2. Collector
3. Emitter

Absolute Maximum Ratings

(Tc = 25°C)

Item	Symbol	Ratings	Unit
Collector to emitter voltage	V_{CES}	630	V
Gate to emitter voltage	V_{GES}	±30	V
Collector current	Ic Note1	40	A
Collector peak current	ic(peak) Note1	100	A
Collector dissipation	P_C	50	W
Junction to case thermal impedance	θj-c	2.5	°C/W
Junction temperature	Tj	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes: 1. Pulse width limited by safe operating area

Electrical Characteristics

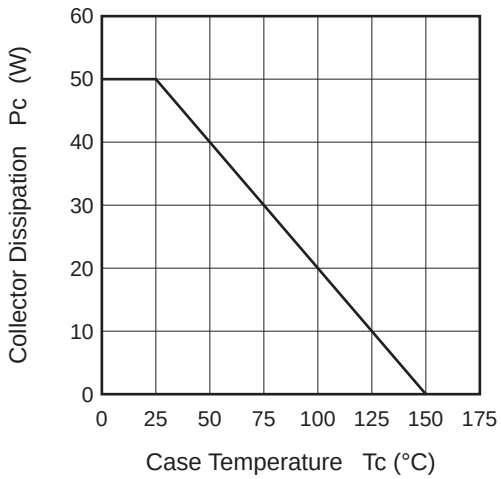
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I_{CES}	—	—	1	μA	V_{CE} = 630 V, V_{GE} = 0
Gate to emitter leak current	I_{GES}	—	—	±100	nA	V_{GE} = ± 30 V, V_{CE} = 0
Gate to emitter cutoff voltage	$V_{GE(off)}$	3	—	5.5	V	V_{CE} = 10 V, I_C = 1 mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.8	2.3	V	I_C = 40 A, V_{GE} = 15 V Note2
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.5	—	V	I_C = 20 A, V_{GE} = 15 V Note2
Input capacitance	Cies	—	1130	—	pF	V_{CE} = 25 V V_{GE} = 0 f = 1 MHz
Output capacitance	Coes	—	95	—	pF	
Reveres transfer capacitance	Cres	—	10	—	pF	
Switching time	$t_{d(on)}$	—	40	—	ns	I_C = 40 A, Resistive Load R_L = 7.5 Ω V_{GE} = 15 V Rg = 5 Ω
	t_r	—	90	—	ns	
	$t_{d(off)}$	—	80	—	ns	
	t_f	—	450	—	ns	

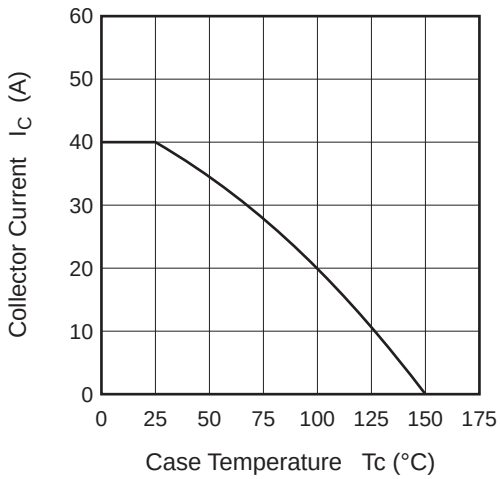
Notes: 2. Pulse test

Main Characteristics

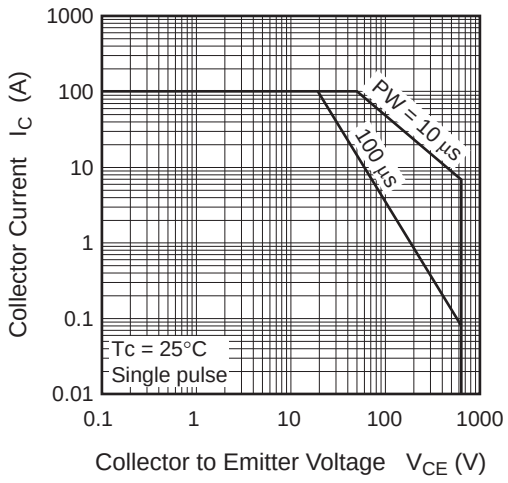
Collector Dissipation vs. Case Temperature



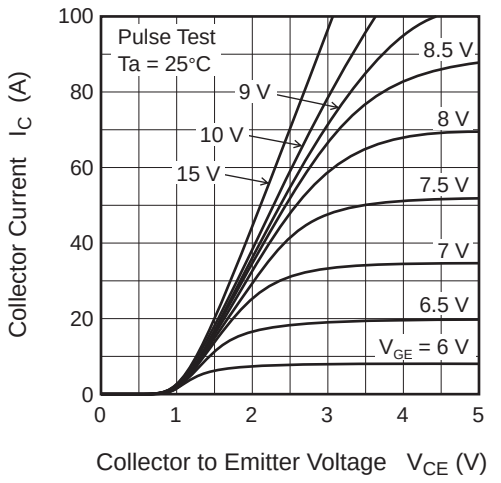
Maximum DC Collector Current vs. Case Temperature



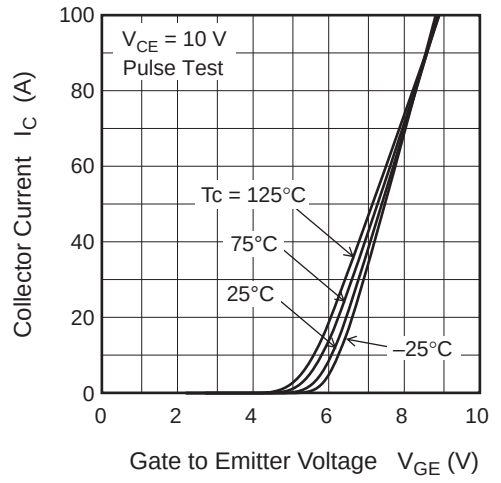
Maximum Safe Operation Area



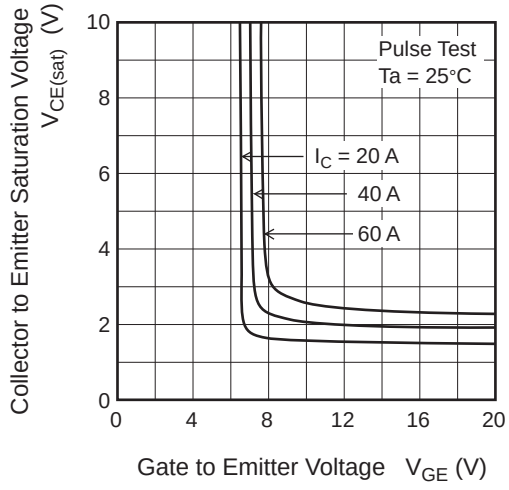
Typical Output Characteristics



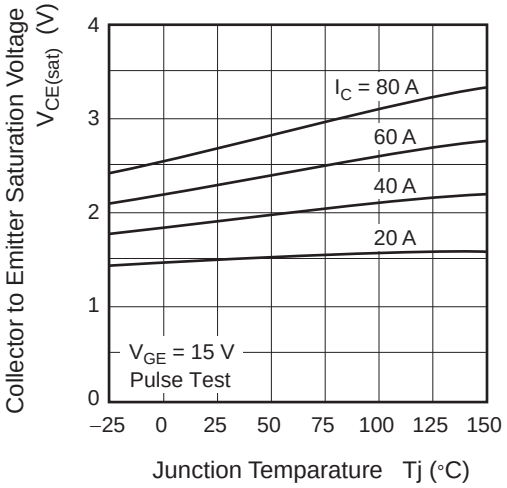
Typical Transfer Characteristics



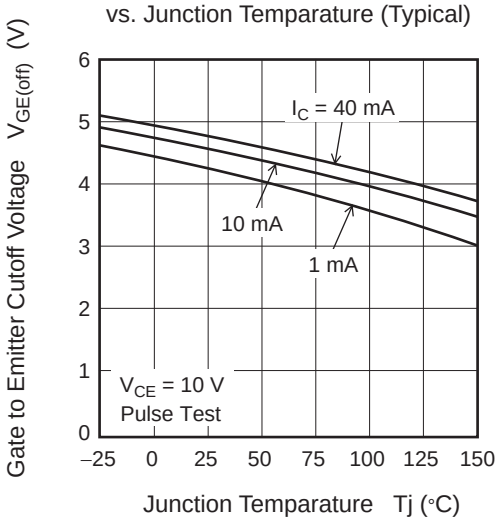
Collector to Emitter Saturation Voltage vs. Gate to Emitter Voltage (Typical)



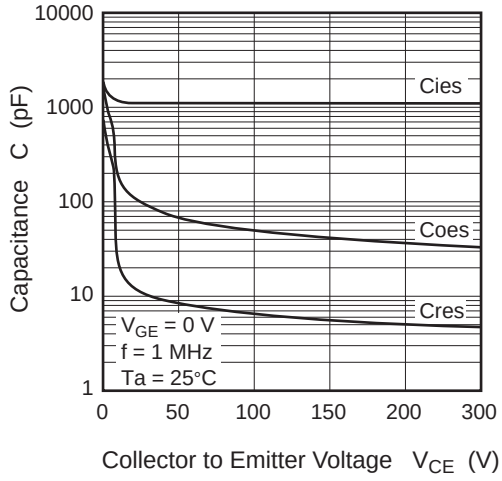
Collector to Emitter Saturation Voltage vs. Junction Temparature (Typical)



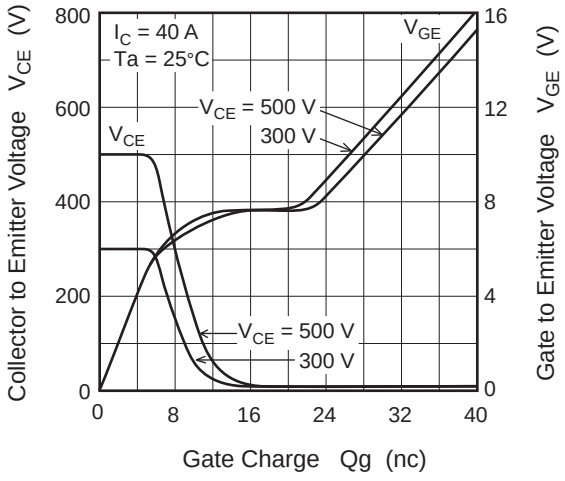
Gate to Emitter Cutoff Voltage vs. Junction Temparature (Typical)



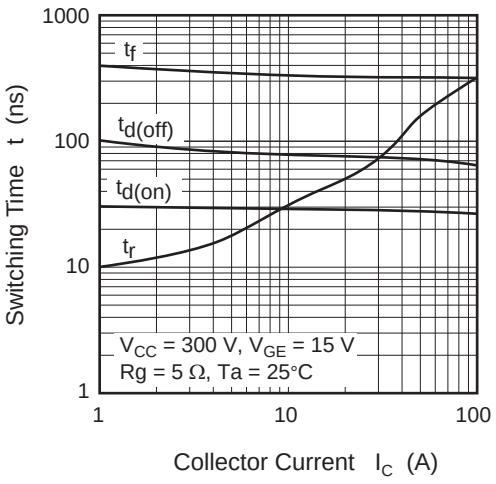
Typical Capacitance vs. Collector to Emitter Voltage



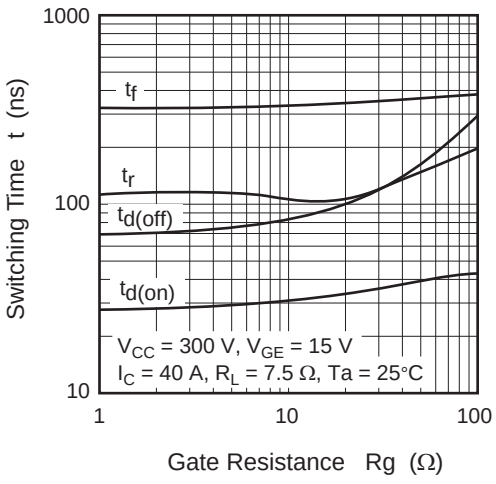
Dynamic Input Characteristics (Typical)



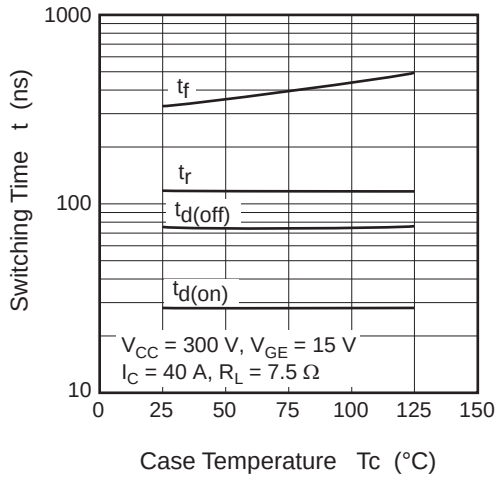
Switching Characteristics (Typical) (1)



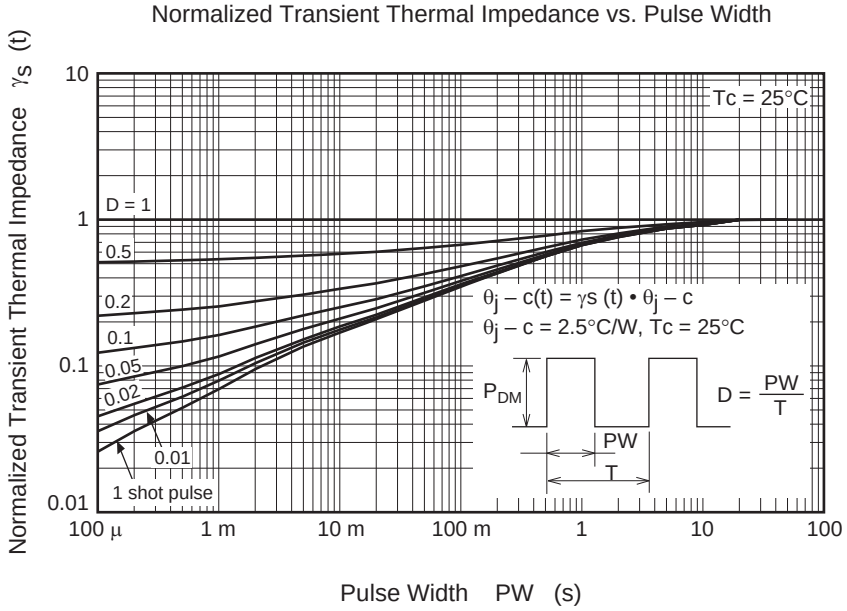
Switching Characteristics (Typical) (2)



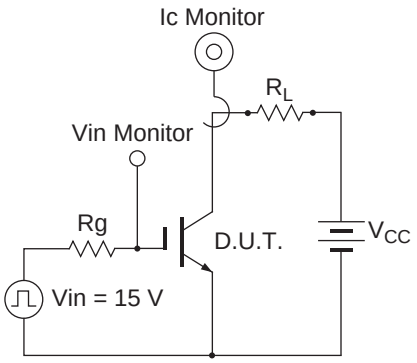
Switching Characteristics (Typical) (3)



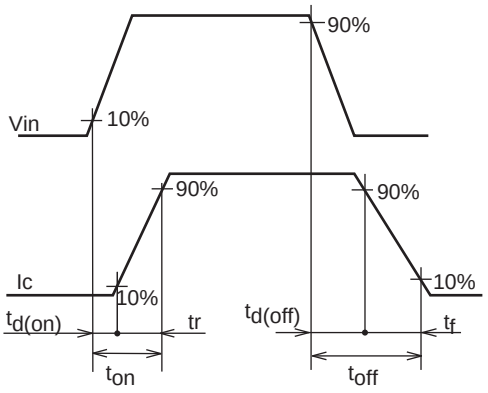
Normalized Transient Thermal Impedance vs. Pulse Width



Switching Time Test Circuit



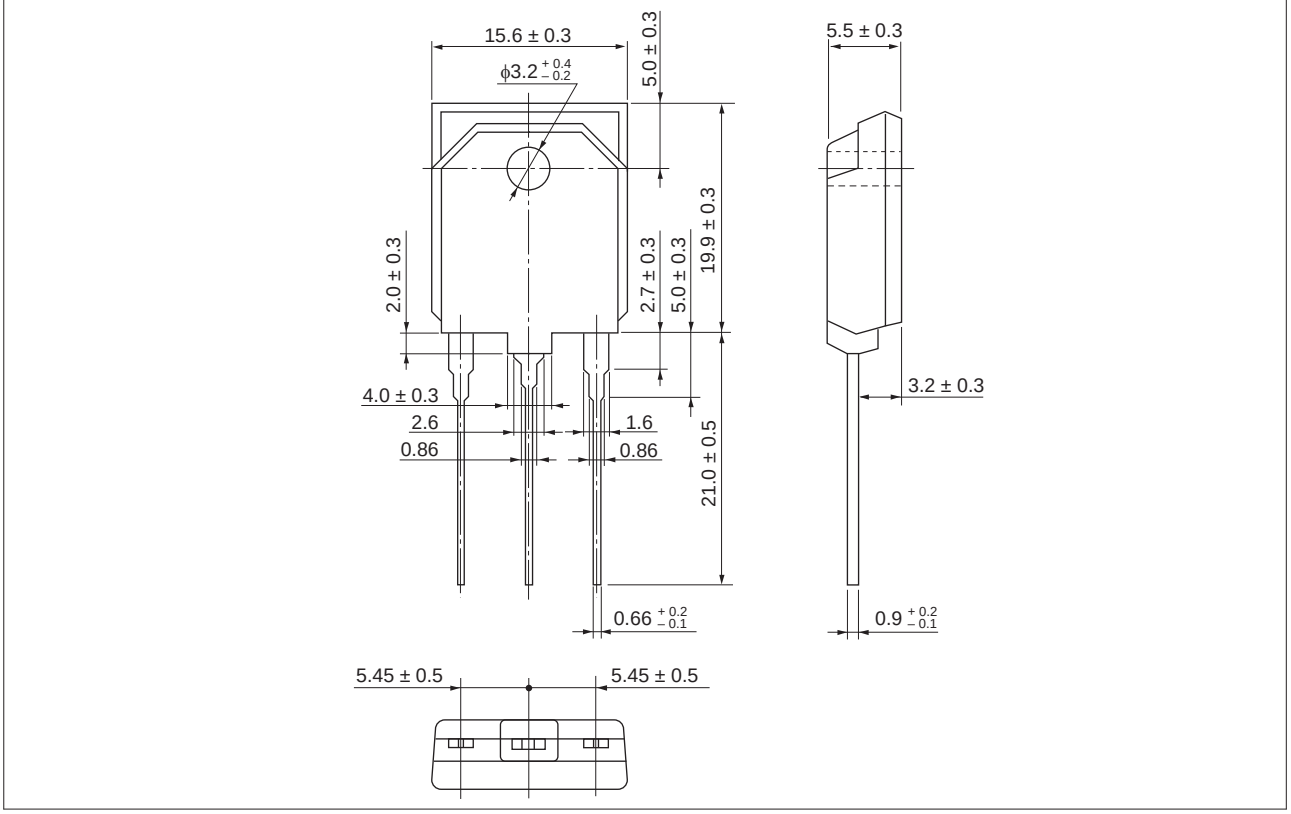
Waveform



Package Dimensions

Package Name	JEITA Package Code	RENESAS Code	Previous Code	MASS[Typ.]
TO-3PFM	SC-93	PRSS0003ZA-A	TO-3PFM / TO-3PFMV	5.2g

Unit: mm



Ordering Information

Orderable Part No.	Quantity	Shipping Container
RJP6065DPM-00-T1	360 pcs	Box (Tube)

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