

RJP60F4DPM

600 V - 30 A - IGBT
High Speed Power Switching

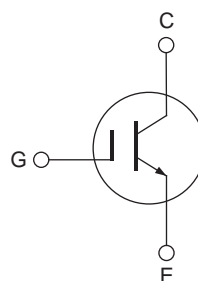
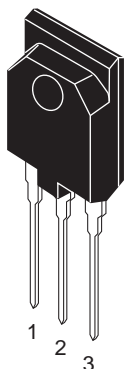
R07DS0586EJ0100
Rev.1.00
Nov 25, 2011

Features

- Low collector to emitter saturation voltage
 $V_{CE(sat)} = 1.4 \text{ V typ. (at } I_C = 30 \text{ A, } V_{GE} = 15\text{V, } T_a = 25^\circ\text{C)}$
- Trench gate and thin wafer technology
- High speed switching

Outline

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



1. Gate
2. Collector
3. Emitter

Absolute Maximum Ratings

($T_c = 25^\circ\text{C}$)

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 ^{Note1}	60	A
	$T_c = 100^\circ\text{C}$	I_C ^{Note1}	30	A
Collector peak current	$i_C(\text{peak})$ ^{Note1}	120	A	
Collector dissipation	P_C	41.2	W	
Junction to case thermal impedance	θ_{j-c}	3.03	$^\circ\text{C/W}$	
Junction temperature	T_j	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

Notes: 1. Pulse width limited by safe operating area.

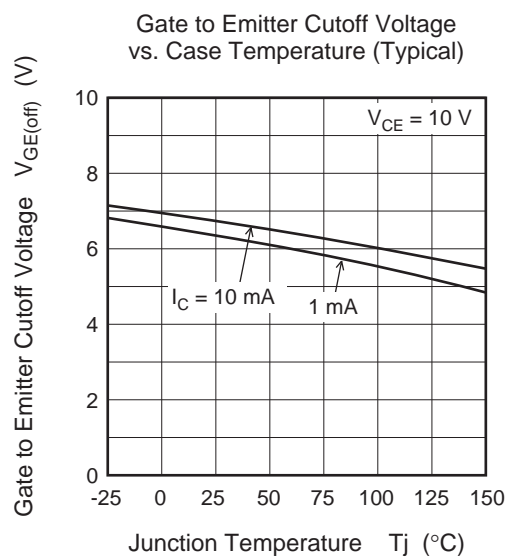
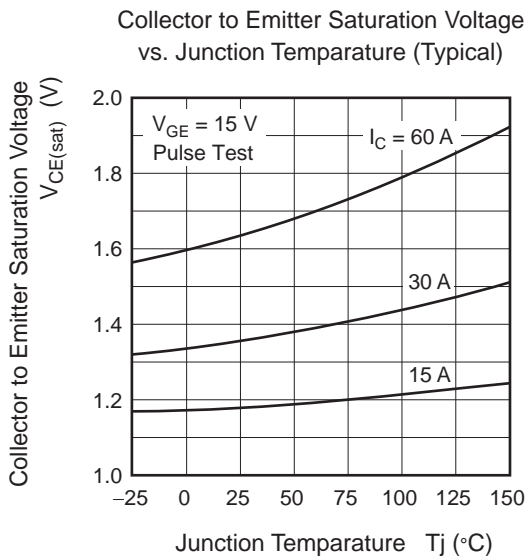
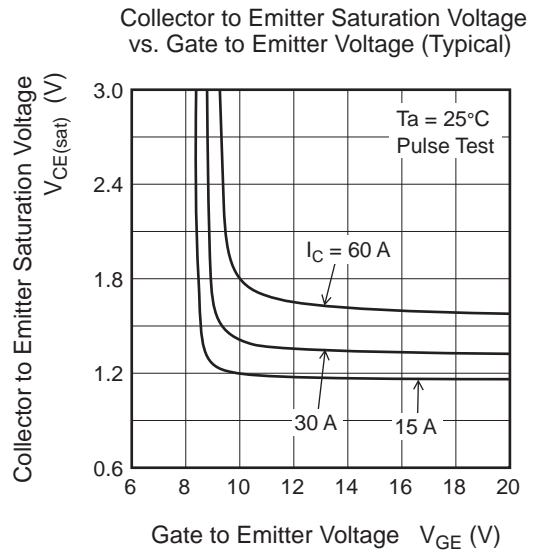
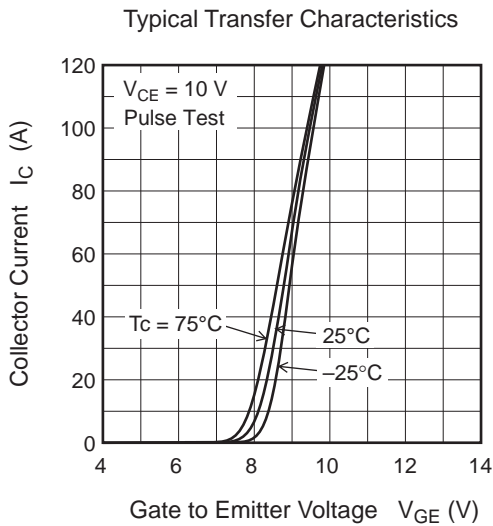
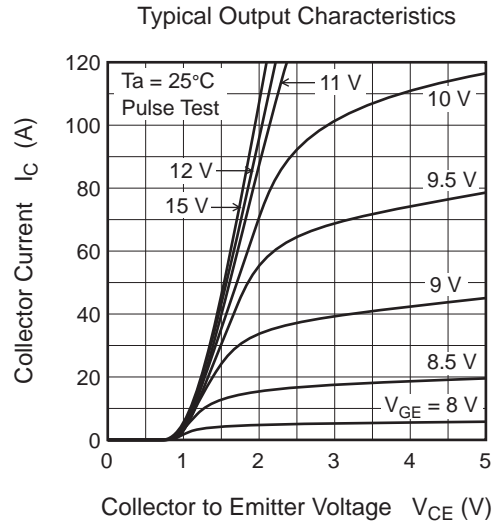
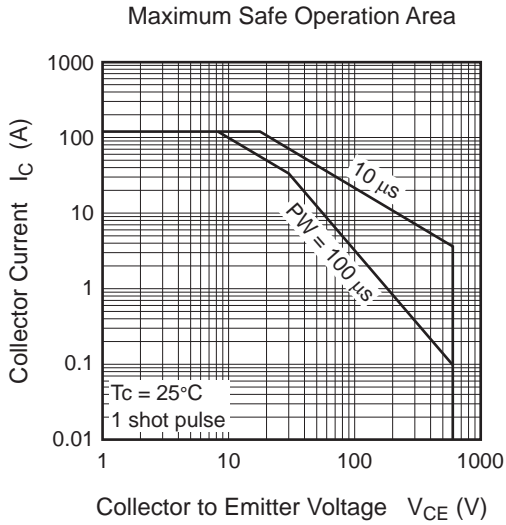
Electrical Characteristics

(T_j = 25°C)

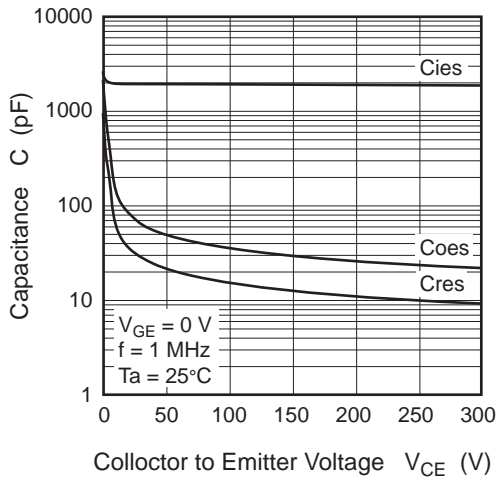
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I _{CES}	—	—	100	μA	V _{CE} = 600V, V _{GE} = 0
Gate to emitter leak current	I _{GES}	—	—	±1	μA	V _{GE} = ±30 V, V _{CE} = 0
Gate to emitter cutoff voltage	V _{GE(off)}	4	—	8	V	V _{CE} = 10V, I _C = 1 mA
Collector to emitter saturation voltage	V _{CE(sat)}	—	1.4	1.82	V	I _C = 30 A, V _{GE} = 15V ^{Note3}
	V _{CE(sat)}	—	1.7	—	V	I _C = 60 A, V _{GE} = 15V ^{Note3}
Input capacitance	C _{ies}	—	1900	—	pF	V _{CE} = 25 V
Output capacitance	C _{oes}	—	70	—	pF	V _{GE} = 0 V
Reverse transfer capacitance	C _{res}	—	33	—	pF	f = 1 MHz
Switching time	t _{d(on)}	—	45	—	ns	I _C = 30 A,
	t _r	—	150	—	ns	V _{CE} = 400 V, V _{GE} = 15 V
	t _{d(off)}	—	70	—	ns	R _g = 5 Ω ^{Note3}
	t _f	—	80	—	ns	Inductive load

Notes: 3. Pulse test

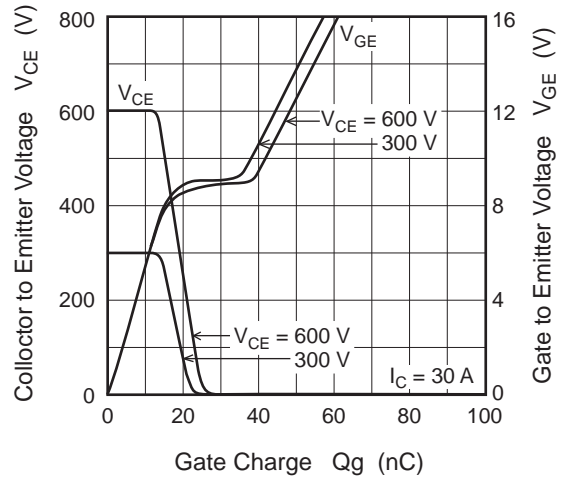
Main Characteristics



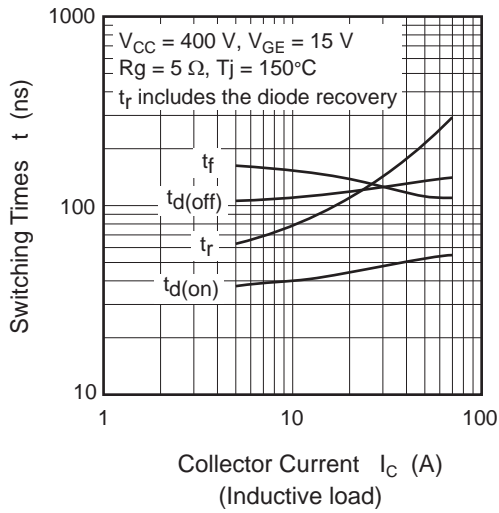
Typical Capacitance vs. Collector to Emitter Voltage



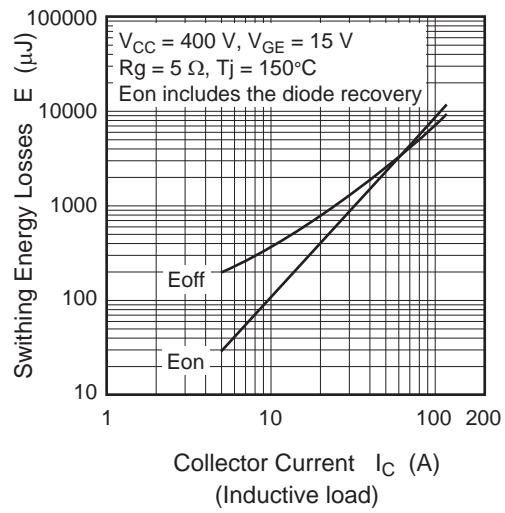
Dynamic Input Characteristics (Typical)



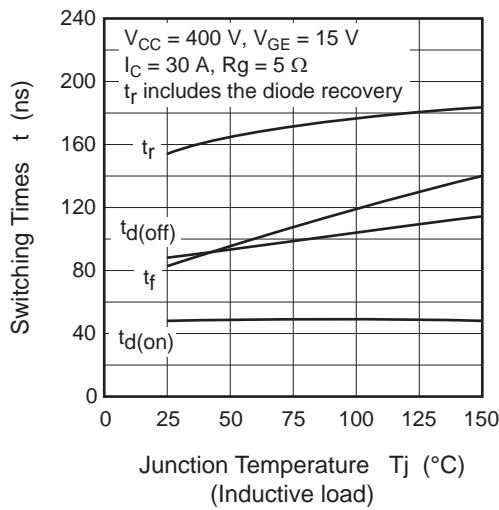
Switching Characteristics (Typical) (1)



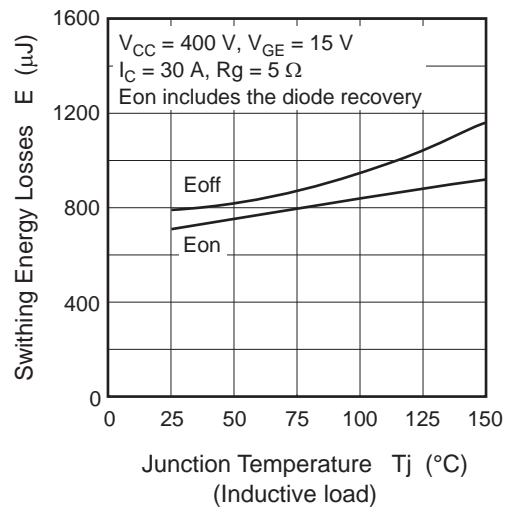
Switching Characteristics (Typical) (2)

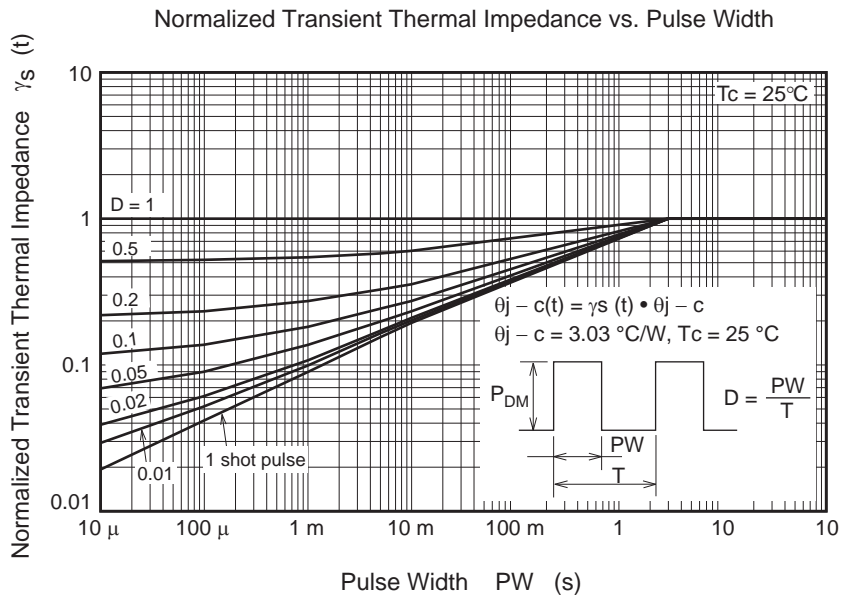


Switching Characteristics (Typical) (3)

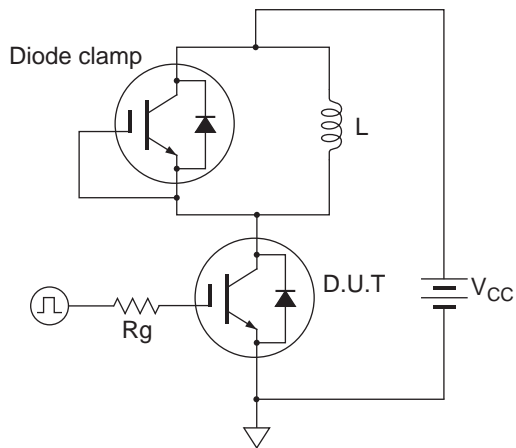


Switching Characteristics (Typical) (4)

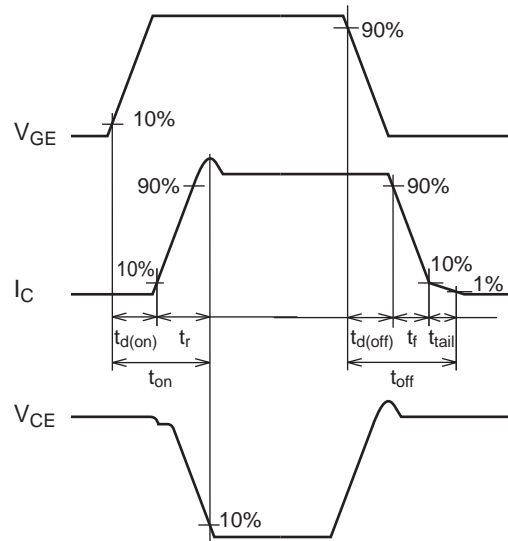




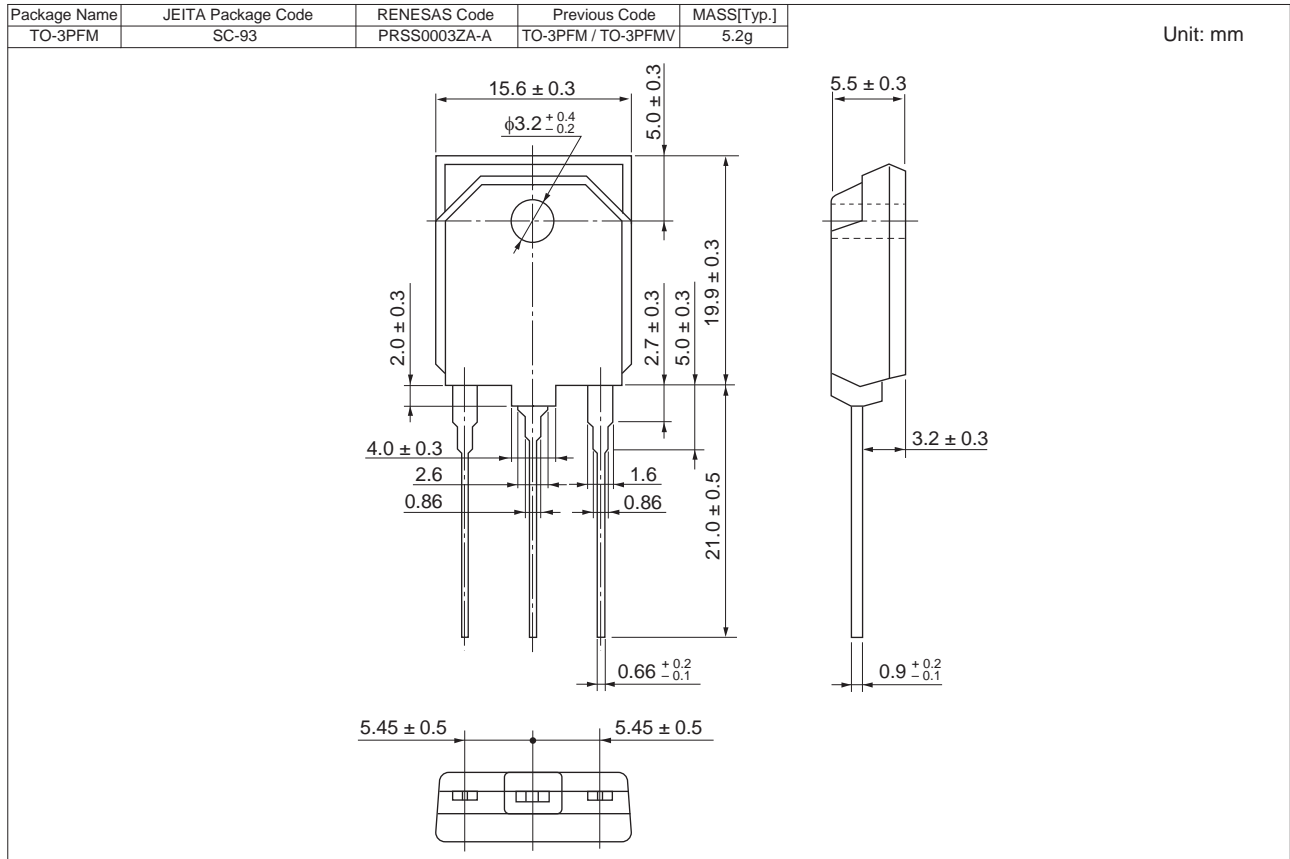
Switching Time Test Circuit



Waveform



Package Dimensions



Ordering Information

Orderable Part Number	Quantity	Shipping Container
RJP60F4DPM-00#T1	360 pcs	Box (Tube)

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