

# RJP60D0DPK

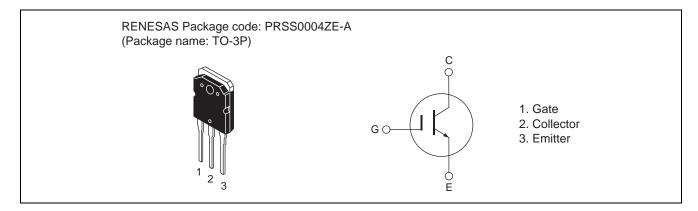
# Silicon N Channel IGBT High Speed Power Switching

R07DS0166EJ0300 Rev.3.00 Jul 13, 2011

#### **Features**

- Short circuit withstand time (5 µs typ.)
- Low collector to emitter saturation voltage  $V_{CE(sat)} = 1.6 \text{ V}$  typ. ( $I_C = 22 \text{ A}$ ,  $V_{GE} = 15 \text{ V}$ ,  $Ta = 25^{\circ}C$ )
- Gate to emitter voltage rating ±30 V
- Pb-free lead plating and chip bonding

#### **Outline**



### **Absolute Maximum Ratings**

 $(Ta = 25^{\circ}C)$ 

Item		Symbol	Ratings	Unit
Collector to emitter voltage		V <sub>CES</sub>	600	V
Gate to emitter voltage		$V_{GES}$	±30	V
Collector current	Tc = 25°C	Ic	45	А
	Tc = 100°C	lc	22	Α
Collector peak current		ic(peak) Note1	90	Α
Collector dissipation		P <sub>C</sub> Note2	140	W
Junction to case thermal impedance		θj-c Note2	0.89	°C/W
Junction temperature		Tj	150	°C
Storage temperature		Tstg	-55 to +150	°C

Notes: 1. PW  $\leq$  10  $\mu$ s, duty cycle  $\leq$  1%

2. Value at Tc = 25°C

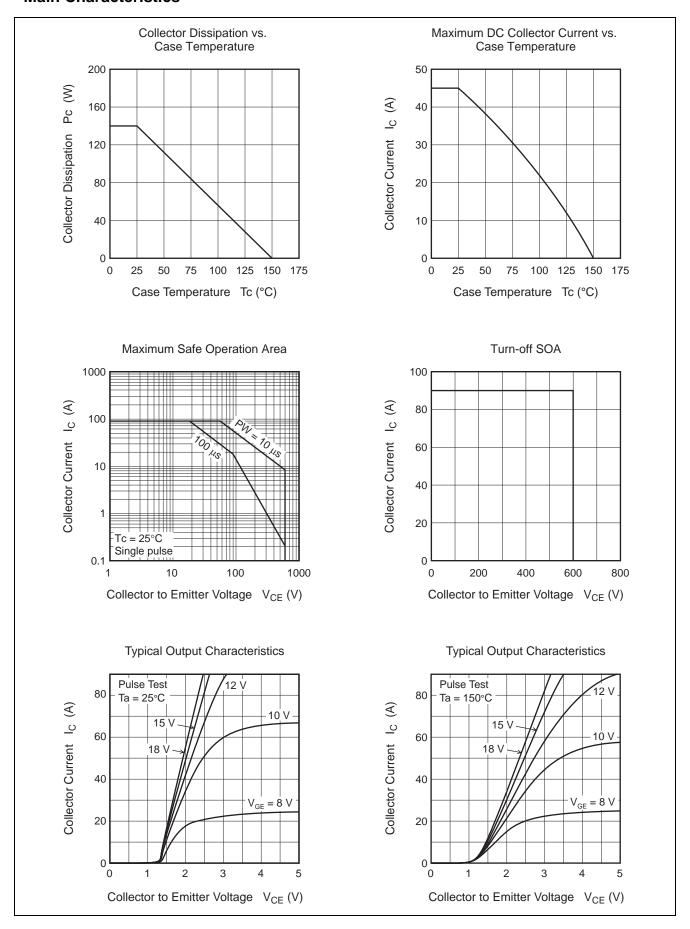
## **Electrical Characteristics**

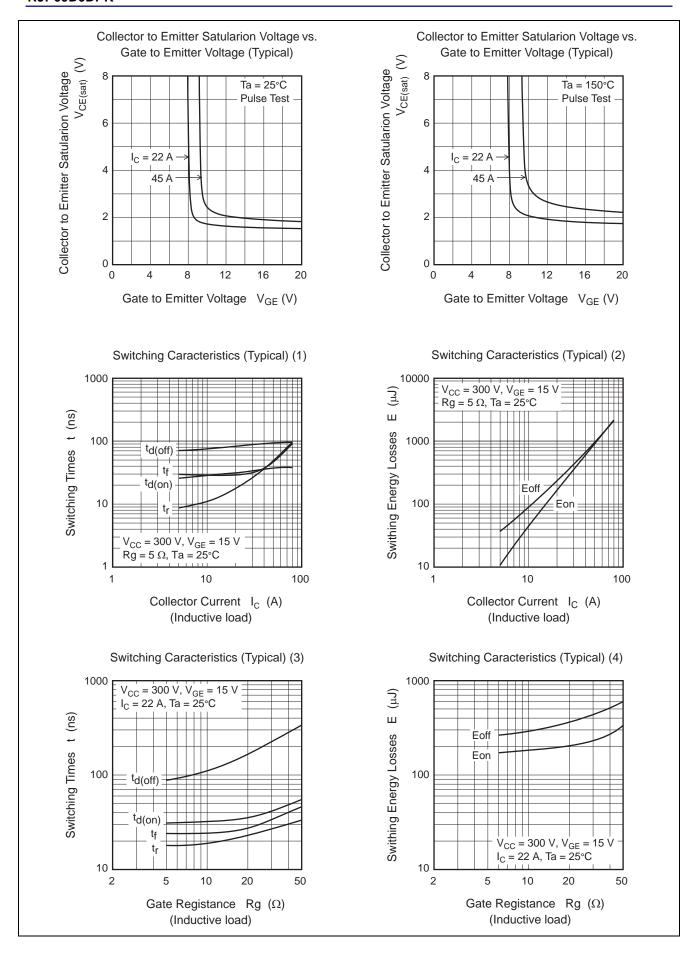
 $(Ta = 25^{\circ}C)$ 

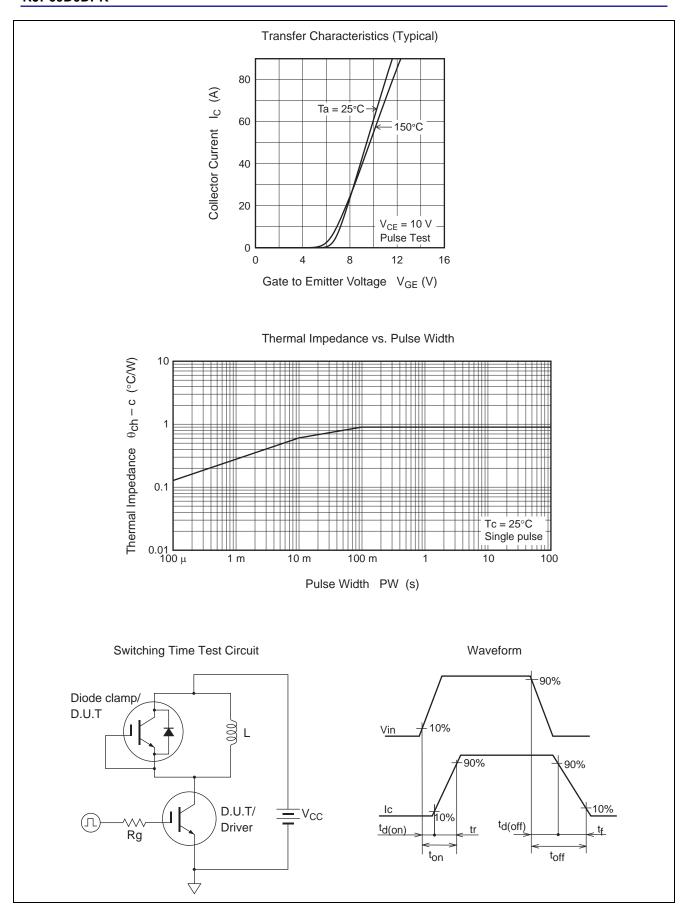
Item	Symbol	Min	Тур	Max	Unit	Test Conditions	
Zero gate voltage collector current	I <sub>CES</sub>	_	_	5	μΑ	$V_{CE} = 600 \text{ V}, V_{GE} = 0$	
Gate to emitter leak current	I <sub>GES</sub>	_	_	±1	μΑ	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$	
Gate to emitter cutoff voltage	$V_{GE(off)}$	4.0	_	6.0	V	$V_{CE} = 10 \text{ V}, I_{C} = 1 \text{ mA}$	
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	_	1.6	2.2	V	$I_C = 22 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$	
	V <sub>CE(sat)</sub>	_	2.0	_	V	$I_C = 45 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$	
Input capacitance	Cies	_	1050	_	pF	V <sub>CE</sub> = 20 V V <sub>GE</sub> = 0	
Output capacitance	Coes	_	70	_	pF		
Reveres transfer capacitance	Cres	_	32	_	pF	f = 1 MHz	
Total gate charge	Qg	_	45	_	nC	V <sub>GE</sub> = 15 V V <sub>CE</sub> = 300 V I <sub>C</sub> = 22 A	
Gate to emitter charge	Qge	_	6	_	nC		
Gate to collector charge	Qgc	_	20	_	nC		
Switching time	t <sub>d(on)</sub>	_	35	_	ns	$V_{CC}$ = 300 V, $V_{GE}$ = 15 V $I_{C}$ = 22 A $Rg$ = 5 $\Omega$ (Inductive load)	
	t <sub>r</sub>	_	20	_	ns		
	t <sub>d(off)</sub>	_	90	_	ns		
	t <sub>f</sub>	_	70	_	ns		
Short circuit withstand time	t <sub>sc</sub>	3.0	5.0	_	μS	$V_{CC} \le 360 \text{ V}, V_{GE} = 15 \text{ V}$	

Notes: 3. Pulse test

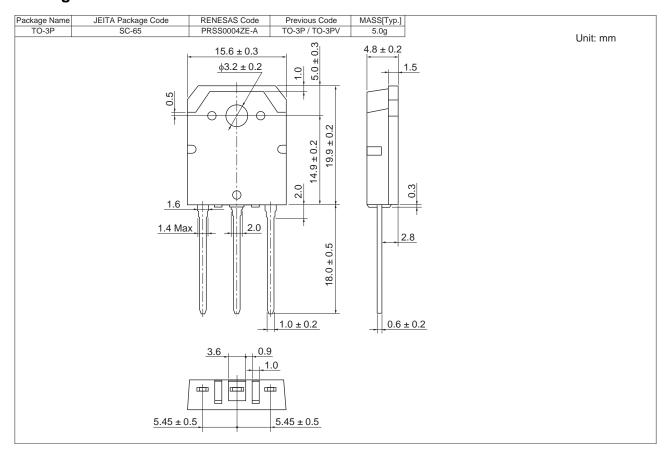
### **Main Characteristics**







## **Package Dimension**



# **Ordering Information**

Ordering Part No.	Quantity	Shipping Container
RJP60D0DPK-00-T0	360 pcs	Box (Tube)

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