

# RJP1CS05DWT/RJP1CS05DWA

1250V - 75A - IGBT

Application: Inverter

R07DS0828EJ0100

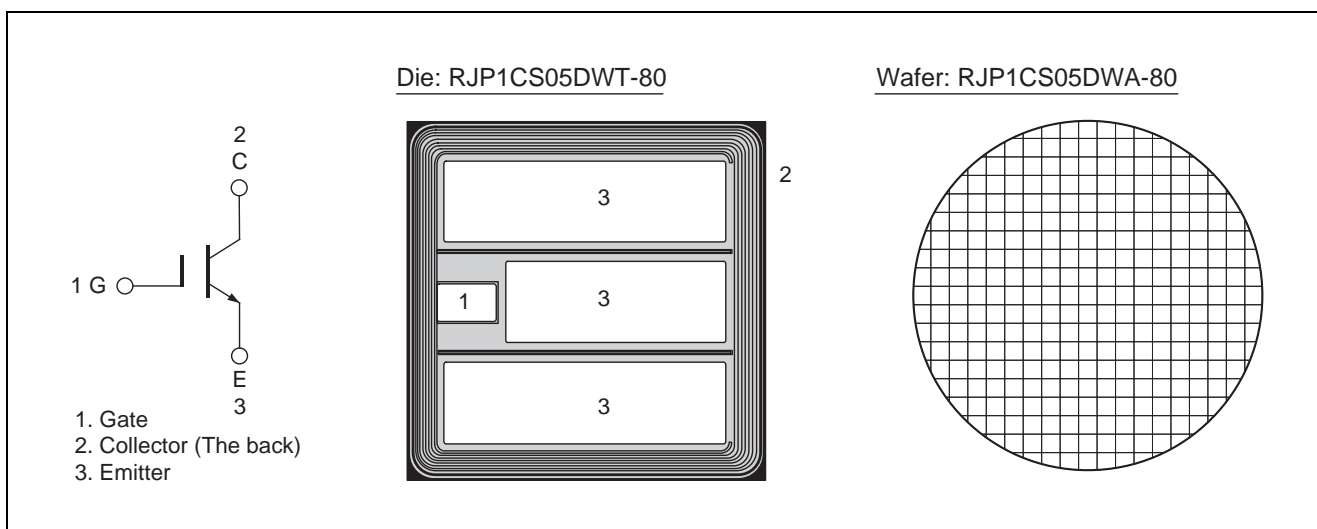
Rev.1.00

Jan 23, 2013

## Features

- Low collector to emitter saturation voltage  
 $V_{CE(sat)} = 1.8 \text{ V typ. (at } I_C = 75 \text{ A, } V_{GE} = 15 \text{ V, } T_a = 25^\circ\text{C)}$
- High speed switching
- Short circuit withstands time (10  $\mu\text{s min.}$ )

## Outline



## Absolute Maximum Ratings

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

Item	Symbol	Ratings	Unit	
Collector to emitter voltage	$V_{CES}$	1250	V	
Gate to emitter voltage	$V_{GES}$	$\pm 30$	V	
Collector current	$T_c = 25^\circ\text{C}$	$I_c$	150	A
	$T_c = 100^\circ\text{C}$	$I_c$	75	A
Junction temperature	$T_j$	150	$^\circ\text{C}$	

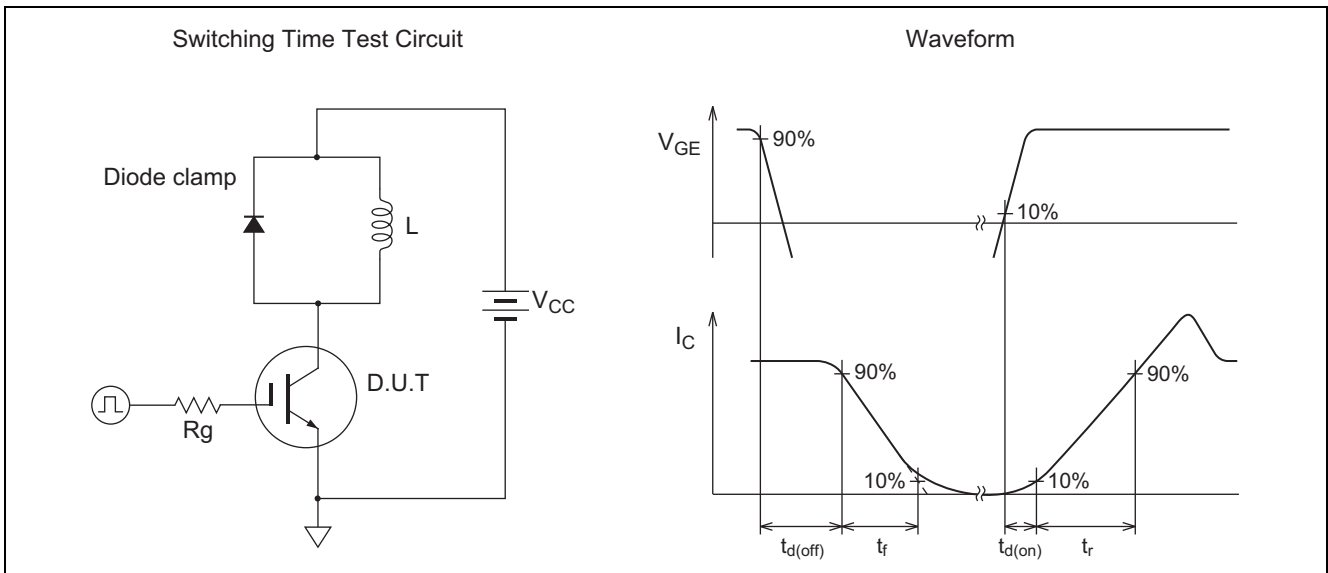
**Electrical Characteristics** (These data are an actual measurement value in a package.)

(Ta = 25°C)

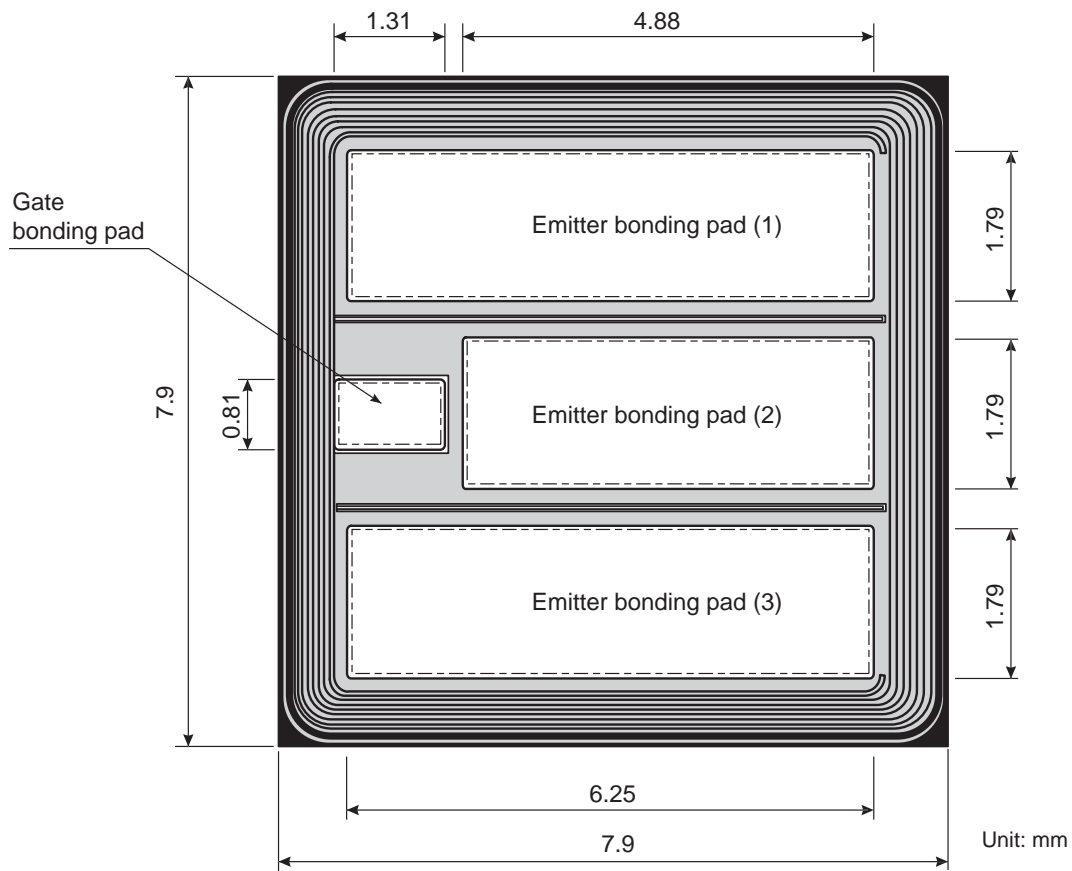
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	$I_{CES}$	—	—	1	$\mu\text{A}$	$V_{CE} = 1250 \text{ V}, V_{GE} = 0$
Gate to emitter leak current	$I_{GES}$	—	—	$\pm 1$	$\mu\text{A}$	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	5.0	—	6.8	V	$V_{CE} = 10 \text{ V}, I_C = 2.5 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.80	2.25	V	$I_C = 75 \text{ A}, V_{GE} = 15 \text{ V}$ <sup>Note1</sup>
Input capacitance	$C_{ies}$	—	7.8	—	nF	$V_{CE} = 25 \text{ V}$
Output capacitance	$C_{oes}$	—	0.23	—	nF	$V_{GE} = 0$
Reveres transfer capacitance	$C_{res}$	—	0.18	—	nF	$f = 1 \text{ MHz}$
Switching time	$t_{d(on)}$	—	50	—	ns	$V_{CC} = 600 \text{ V}$ <sup>Note2</sup>
	$t_r$	—	40	—	ns	$I_C = 75 \text{ A}$
	$t_{d(off)}$	—	350	—	ns	$V_{GE} = \pm 15 \text{ V}$
	$t_f$	—	140	—	ns	$R_g = 10 \Omega, T_j = 125 \text{ }^\circ\text{C}$ Inductive load
Short circuit withstand time	$t_{sc}$	10	—	—	$\mu\text{s}$	$V_{CC} \leq 720 \text{ V}, V_{GE} = 15 \text{ V}$ $T_j = 150 \text{ }^\circ\text{C}$

Notes: 1. Pulse test.

2. Switching time test circuit and waveform are shown below.



**Die Dimension**



Note 1.

Illustration	Definition
Part of white	Al pattern
Part of dotted line	Bonding area
Part of gray	Final passivation

Note 2. The back of the chip is processed with Au evaporation.

Note 3. Recognition, target and any other patterns which are not related to IGBT operation, may be changed without notice.

**Ordering Information**

Orderable Part Number
RJP1CS05DWA-80#W0
RJP1CS05DWT-80#X0

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