

# RJP1CS03DWT/RJP1CS03DWA

1250V - 30A - IGBT

Application: Inverter

R07DS0826EJ0001

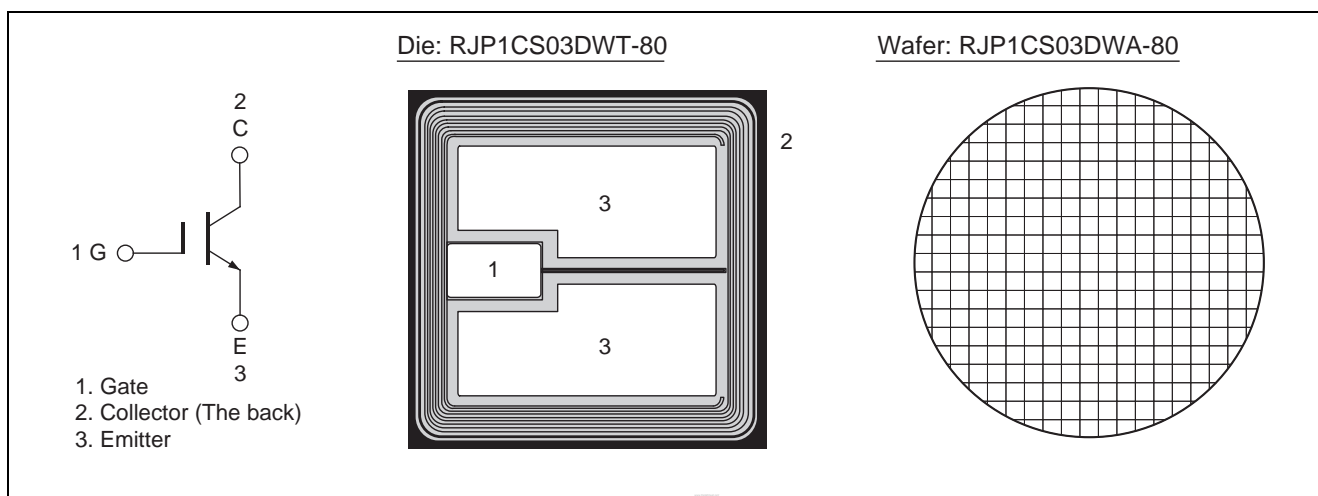
Rev.0.01

Jul 03, 2012

## Features

- Low collector to emitter saturation voltage  
 $V_{CE(sat)} = 1.8 \text{ V typ. (at } I_C = 30 \text{ A, } V_{GE} = 15 \text{ V, } T_a = 25^\circ\text{C)}$
- 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	$T_c = 25^\circ\text{C}$	$I_C$ <sup>Note1</sup>	60	A
	$T_c = 100^\circ\text{C}$	$I_C$ <sup>Note1</sup>	30	A
Junction temperature	$T_j$	150	$^\circ\text{C}$	

Notes: 1. This data is a regulated value in evaluation package.

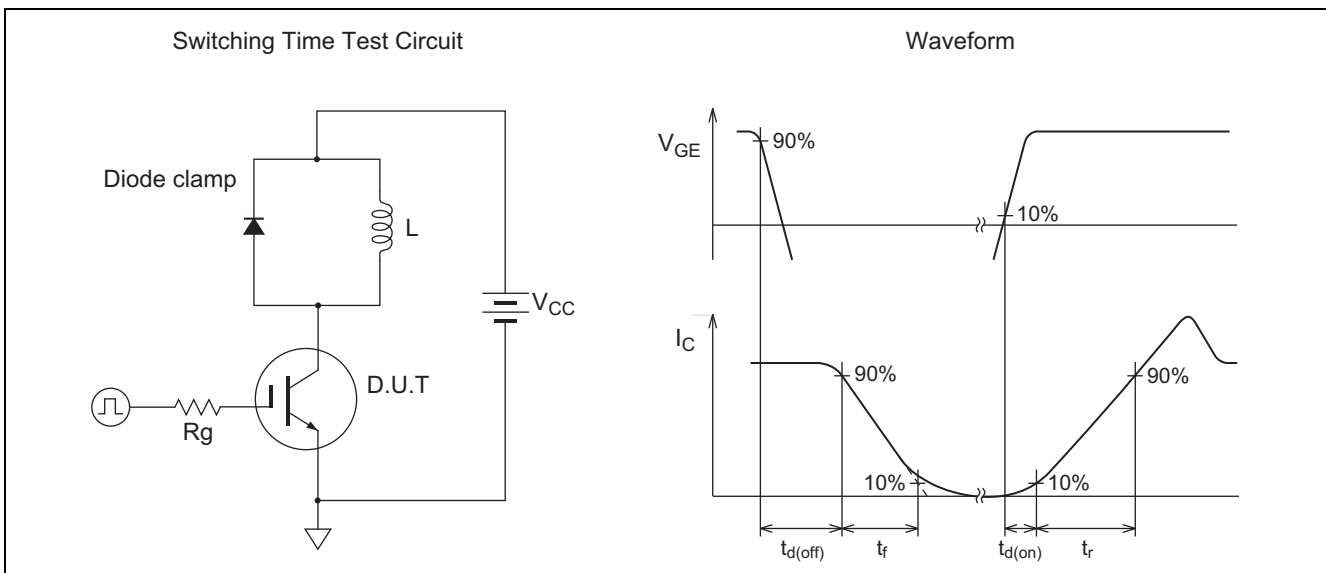
**Electrical Characteristics** (These data are an actual measurement value in evaluation package.)

(Ta = 25°C)

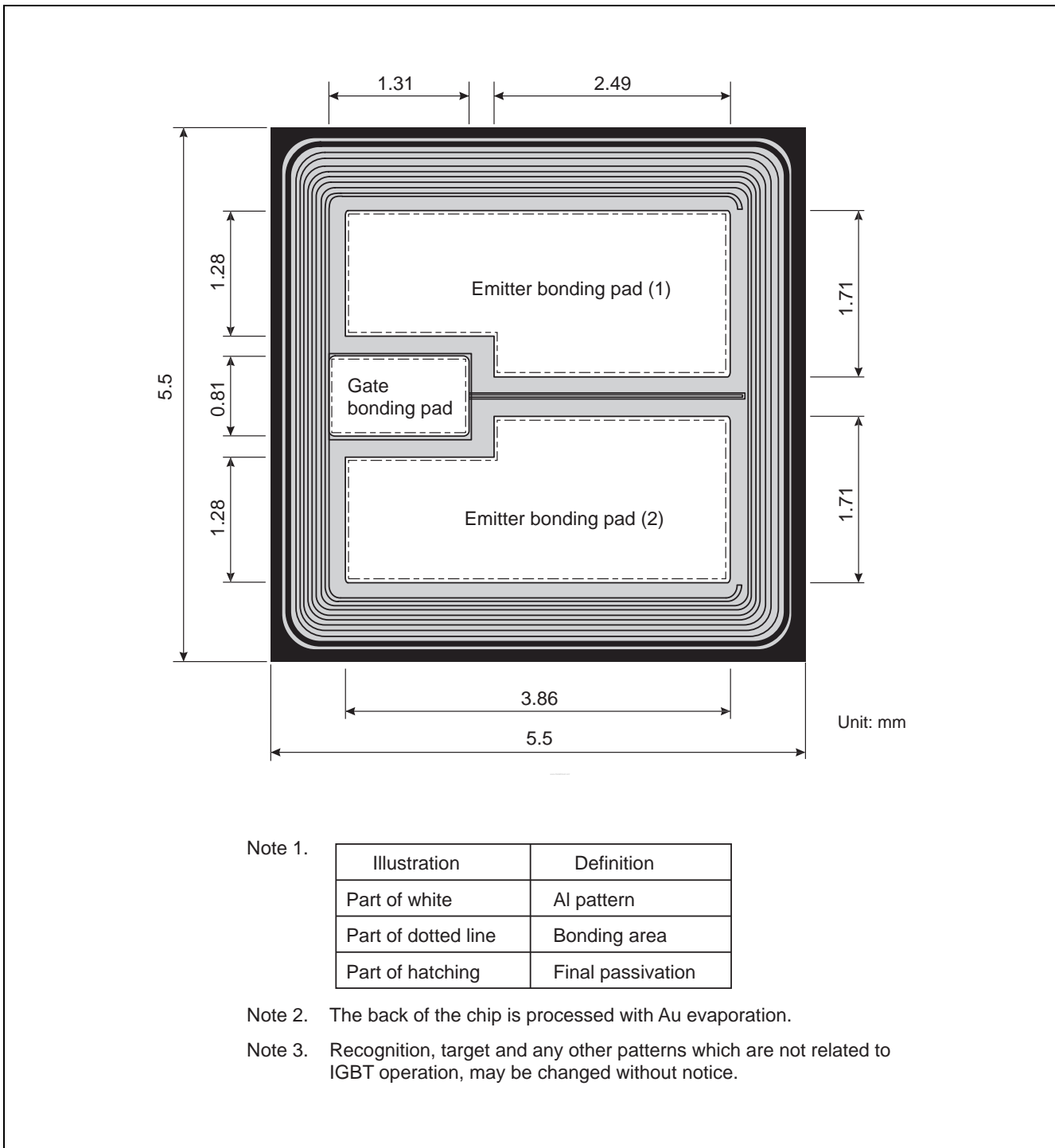
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	$I_{CES}$	—	—	1	$\mu\text{A}$	$V_{CE} = 1250 \text{ V}, V_{GE} = 0$
Gate to emitter leak current	$I_{GES}$	—	—	$\pm 1$	$\mu\text{A}$	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	5.0	—	6.8	V	$V_{CE} = 10 \text{ V}, I_C = 1.0 \text{ mA}$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.8	—	V	$I_C = 30 \text{ A}, V_{GE} = 15 \text{ V}$ <sup>Note2</sup>
Input capacitance	$C_{ies}$	—	3.2	—	nF	$V_{CE} = 25 \text{ V}$
Output capacitance	$C_{oes}$	—	0.10	—	nF	$V_{GE} = 0$
Reverse transfer capacitance	$C_{res}$	—	0.07	—	nF	$f = 1 \text{ MHz}$
Switching time	$t_{d(on)}$	—	20	—	ns	$V_{CC} = 600 \text{ V}$ <sup>Note3</sup> $I_C = 30 \text{ A}$ $V_{GE} = \pm 15 \text{ V}$ $R_g = 10 \Omega, T_j = 125 \text{ }^\circ\text{C}$ Inductive load
	$t_r$	—	20	—	ns	
	$t_{d(off)}$	—	240	—	ns	
	$t_f$	—	130	—	ns	
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: 2. Pulse test.

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



Die Dimension



Ordering Information

Orderable Part Number
RJP1CS03DWA-80#W0
RJP1CS03DWT-80#X0

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