

RJP1CS03DWT / RJP1CS03DWA

1250V - 30A - IGBT

Application: Inverter

R07DS0826EJ0300

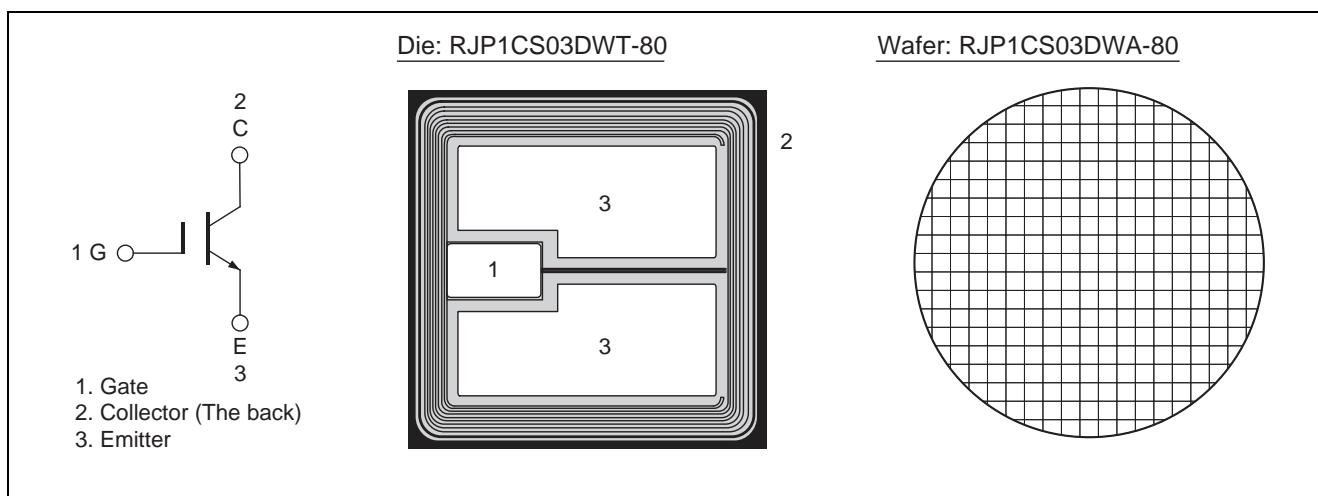
Rev.3.00

Oct 20, 2014

Features

- Low collector to emitter saturation voltage
 $V_{CE(sat)} = 1.8 \text{ V typ. (at } I_C = 30 \text{ A, } V_{GE} = 15 \text{ V, } T_C = 25^\circ\text{C)}$
- High speed switching
- Short circuit withstands time (10 $\mu\text{s min.}$)

Outline



Absolute Maximum Ratings

($T_C = 25^\circ\text{C}$ unless otherwise noted)

Item	Symbol	Ratings	Unit	
Collector to emitter voltage	V_{CES}	1250	V	
Gate to emitter voltage	V_{GES}	± 30	V	
Collector current	$T_C = 25^\circ\text{C}$	I_C	60	A
	$T_C = 100^\circ\text{C}$	I_C	30	A
Junction temperature	T_J	175 ^{Note1}	$^\circ\text{C}$	

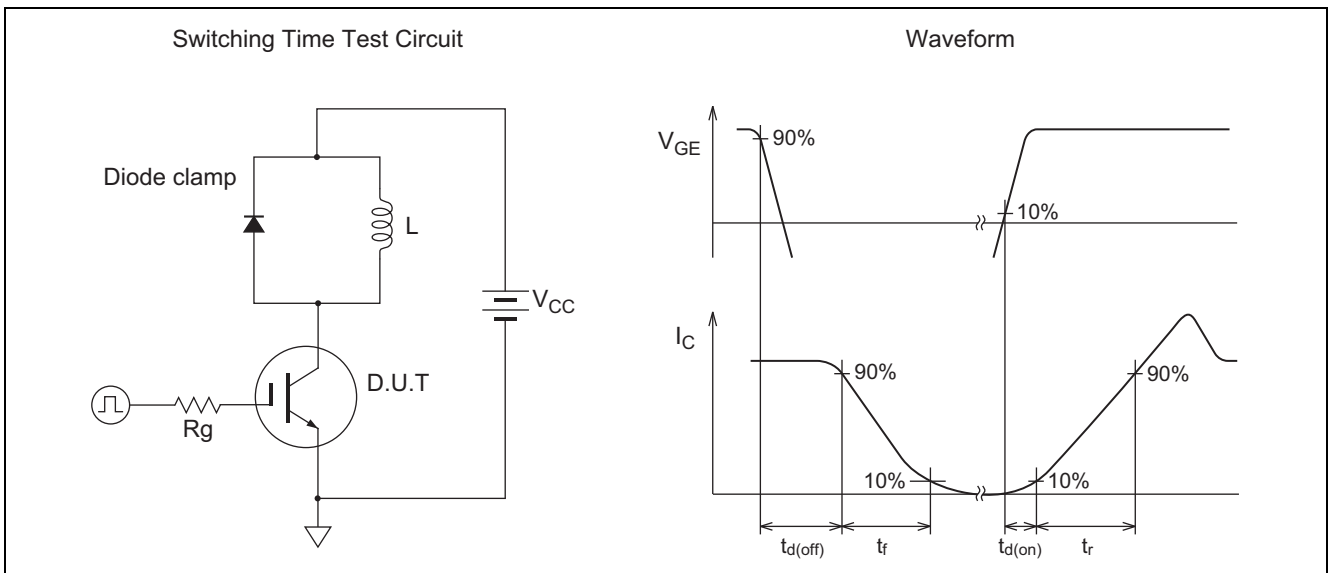
Notes: 1. Please use this device in the thermal conditions where the junction temperature does not exceed 175 $^\circ\text{C}$.
 IGBT Application Note is disclosed about reliability test and application condition up to $T_J=175^\circ\text{C}$.

Electrical Characteristics (Datas below are measured values on a package configuration.)

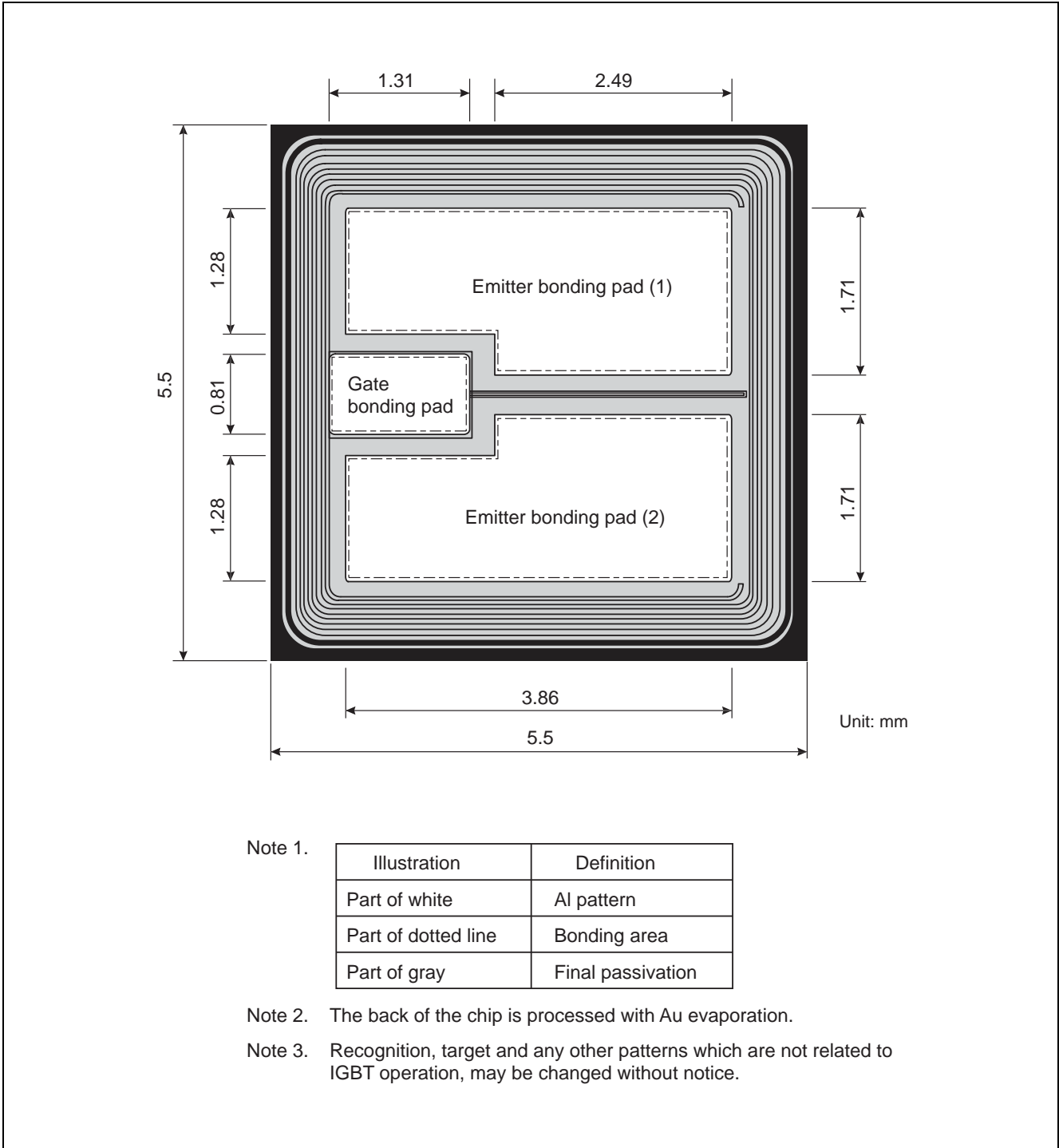
(Tc = 25°C unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I_{CES}	—	—	1	μA	$V_{CE} = 1250 \text{ V}, V_{GE} = 0$
Gate to emitter leak current	I_{GES}	—	—	± 1	μA	$V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$
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	$V_{CE(sat)}$	—	1.80	2.25	V	$I_C = 30 \text{ A}, V_{GE} = 15 \text{ V}$ ^{Note2}
Input capacitance	C_{ies}	—	3.2	—	nF	$V_{CE} = 25 \text{ V}$
Output capacitance	C_{oes}	—	0.10	—	nF	$V_{GE} = 0$
Reveres transfer capacitance	C_{res}	—	0.07	—	nF	$f = 1 \text{ MHz}$
Switching time ^{Note3}	$t_{d(on)}$	—	20	—	ns	$V_{CC} = 600 \text{ V}$ $I_C = 30 \text{ A}$ $V_{GE} = \pm 15 \text{ V}$ $R_g = 10 \Omega, T_c = 150 \text{ }^\circ\text{C}$ Inductive load
	t_r	—	20	—	ns	
	$t_{d(off)}$	—	250	—	ns	
	t_f	—	160	—	ns	
Short circuit withstand time ^{Note4}	t_{sc}	10	—	—	μs	$V_{CC} \leq 720 \text{ V}, V_{GE} = 15 \text{ V}$ $T_c = 150 \text{ }^\circ\text{C}$

- Notes: 2. Pulse test.
 3. Switching time test circuit and waveform are shown below.
 4. Verified by design.



Die Dimension



Ordering Information

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

