

RJP1CS05DWA / RJP1CS05DWS

1250V - 75A - IGBT

Application: Inverter

R07DS0828EJ0400

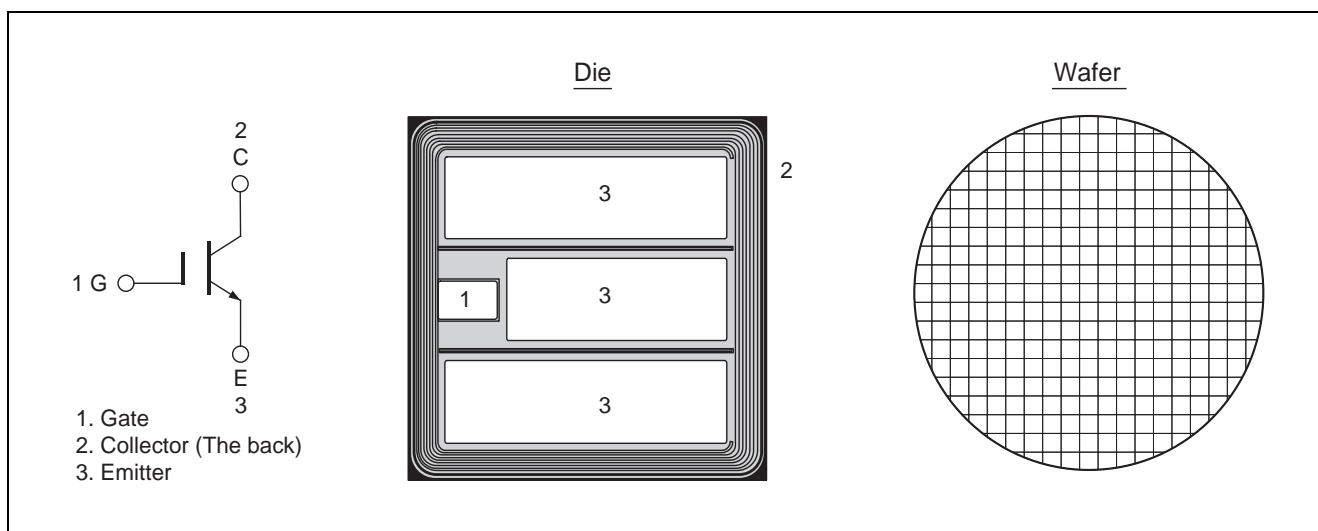
Rev.4.00

Sep 30, 2015

Features

- Low collector to emitter saturation voltage
 $V_{CE(sat)} = 1.8 \text{ V typ. (at } I_C = 75 \text{ A, } V_{GE} = 15 \text{ V, } T_C = 25^\circ\text{C)}$
- High speed switching
- Short circuit withstands time (10 μs 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	150	A
	$T_C = 100^\circ\text{C}$	I_C	75	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 $T_j = 175^\circ\text{C}$

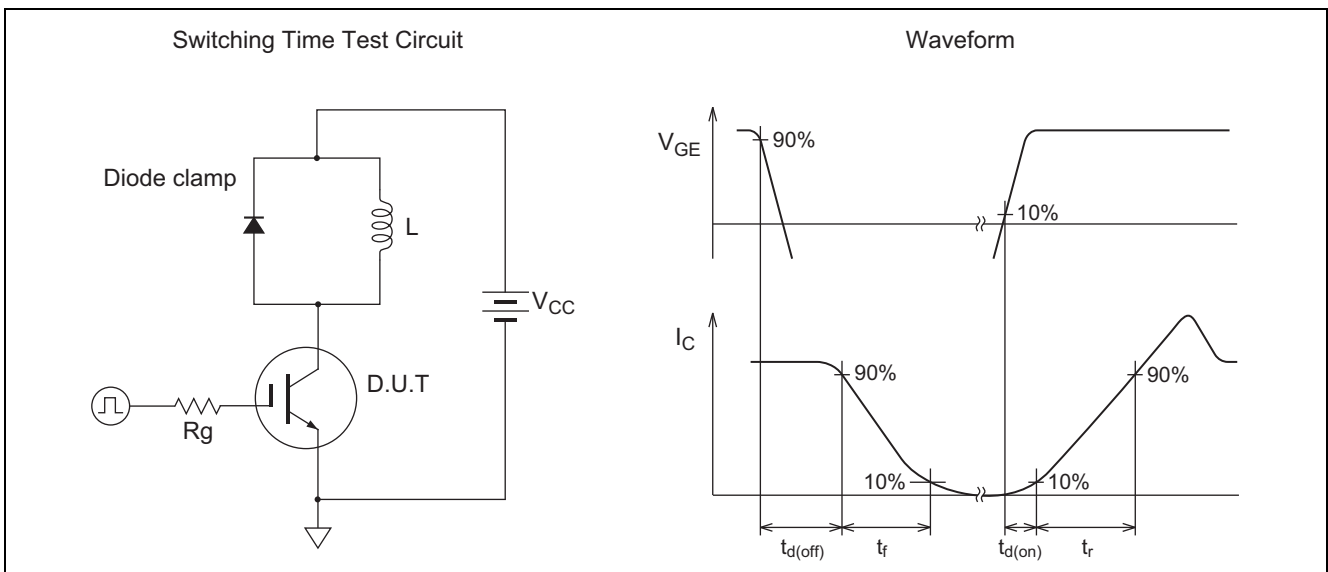
Electrical Characteristics (Datas below are measured values on a package configuration.)(T_c = 25°C unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I _{CES}	—	—	1	μA	V _{CE} = 1250 V, 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)}	5.0	—	6.8	V	V _{CE} = 10 V, I _C = 2.5 mA
Collector to emitter saturation voltage	V _{CE(sat)}	—	1.80	2.25	V	I _C = 75 A, V _{GE} = 15 V ^{Note2}
Input capacitance	C _{ies}	—	7.8	—	nF	V _{CE} = 25 V
Output capacitance	C _{oes}	—	0.23	—	nF	V _{GE} = 0
Reveres transfer capacitance	C _{res}	—	0.18	—	nF	f = 1 MHz
Total gate charge	Q _g	—	420	—	nC	V _{GE} = 15 V
Gate to emitter charge	Q _{ge}	—	70	—	nC	V _{CE} = 600 V
Gate to collector charge	Q _{gc}	—	225	—	nC	I _C = 75 A
Switching time ^{Note3}	t _{d(on)}	—	50	—	ns	V _{CC} = 600 V
	t _r	—	45	—	ns	I _C = 75 A
	t _{d(off)}	—	370	—	ns	V _{GE} = ±15 V
	t _f	—	170	—	ns	R _g = 10 Ω, T _c = 150 °C Inductive load
Short circuit withstand time ^{Note4}	t _{sc}	10	—	—	μs	V _{CC} ≤ 720 V, V _{GE} = 15 V T _c = 150 °C

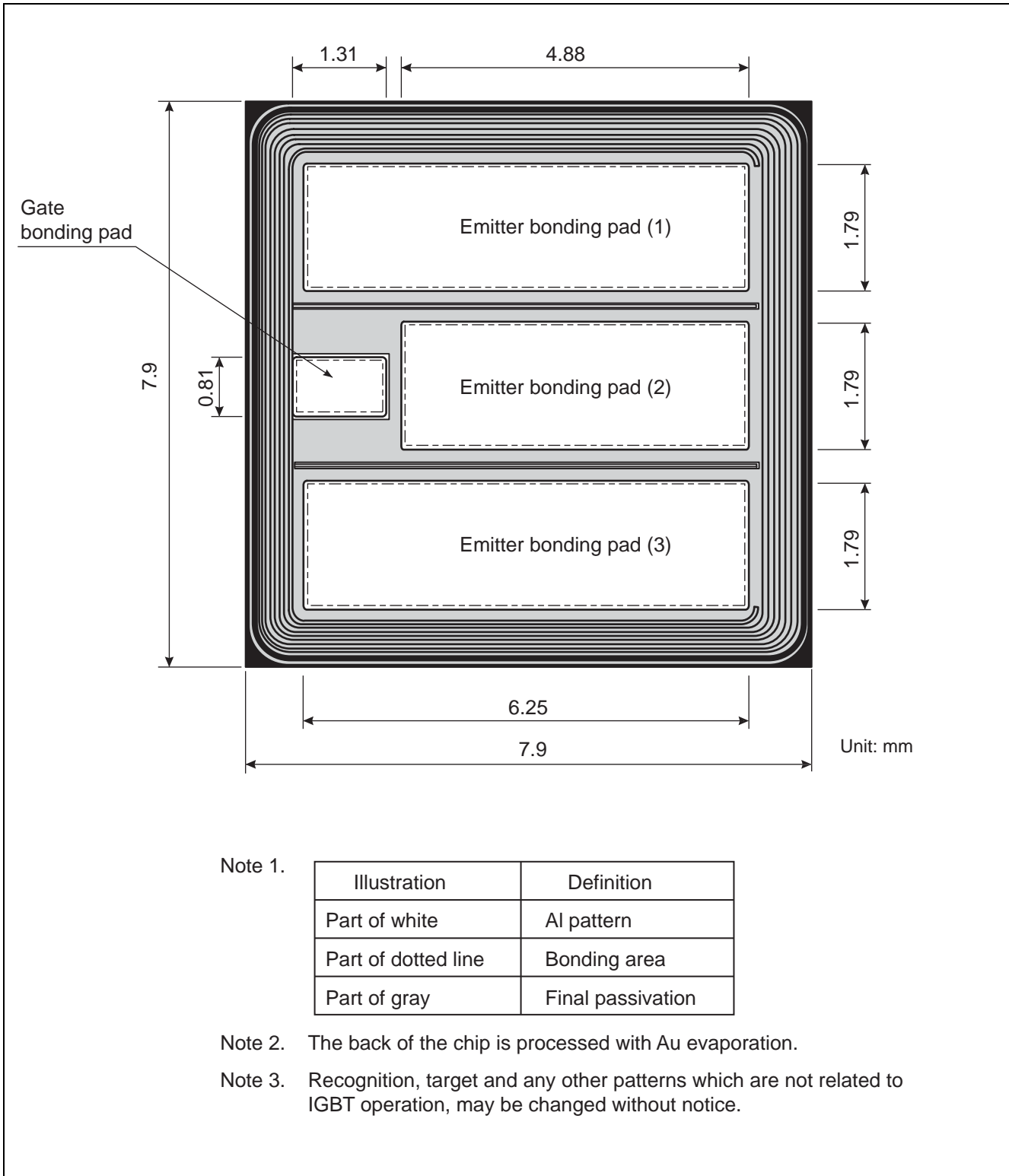
Notes: 2. Pulse test.

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

4. Verified by design.



Die Dimension



Ordering Information

Orderable Part Number	Shipment form
RJP1CS05DWA-80#W0	Unsaun wafer
RJP1CS05DWS-80#W0	Sawn wafer

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