

RJP65M06DWA / RJP65M06DWS

650V - 100A - IGBT

Application: Inverter

R07DS1314EJ0100

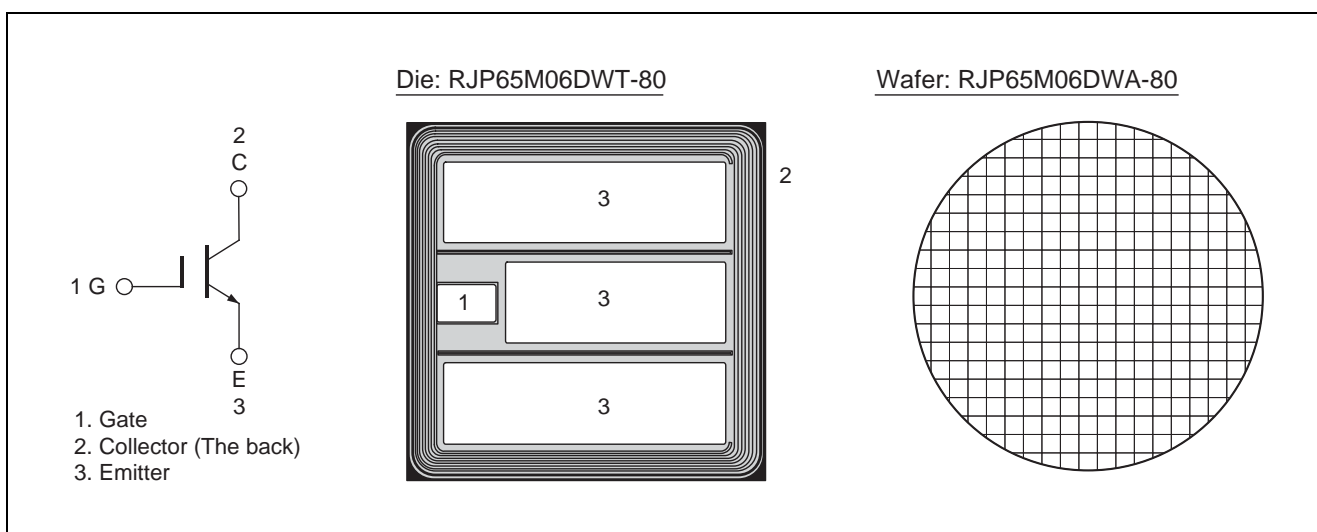
Rev.1.00

Nov. 06, 2015

Features

- Low collector to emitter saturation voltage
 $V_{CE(sat)} = 1.55 \text{ V typ. (at } I_C = 100 \text{ A, } V_{GE} = 15 \text{ V, } T_c = 25^\circ\text{C)}$
- High speed Switching
- Short circuit withstands time
 $t_{sc} = 5 \mu\text{s min. (at } V_{CC} \leq 400 \text{ V, } V_{GE} = 15 \text{ V, } T_j = 150 \text{ }^\circ\text{C)}$

Outline



Absolute Maximum Ratings

($T_c = 25^\circ\text{C}$ unless otherwise described)

Item	Symbol	Ratings	Unit	
Collector to emitter voltage	V_{CES}	650	V	
Gate to emitter voltage	V_{GES}	± 30	V	
Collector current	$T_c = 25^\circ\text{C}$	I_C ^{Note1}	200	A
	$T_c = 100^\circ\text{C}$	I_C ^{Note1}	100	A
Junction temperature	T_j	175 ^{NOTE1}	$^\circ\text{C}$	

Note 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 (These data are actual measurement values in an evaluation package.)

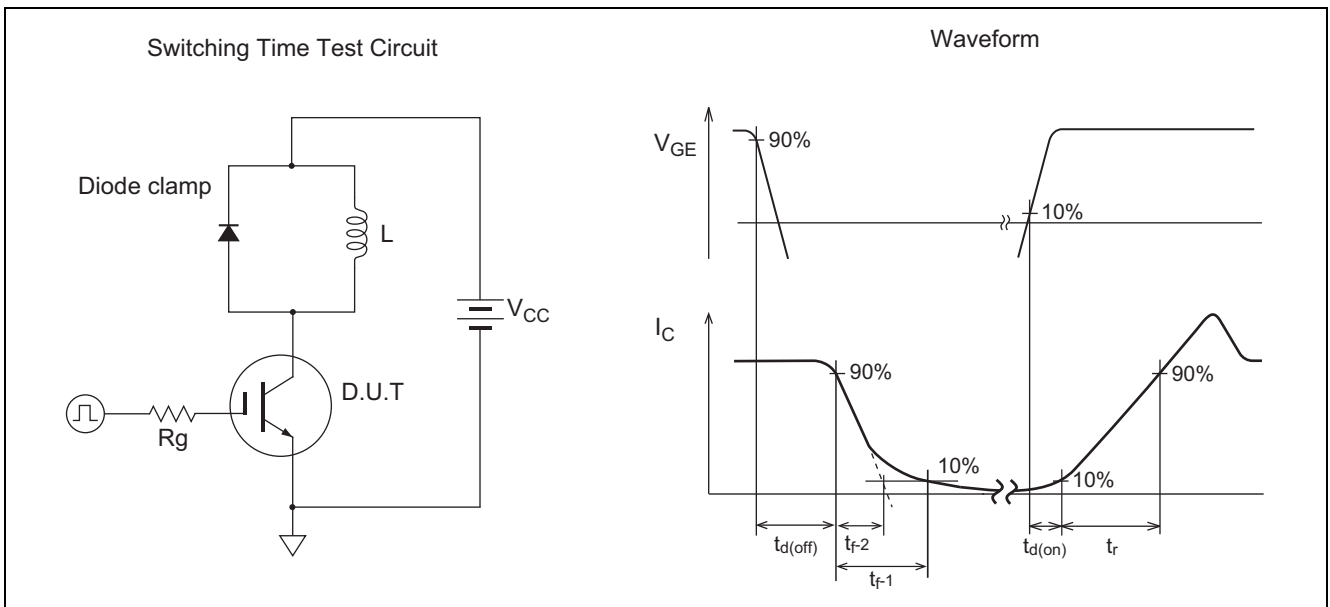
(Tc = 25°C unless otherwise described)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I_{CES}	—	—	1	μA	$V_{CE} = 650 V, V_{GE} = 0$
Gate to emitter leak current	I_{GES}	—	—	± 1	μA	$V_{GE} = \pm 30 V, V_{CE} = 0$
Gate to emitter cutoff voltage	$V_{GE(off)}$	4.5	—	6.8	V	$V_{CE} = 10 V, I_C = 2 mA$
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.55	2.05	V	$I_C = 100A, V_{GE} = 15 V$ ^{Note2}
Input capacitance	C_{ies}	—	6600	—	pF	$V_{CE} = 25 V$
Output capacitance	C_{oes}	—	270	—	pF	$V_{GE} = 0$
Reverse transfer capacitance	C_{res}	—	210	—	pF	$f = 1 MHz$
Total gate charge	Q_g	—	410	—	nC	$V_{GE} = 15 V$
Gate to emitter charge	Q_{ge}	—	65	—	nC	$V_{CE} = 400 V$
Gate to collector charge	Q_{gc}	—	230	—	nC	$I_C = 100 A$
Switching time ^{Note3}	$t_{d(on)}$	—	40	—	ns	$V_{CC} = 400 V$
	t_r	—	70	—	ns	$I_C = 100 A$
	$t_{d(off)}$	—	270	—	ns	$V_{GE} = 15 V$
	t_{f-1}	—	70	—	ns	$R_g = 10 \Omega, T_j = 150 \text{ }^\circ C$
	t_{f-2}	—	50	—	ns	Inductive load
Short circuit withstand time ^{Note4}	t_{sc}	5	—	—	μs	$V_{CC} \leq 400 V, V_{GE} = 15 V$ $T_C = 150 \text{ }^\circ C$

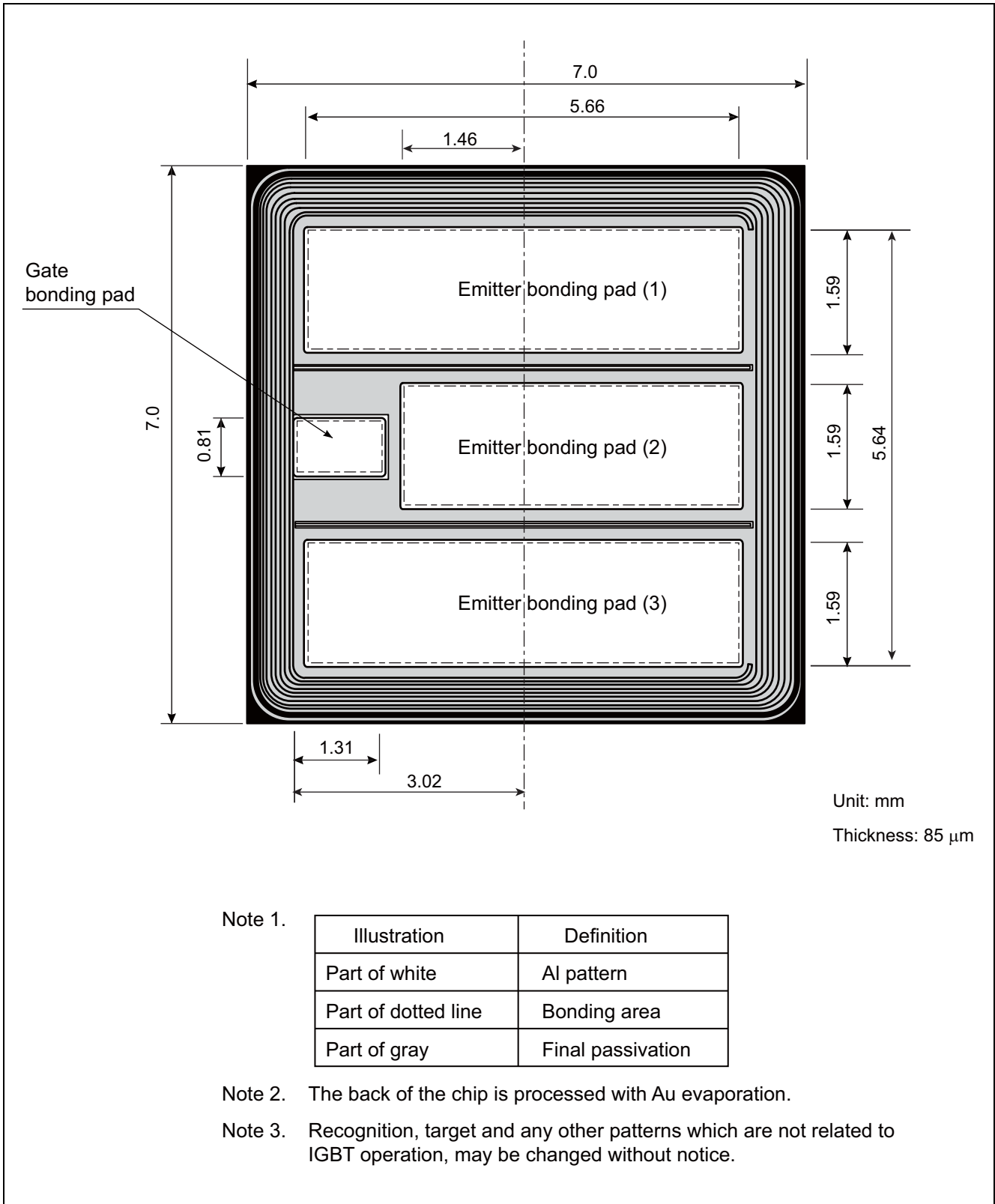
Notes: 2. Pulse test.

3. Switching time test circuit and symbol definitions of switching time are shown below.

4. Verified by design.



Die Dimension



Ordering Information

Orderable Part Number	Shipment form
RJP65M06DWA-80#W0	Unsaun wafer
RJP65M06DWS-80#W0	Saun wafer

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