RJP65S03DWT/RJP65S03DWA

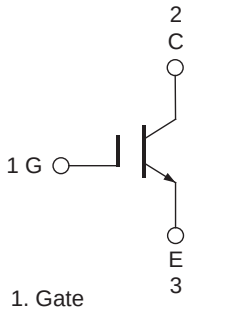
650V - 30A - IGBT
Application: Inverter

R07DS0820EJ0001
Rev.0.01
Jul 05, 2012

Features

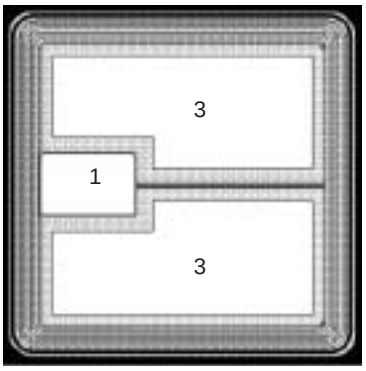
- Low collector to emitter saturation voltage
  $V_{CE(sat)}$ = 1.6 V typ. (at I_C = 30 A, V_{GE} = 15 V, Ta = 25°C)
- High speed Switching
- Short circuit withstands time (10 μs min.)

Outline

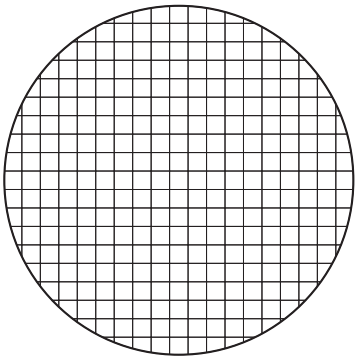


1. Gate
2. Collector (The back)
3. Emitter

Die: RJP65S03DWT-80



Wafer: RJP65S03DWA-80



Absolute Maximum Ratings

(Ta = 25°C)

Item		Symbol	Ratings	Unit
Collector to emitter voltage		V_{CES}	650	V
Gate to emitter voltage		V_{GES}	±30	V
Collector current	Tc = 25°C	I_C Note1	60	A
	Tc = 100°C	I_C Note1	30	A
Junction temperature		Tj	150	°C

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

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

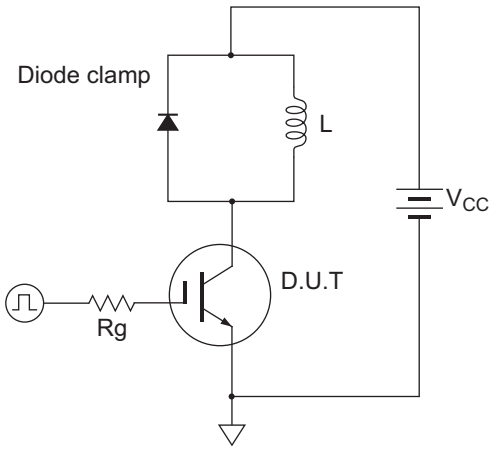
(Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Zero gate voltage collector current	I_{CES}	—	—	1	μA	V_{CE} = 650 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 = 0.6mA
Collector to emitter saturation voltage	$V_{CE(sat)}$	—	1.60	1.95	V	I_C = 30 A, V_{GE} = 15 V Note2
Input capacitance	Cies	—	2.8	—	nF	V_{CE} = 25 V V_{GE} = 0 f = 1 MHz
Output capacitance	Coes	—	0.13	—	nF	
Reveres transfer capacitance	Cres	—	0.09	—	nF	
Switching time	$t_{d(on)}$	—	20	—	ns	V_{CC} = 300 V Note3 I_C = 30 A V_{GE} =±15 V Rg = 10 Ω, Tj = 125 °C Inductive load
	t_r	—	20	—	ns	
	$t_{d(off)}$	—	170	—	ns	
	t_f	—	80	—	ns	
Short circuit withstand time	t_{sc}	10	—	—	μs	V_{CC} ≤ 360 V , V_{GE} = 15 V Tj = 150 °C

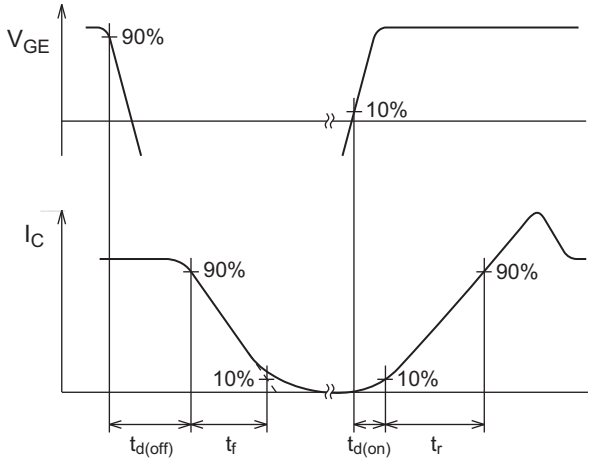
Notes: 2. Pulse test.

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

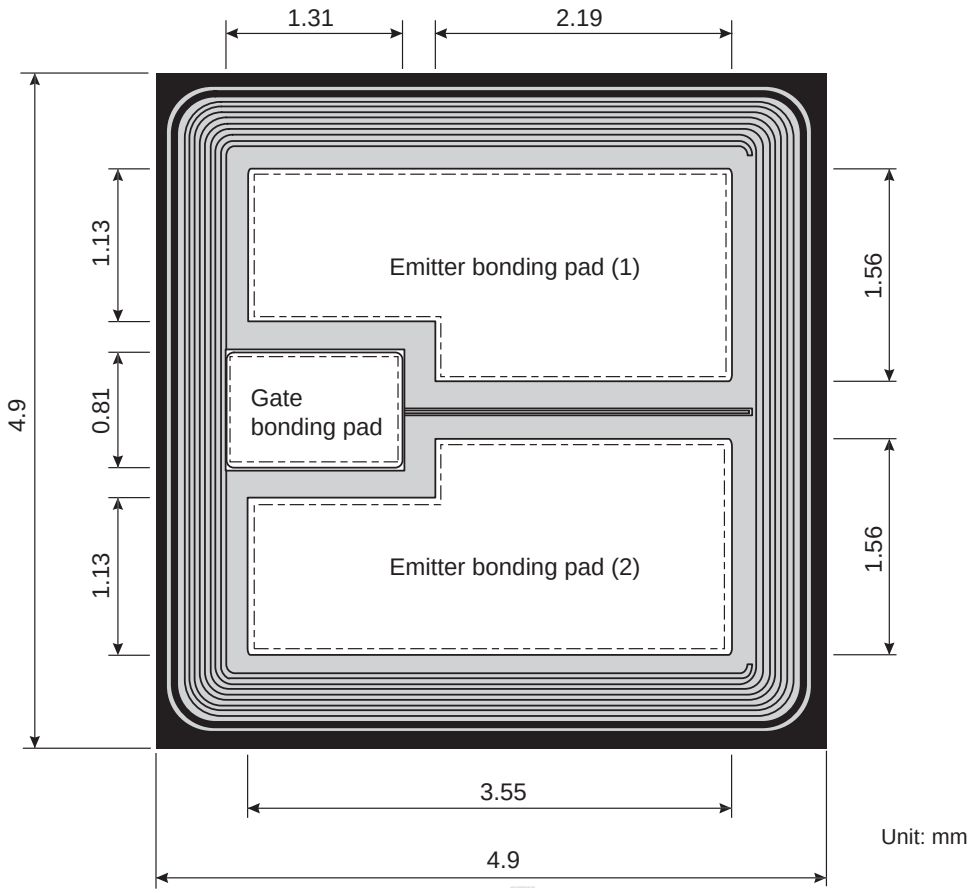
Switching Time Test Circuit



Waveform



Die Dimension



Note 1.

Illustration	Definition
Part of white	Al pattern
Part of dotted line	Bonding area
Part of hatching	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 Diode operation, may be changed without notice.

Ordering Information

Orderable Part Number
RJP65S03DWA-80#W0
RJP65S03DWT-80#X0

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