

July 11, 2012

Product Specifications of the 7th-Generation IGBTs

1. 650V-IGBT RJH/RJP65S Series

- Items common to all product versions
 - Rated junction temperature (T_j): +150°C
 - Collector to emitter voltage rating (V_{CES}): 650 V
 - Gate to emitter voltage rating (V_{GES}): ±30 V
 - Collector to emitter saturation voltage (V_{CE(sat)}): 1.6 V (typ) (T_a = 25°C, I_C = Rating current, V_{GE} = 15 V)
 - Gate-emitter threshold voltage (V_{GE(OFF)}): 5.0 V to 6.8 V
 - Switching fall time (t_f): 80 ns (V_{CC} = 300 V, V_{GE} = 15 V, T_j = 125°C, I_C = Rating current)
 - Short circuit withstand time (t_{sc}): 10 μs (min) (V_{CC} = 360 V, V_{GE} = 15 V, T_j = 150°C)
 - Shipping form: wafer/chip *Only RJH65S04DPQ-A0 is in TO-247A package

- RJH65S04DPQ-A0
 - TO-247A Package, Built-in FRD
 - Collector to emitter current rating: 50 A (T_c = 100°C) 100 A (T_c = 25°C)

- RJP65S03DWA/DWT
 - Collector to emitter current rating: 30 A (T_c = 100°C) 60 A (T_c = 25°C)

- RJP65S04DWA/DWT
 - Collector to emitter current rating: 50 A (T_c = 100°C) 100 A (T_c = 25°C)

- RJP65S05DWA/DWT
 - Collector to emitter current rating: 75 A (T_c = 100°C) 150 A (T_c = 25°C)

- RJP65S06DWA/DWT
 - Collector to emitter current rating: 100 A (T_c = 100°C) 200 A (T_c = 25°C)

- RJP65S07DWA/DWT
 - Collector to emitter current rating: 150 A (T_c = 100°C) 300 A (T_c = 25°C)

- RJP65S08DWA/DWT
 - Collector to emitter current rating: 200 A ($T_c = 100^\circ\text{C}$) 400 A ($T_c = 25^\circ\text{C}$)

2. 1250V-IGBT RJP1CS Series

- Items common to all product versions
 - Rated junction temperature (T_j): $+150^\circ\text{C}$
 - Collector to Emitter voltage rating (V_{CES}): 1250 V
 - Gate to emitter voltage rating (V_{GES}): ± 30 V
 - Collector to emitter saturation voltage ($V_{CE(sat)}$): 1.8 V (typ) ($T_a = 25^\circ\text{C}$, $I_C =$ Rating current, $V_{GE} = 15$ V)
 - Gate-emitter threshold voltage ($V_{GE(OFF)}$): 5.0 V to 6.8 V
 - Switching fall time (tf): 130 ns ($V_{CC} = 600$ V, $V_{GE} = 15$ V, $T_j = 125^\circ\text{C}$, $I_C =$ Rating current)
 - Short circuit withstand time (tsc): 10 μs (min) ($V_{CC} = 720$ V, $V_{GE} = 15$ V, $T_j = 150^\circ\text{C}$)
 - Shipping form: wafer/chip
- RJP1CS03DWA/DWT
 - Collector to emitter current rating: 30 A ($T_c = 100^\circ\text{C}$) 60 A ($T_c = 25^\circ\text{C}$)
- RJP1CS04DWA/DWT
 - Collector to emitter current rating: 50 A ($T_c = 100^\circ\text{C}$) 100 A ($T_c = 25^\circ\text{C}$)
- RJP1CS05DWA/DWT
 - Collector to emitter current rating: 75 A ($T_c = 100^\circ\text{C}$) 150 A ($T_c = 25^\circ\text{C}$)
- RJP1CS06DWA/DWT
 - Collector to emitter current rating: 100 A ($T_c = 100^\circ\text{C}$) 200 A ($T_c = 25^\circ\text{C}$)
- RJP1CS07DWA/DWT
 - Collector to emitter current rating: 150 A ($T_c = 100^\circ\text{C}$) 300 A ($T_c = 25^\circ\text{C}$)
- RJP1CS08DWA/DWT
 - Collector to emitter current rating: 200 A ($T_c = 100^\circ\text{C}$) 400 A ($T_c = 25^\circ\text{C}$)

Reference Diagram

Comparison of IGBTs' efficiency among three generations

