

RJH6087BDPK

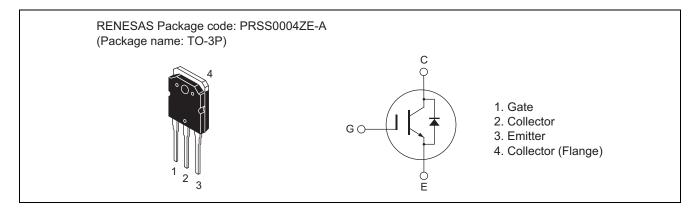
Silicon N Channel IGBT High Speed Power Switching

R07DS0389EJ0100 Rev.1.00 May 11, 2011

Features

- Ultra high speed switching t_f = 55 ns typ. (at I_C = 30 A, V_{CC} = 300 V, V_{GE} = 15 V, Rg = 5 Ω , Inductive Load)
- Low on-state voltage
- Fast recovery diode

Outline



Absolute Maximum Ratings

 $(Tc = 25^{\circ}C)$

| Item | Symbol | Ratings | Unit |
|---|------------------------------|-------------|--------|
| Collector to emitter voltage | V _{CES} | 600 | V |
| Gate to emitter voltage | V _{GES} | ±30 | V |
| Collector current | Ic | 50 | А |
| Collector peak current | ic(peak) Note1 | 100 | А |
| Collector to emitter diode forward peak current | i _{DF} (peak) Note2 | 100 | A |
| Collector dissipation | Pc | 223.2 | W |
| Junction to case thermal impedance (IGBT) | θј-с | 0.56 | °C / W |
| Junction temperature | Tj | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Notes: 1. Pulse width limited by safe operating area.

2. Pulse width limited by maximum junction temperature.

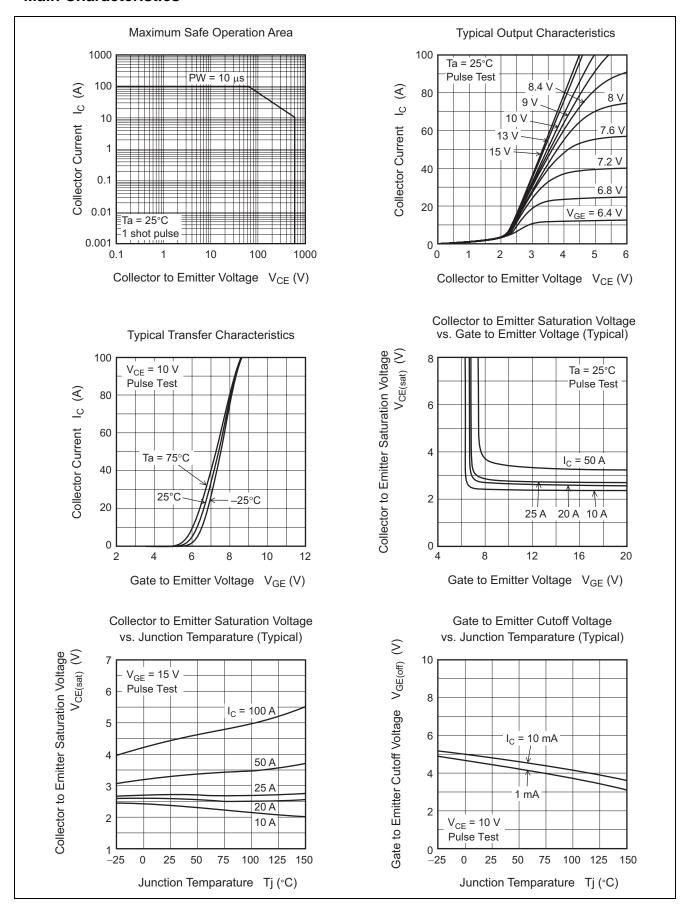
Electrical Characteristics

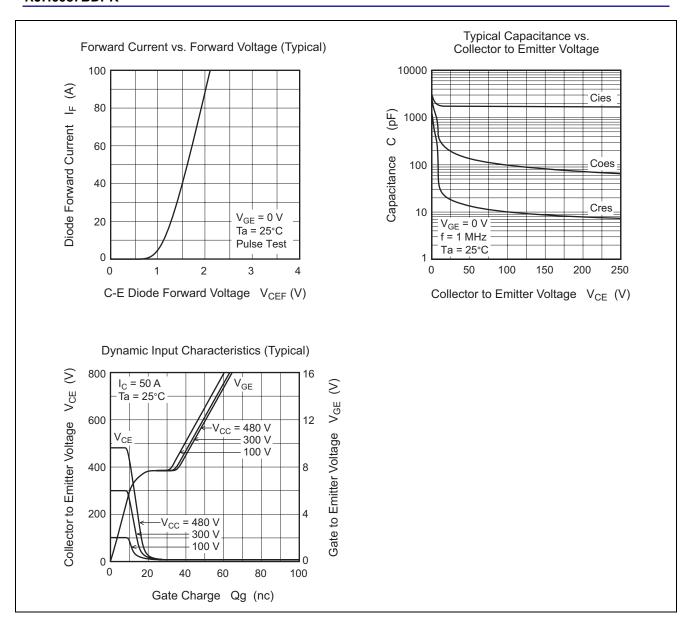
 $(Ta = 25^{\circ}C)$

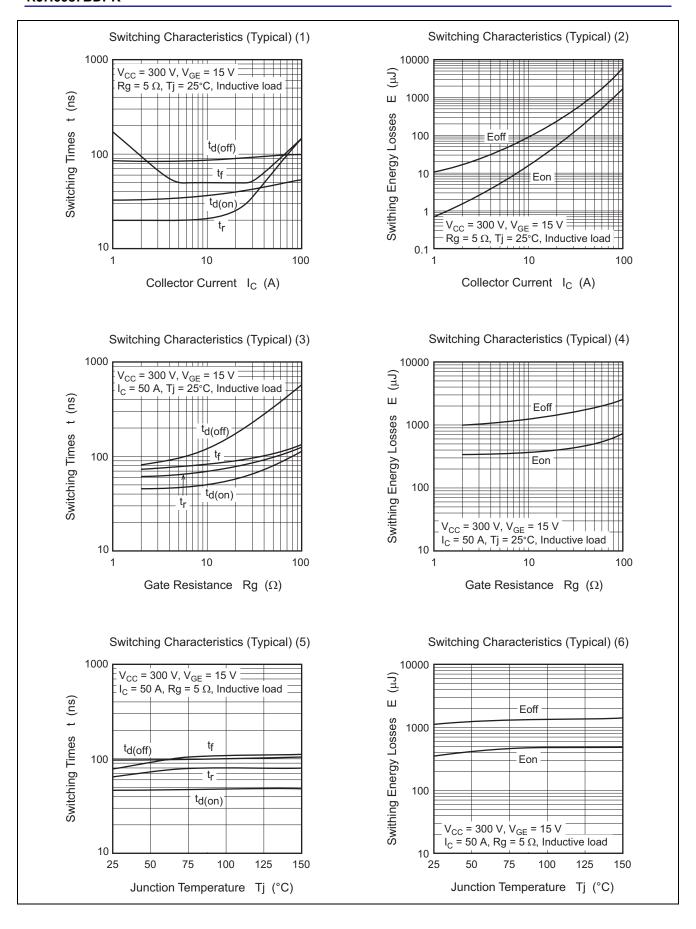
| Item | Symbol | Min | Тур | Max | Unit | Test Conditions |
|---|----------------------|-----|------|-----|------|--|
| Zero gate voltage collector current | I _{CES} | _ | _ | 10 | μΑ | $V_{CE} = 600 \text{ V}, V_{GE} = 0$ |
| Gate to emitter leak current | I _{GES} | _ | _ | ±1 | μΑ | $V_{GE} = \pm 30 \text{ V}, V_{CE} = 0$ |
| Gate to emitter cutoff voltage | $V_{\text{GE(off)}}$ | 3.0 | _ | 5.5 | V | $V_{CE} = 10 \text{ V}, I_{C} = 1 \text{ mA}$ |
| Collector to emitter saturation voltage | V _{CE(sat)} | | 2.65 | 3.5 | V | $I_C = 25 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$ |
| | V _{CE(sat)} | | 3.2 | _ | V | $I_C = 50 \text{ A}, V_{GE} = 15 \text{ V}^{\text{Note3}}$ |
| Input capacitance | Cies | | 1800 | _ | pF | V _{CE} = 25 V |
| Output capacitance | Coes | | 200 | _ | pF | $V_{GE} = 0$ |
| Reveres transfer capacitance | Cres | _ | 16 | _ | pF | f = 1 MHz |
| Switching time | t _{d(on)} | _ | 45 | _ | ns | I _C = 30 A |
| | t _r | _ | 35 | _ | ns | $V_{CC} = 300 \text{ V}, V_{GE} = 15 \text{ V}$ |
| | t _{d(off)} | _ | 95 | _ | ns | $Rg = 5 \Omega$ |
| | t _f | _ | 55 | _ | ns | Inductive Load |
| C-E diode Forward voltage | V _{ECF1} | _ | 1.4 | 1.9 | V | $I_F = 30 \text{ A}^{\text{Note3}}$ |
| C-E diode reverse recovery time | t _{rr} | _ | 100 | _ | ns | I _F = 30 A |
| | | | | | | $di_F/dt = 100 A/\mu s$ |

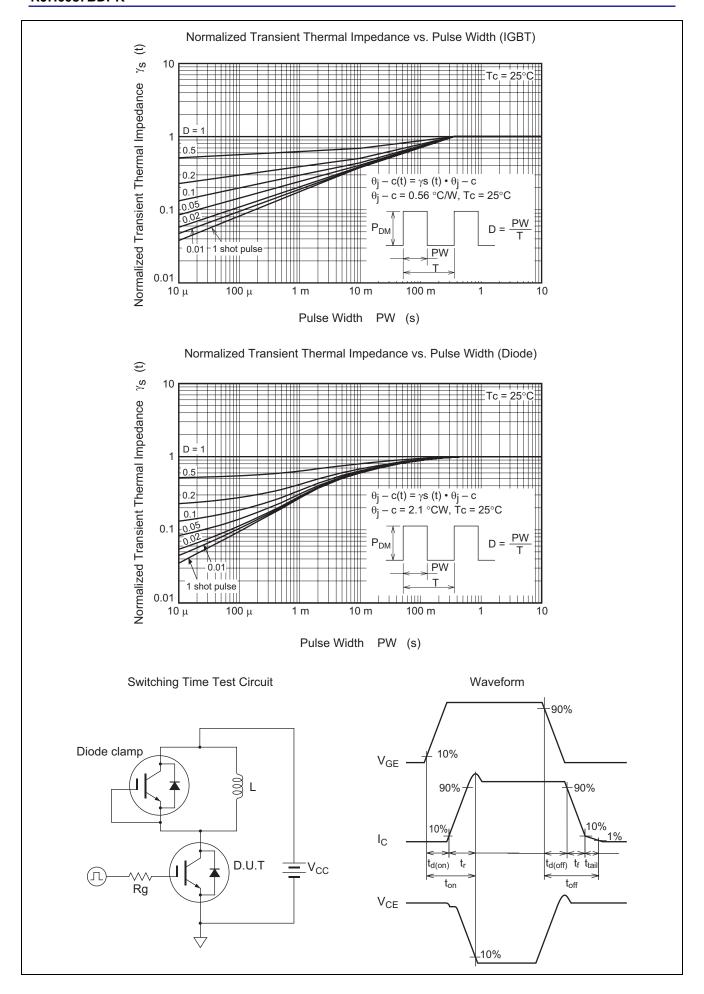
Notes: 3. Pulse test

Main Characteristics

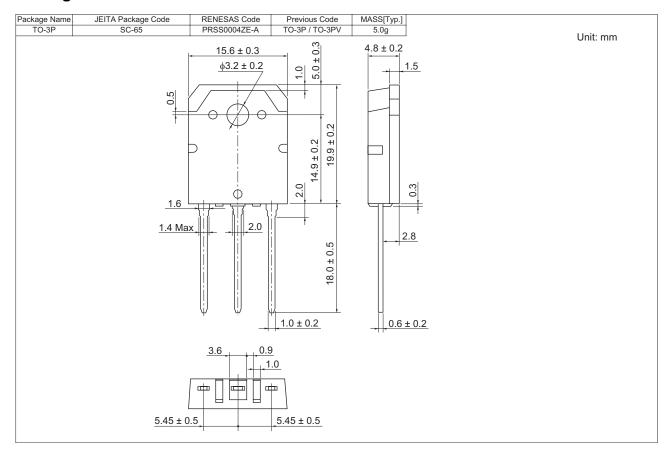








Package Dimensions



Ordering Information

| Orderable Part Number | Quantity | Shipping Container |
|-----------------------|----------|--------------------|
| RJH6087BDPK-00-T0 | 360 pcs | Box (Tube) |

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