

RJP6085DPK

Silicon N Channel IGBT
High Speed Power Switching

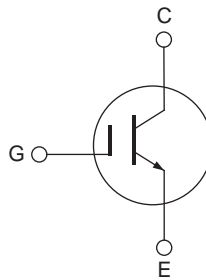
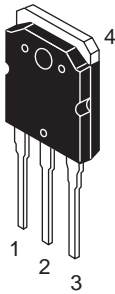
REJ03G1862-0100
Rev.1.00
Nov 09, 2009

Features

- High speed switching
- Low collector to emitter saturation voltage

Outline

RENESAS Package code: PRSS0004ZE-A
(Package name: TO-3P)



1. Gate
2. Collector
3. Emitter
4. Collector (Flange)

Absolute Maximum Ratings

(Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|------------------------------------|---------------------------------|-------------|------|
| Collector to Emitter voltage | V_{CES} | 600 | V |
| Gate to Emitter voltage | V_{GES} | ±30 | V |
| Collector current | I_C | 40 | A |
| Collector peak current | $I_{C(peak)}$ ^{Note1} | 80 | A |
| Collector dissipation | P_C ^{Note2} | 178.5 | W |
| Junction to case thermal impedance | θ_{j-c} ^{Note2} | 0.7 | °C/W |
| Junction temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

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

2. Value at Tc = 25°C

Electrical Characteristics

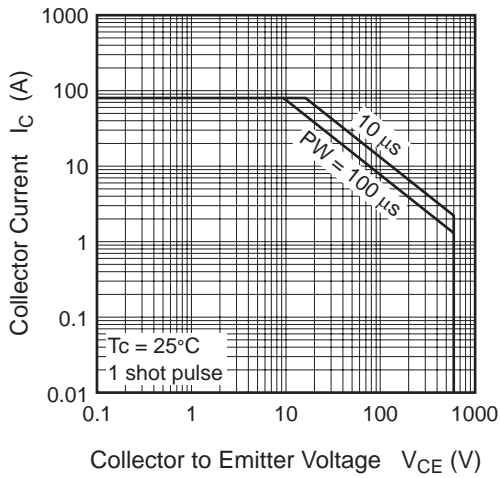
(Ta = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|---|---------------|-----|------|---------|---------------|--|
| Zero gate voltage collector current | I_{CES} | — | — | 10 | μA | $V_{CE} = 600\text{V}, V_{GE} = 0\text{V}$ |
| Gate to emitter leak current | I_{GES} | — | — | ± 1 | μA | $V_{GE} = \pm 30\text{V}, V_{CE} = 0\text{V}$ |
| Gate to emitter cutoff voltage | $V_{GE(off)}$ | 4 | — | 6 | V | $V_{CE} = 10\text{V}, I_C = 1\text{mA}$ |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | — | 2.65 | 3.5 | V | $I_C = 40\text{A}, V_{GE} = 15\text{V}$ ^{Note3} |
| Input capacitance | C_{ies} | — | 1150 | — | pF | $V_{CE} = 25\text{V}$ |
| Output capacitance | C_{oes} | — | 105 | — | pF | $V_{GE} = 0\text{V}$ |
| Reveres transfer capacitance | C_{res} | — | 12 | — | pF | $f = 1\text{MHz}$ |
| Switching time | $t_{d(on)}$ | — | 30 | — | ns | $I_C = 40\text{A}, \text{Resistive Load}$ |
| | t_r | — | 60 | — | ns | $V_{CC} = 300\text{V}$ |
| | $t_{d(off)}$ | — | 60 | — | ns | $V_{GE} = 15\text{V}$ |
| | t_f | — | 40 | — | ns | $R_g = 5\ \Omega$ |

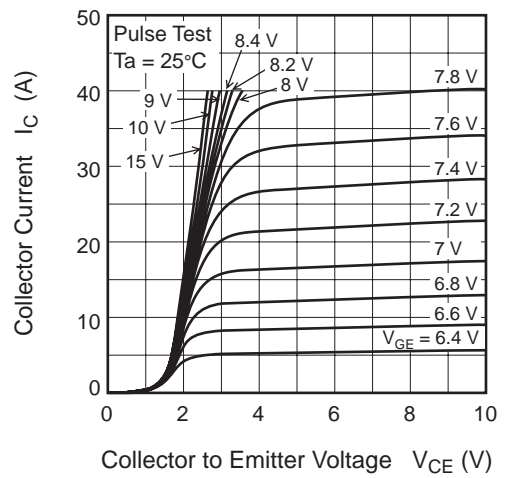
Notes: 3. Pulse test

Main Characteristics

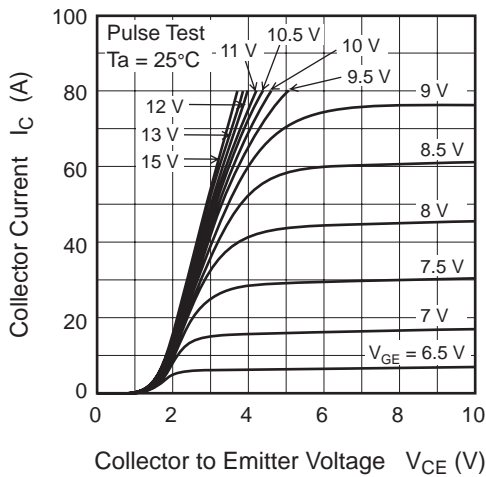
Maximum Safe Operation Area



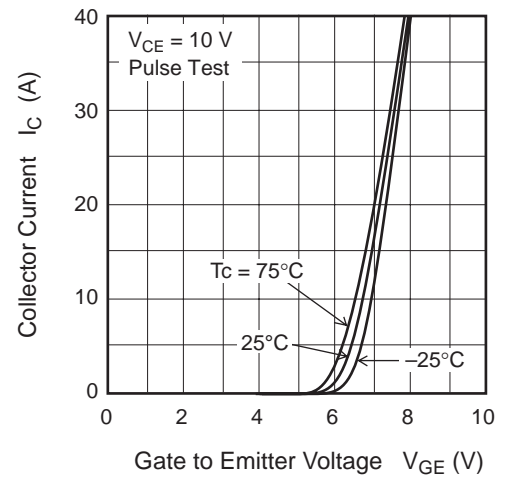
Typical Output Characteristics (1)



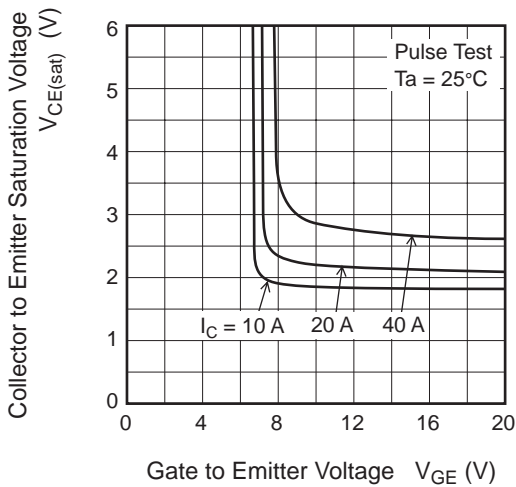
Typical Output Characteristics (2)



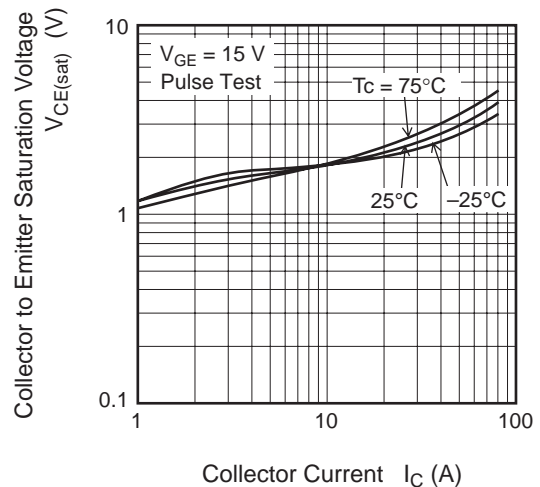
Typical Transfer Characteristics



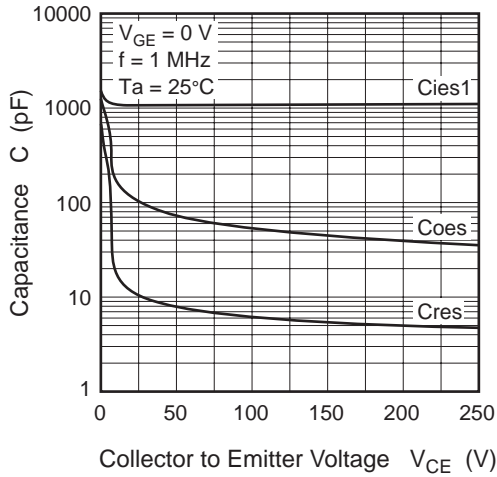
Collector to Emitter Saturation Voltage vs. Gate to Emitter Voltage (Typical)



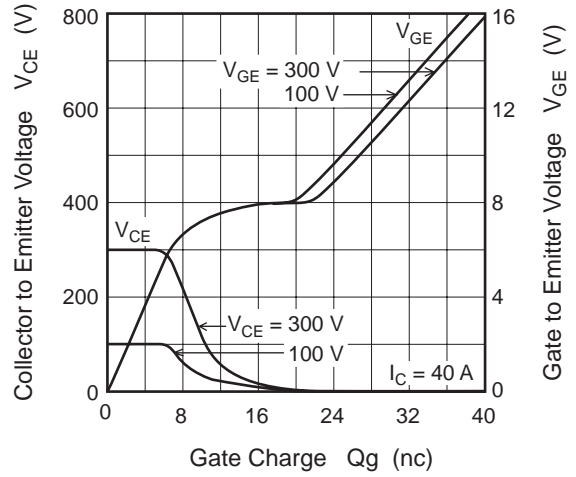
Collector to Emitter Saturation Voltage vs. Collector Current (Typical)



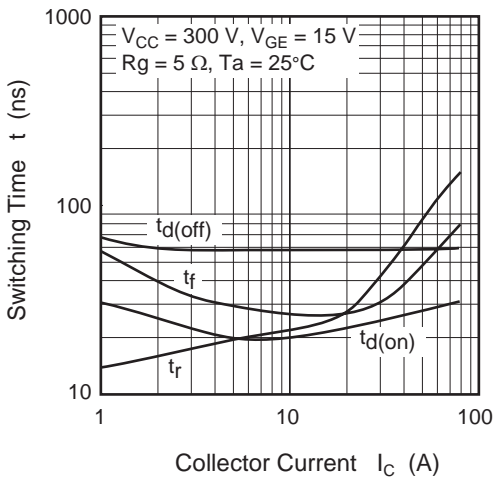
Typical Capacitance vs. Collector to Emitter Voltage



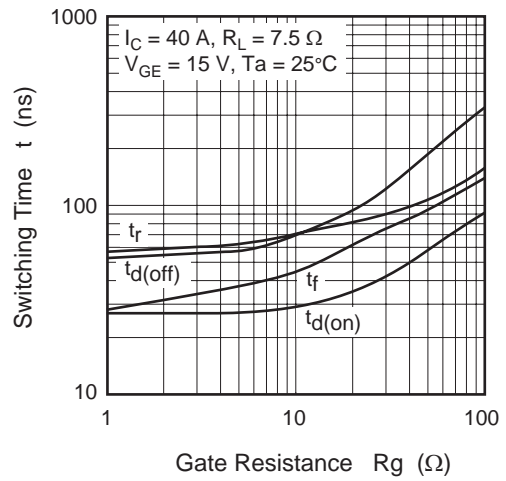
Dynamic Input Characteristics (Typical)



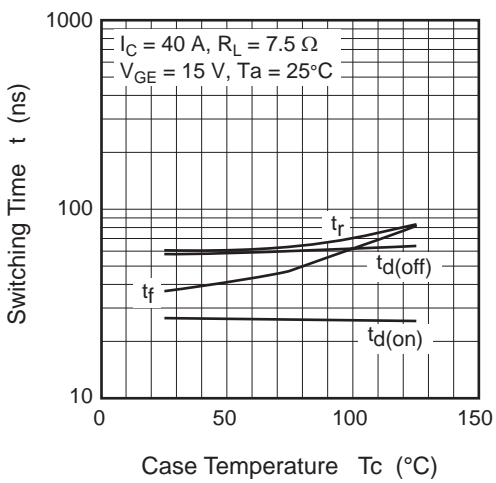
Switching Characteristics (Typical) (1)



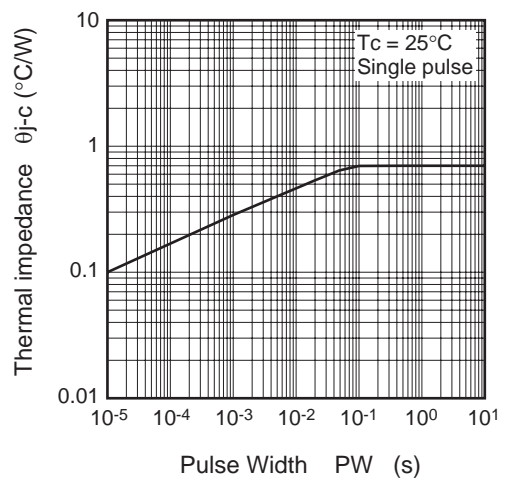
Switching Characteristics (Typical) (2)



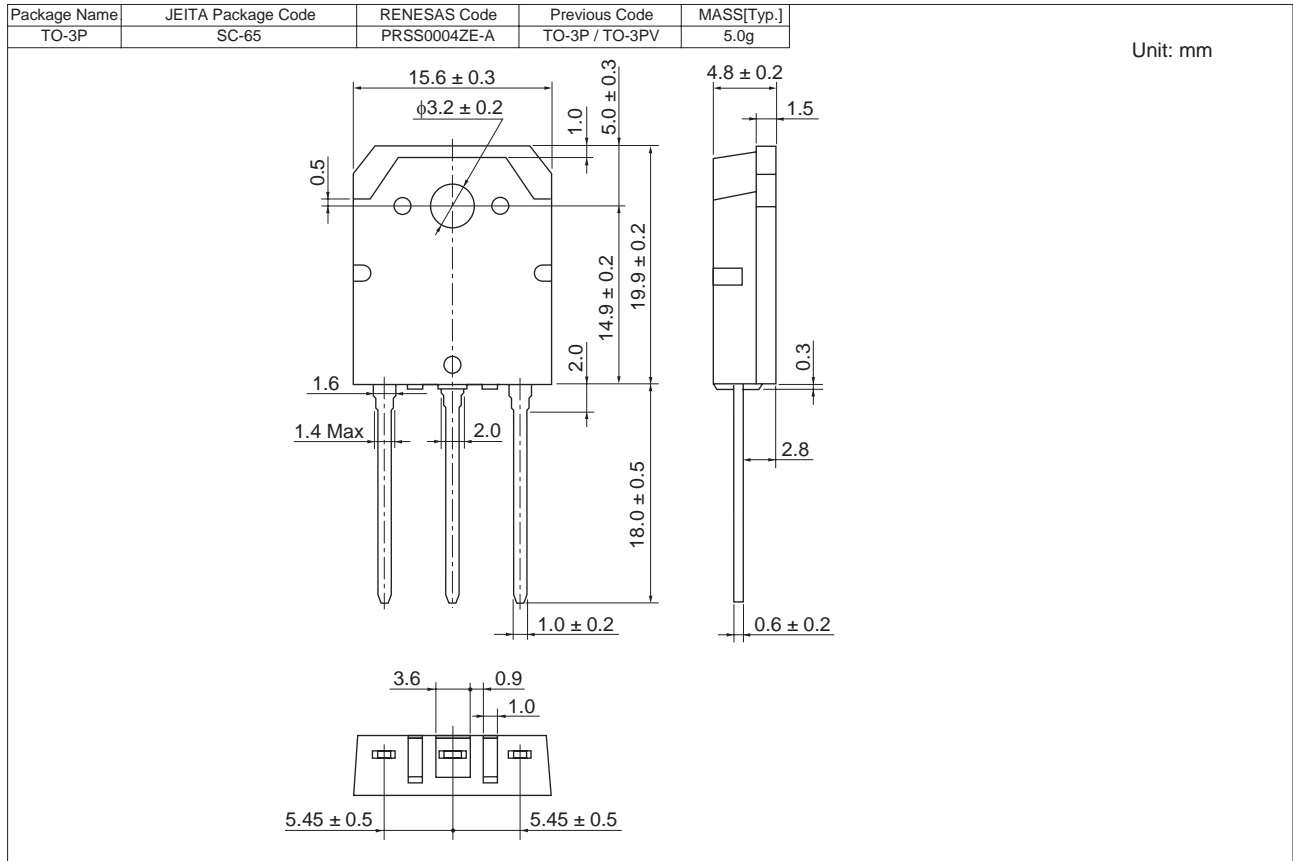
Switching Characteristics (Typical) (3)



Transient Thermal Impedance vs. Pulse Width



Package Dimensions



Ordering Information

| Part No. | Quantity | Shipping Container |
|------------------|----------|--------------------|
| RJK6085DPK-00-T0 | 360 pcs | Box (Tube) |

Notes:

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