

ADE-208-295 (Z)

2SH22

Silicon N-Channel IGBT

HITACHI

1st. Edition
Feb. 1995

Application

High speed power switching

Features

- High speed switching
- Low on saturation voltage

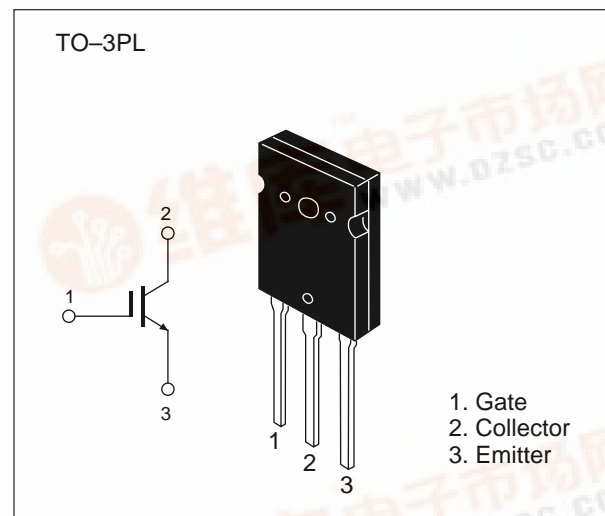


Table 1 Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|------------------------------|---------------|-------------|------|
| Collector to emitter voltage | V_{CES} | 600 | V |
| Gate to emitter voltage | V_{GES} | ± 20 | V |
| Collector current | I_C | 75 | A |
| Collector peak current | $i_{c(peak)}$ | 150 | A |
| Collector dissipation | P_C^* | 200 | W |
| Channel temperature | T_j | 150 | °C |
| Storage temperature | T_{stg} | -55 to +150 | °C |

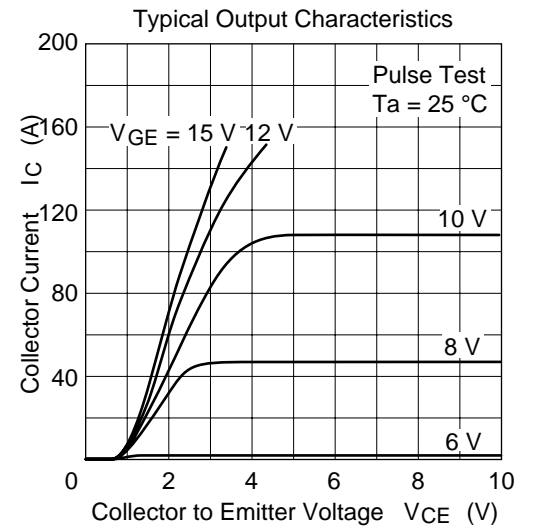
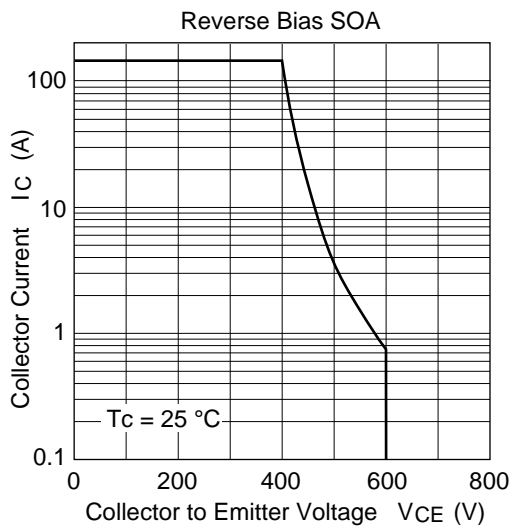
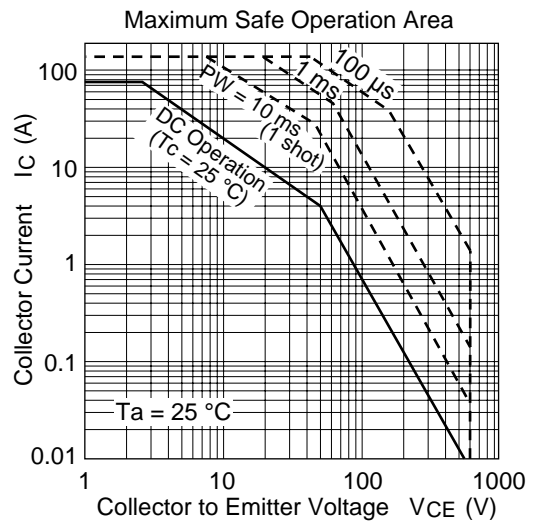
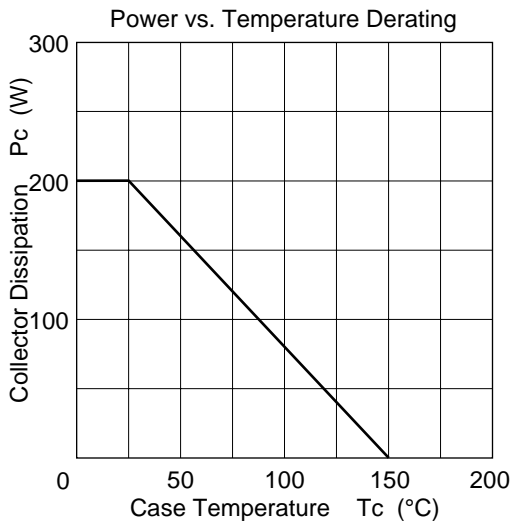
* Value at $T_c = 25^\circ\text{C}$

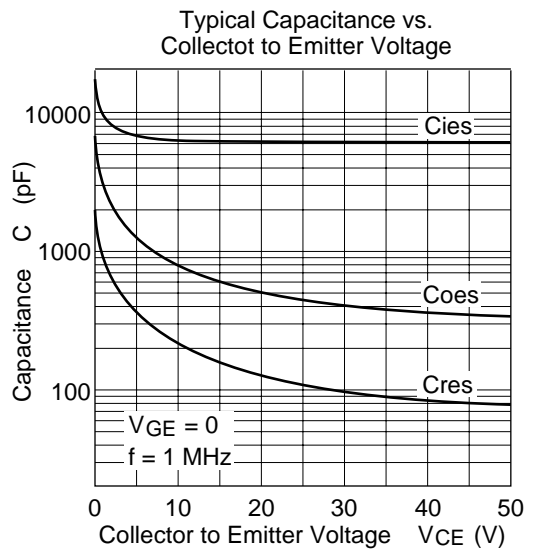
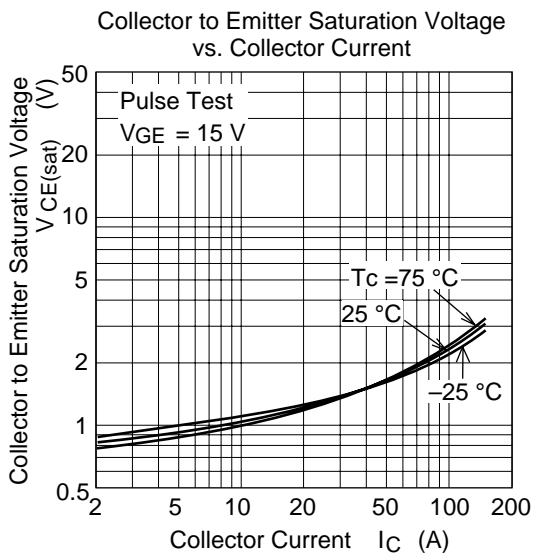
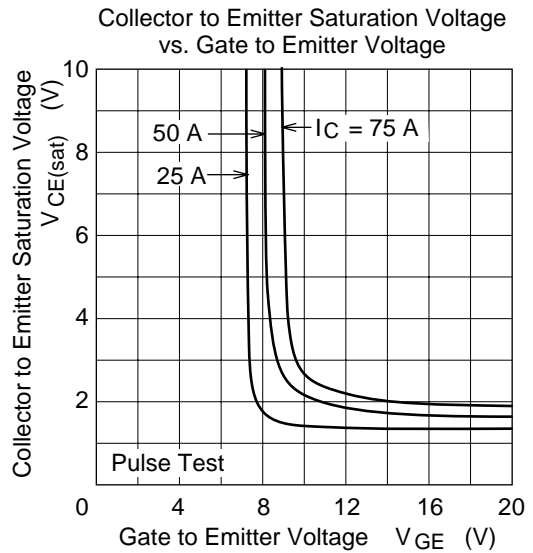
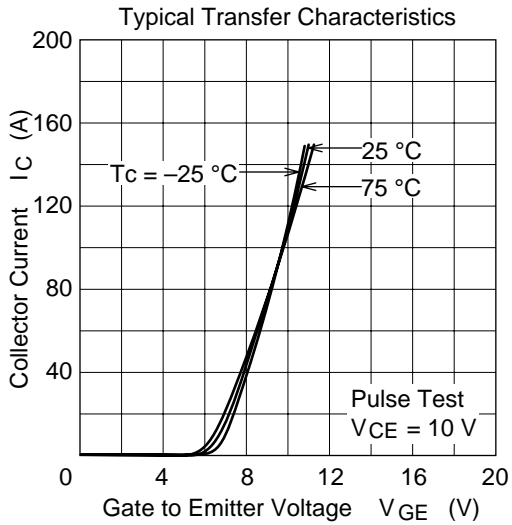
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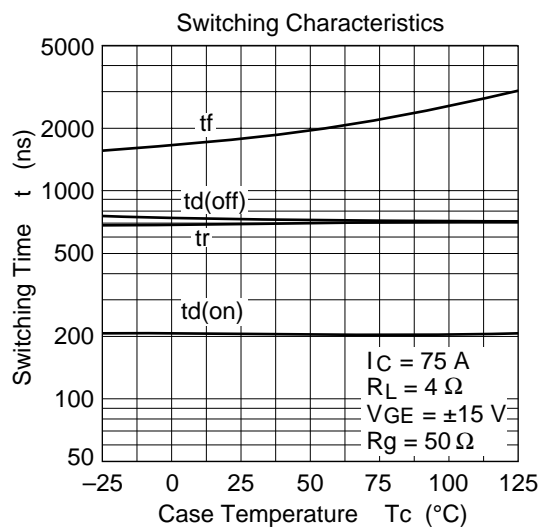
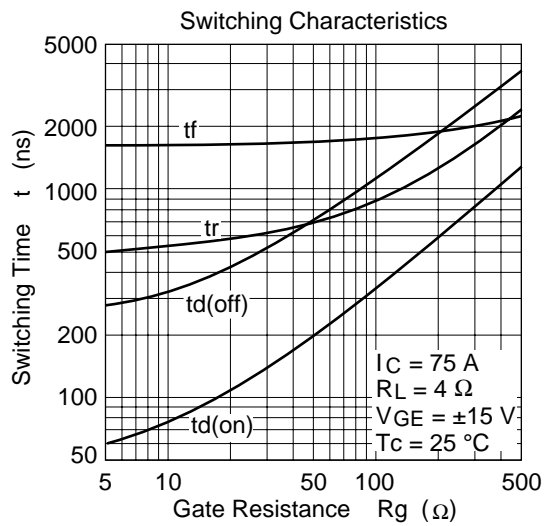
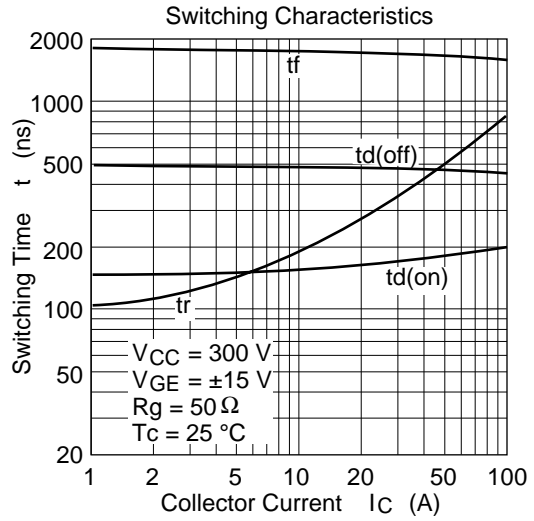
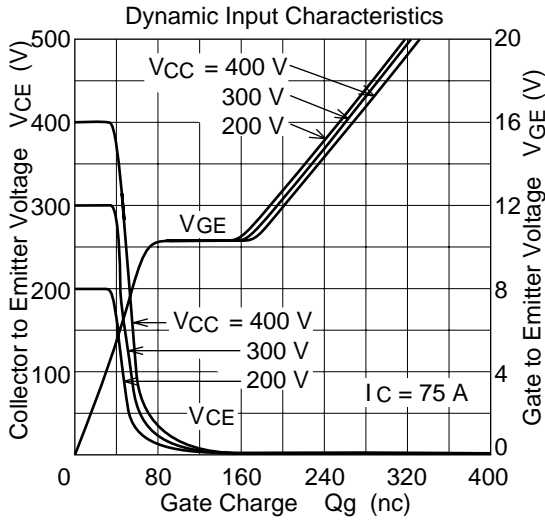
Table 2 Electrical Characteristics (Ta = 25°C)

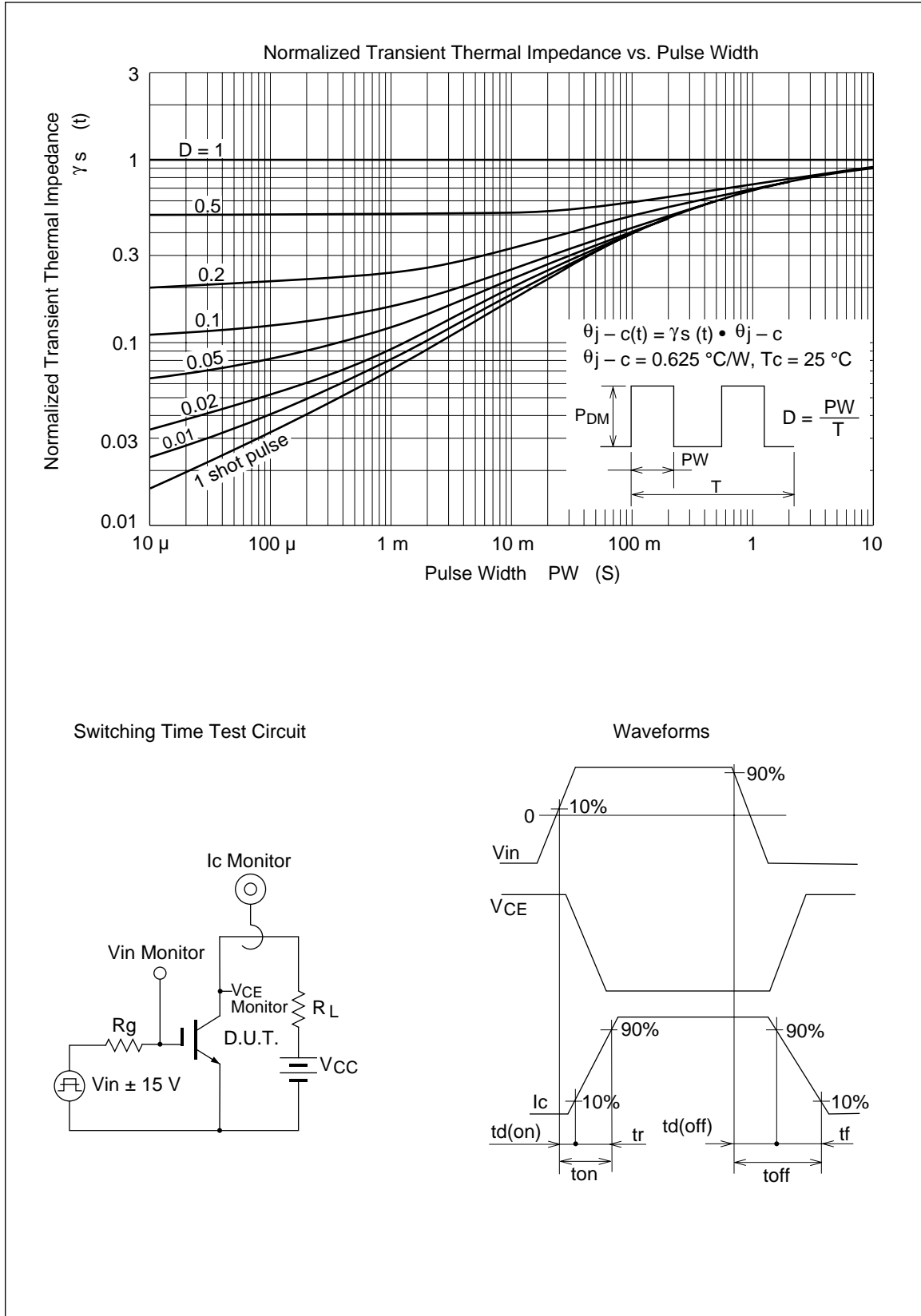
| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|---|----------------|-----|------|---------|---------|--|
| Collector to emitter breakdown voltage | $V_{(BR)CES}$ | 600 | — | — | V | $I_C = 100 \mu A, V_{GE} = 0$ |
| Zero gate voltage collector current | I_{CES} | — | — | 0.5 | mA | $V_{CE} = 600 V, V_{GE} = 0$ |
| Gate to emitter leak current | I_{GES} | — | — | ± 1 | μA | $V_{GE} = \pm 20 V, V_{CE} = 0$ |
| Gate to emitter cutoff current | $V_{GE(off)}$ | 3.0 | — | 6.0 | V | $I_C = 1 mA, V_{CE} = 10 V$ |
| Collector to emitter saturation voltage | $V_{CE(sat)1}$ | — | 1.5 | — | V | $I_C = 35 A, V_{GE} = 15 V$ |
| Collector to emitter saturation voltage | $V_{CE(sat)2}$ | — | 2.0 | 2.6** | V | $I_C = 75 A, V_{GE} = 15 V$ |
| Input capacitance | C_{ies} | — | 6200 | — | pF | $V_{CE} = 10 V, V_{GE} = 0, f = 1 MHz$ |
| Switching time | t_r | — | 700 | — | ns | $I_C = 75 A,$ $R_L = 4 \Omega,$ $V_{GE} = \pm 15 V$ $R_g = 50 \Omega$ |
| | t_{on} | — | 900 | — | | |
| | t_f | — | 2000 | — | | |
| | t_{off} | — | 2800 | — | | |

** $V_{CE(sat)2}$ is specified at the correlated test condition ($I_C=50A$)

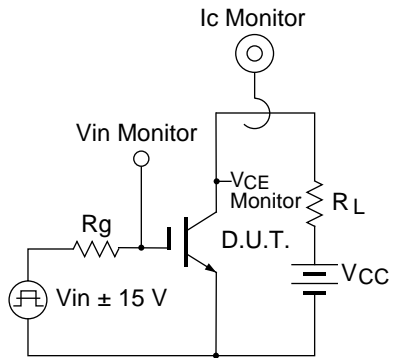




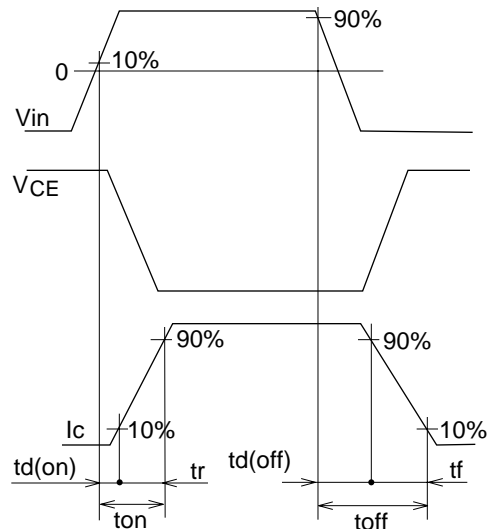




Switching Time Test Circuit

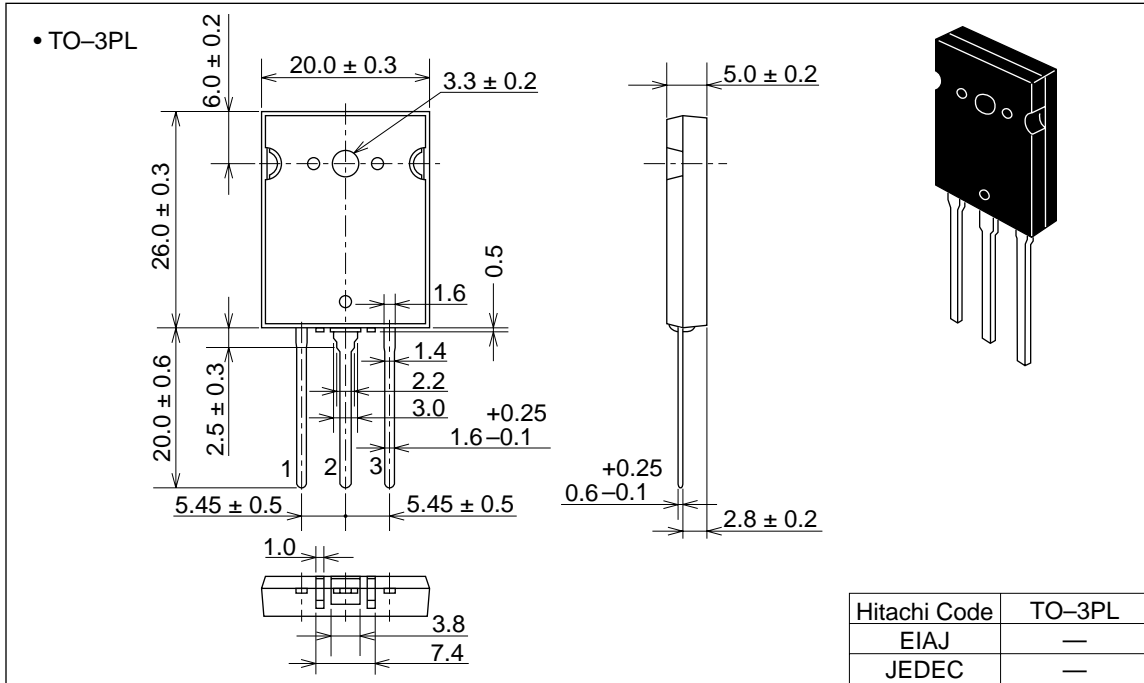


Waveforms



Package Dimensions

Unit : mm



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