

2SK2851

Silicon N Channel MOS FET
High Speed Power Switching

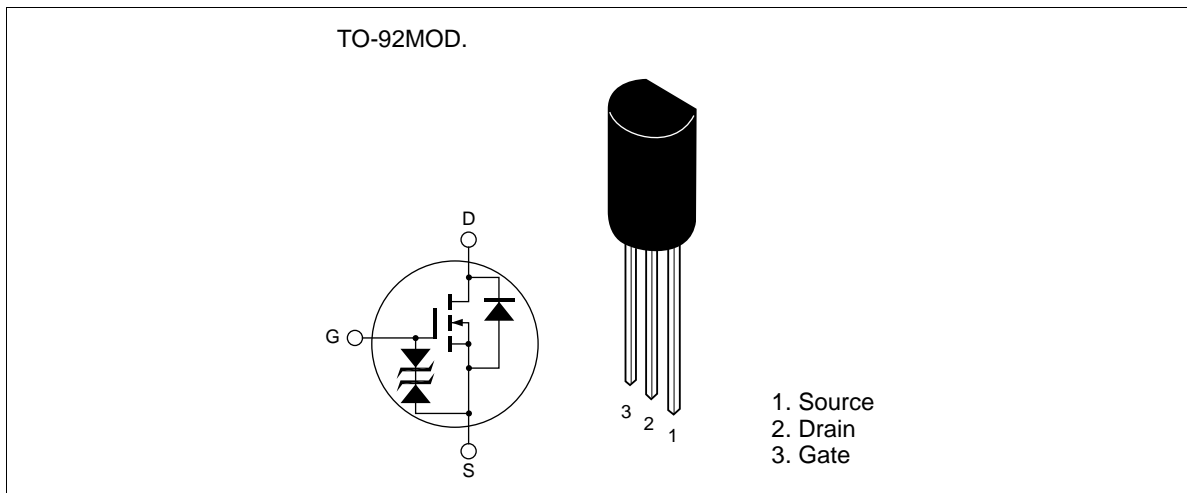
HITACHI

ADE-208-478
1st. Edition

Features

- Low on-resistance
 $R_{DS(on)} = 0.055\Omega$ typ. (at $V_{GS} = 10\text{ V}$, $I_D = 2.5\text{ A}$)
- 4V gate drive devices.
- Large current capacitance
 $I_D = 5\text{ A}$

Outline



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Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|---------------------|-------------|------|
| Drain to source voltage | V_{DSS} | 60 | V |
| Gate to source voltage | V_{GSS} | ±20 | V |
| Drain current | I_D | 5 | A |
| Drain peak current | $I_{D(pulse)}^{*1}$ | 20 | A |
| Body to drain diode reverse drain current | I_{DR} | 5 | A |
| Avalanche current | I_{AP}^{*3} | 5 | A |
| Avalanche energy | E_{AR}^{*3} | 2.14 | mJ |
| Channel dissipation | P_{ch}^{*2} | 0.9 | W |
| Channel temperature | Tch | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Notes: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
2. Value at Ta = 25°C
3. Value at Tch = 25°C, Rg $\geq 50\ \Omega$

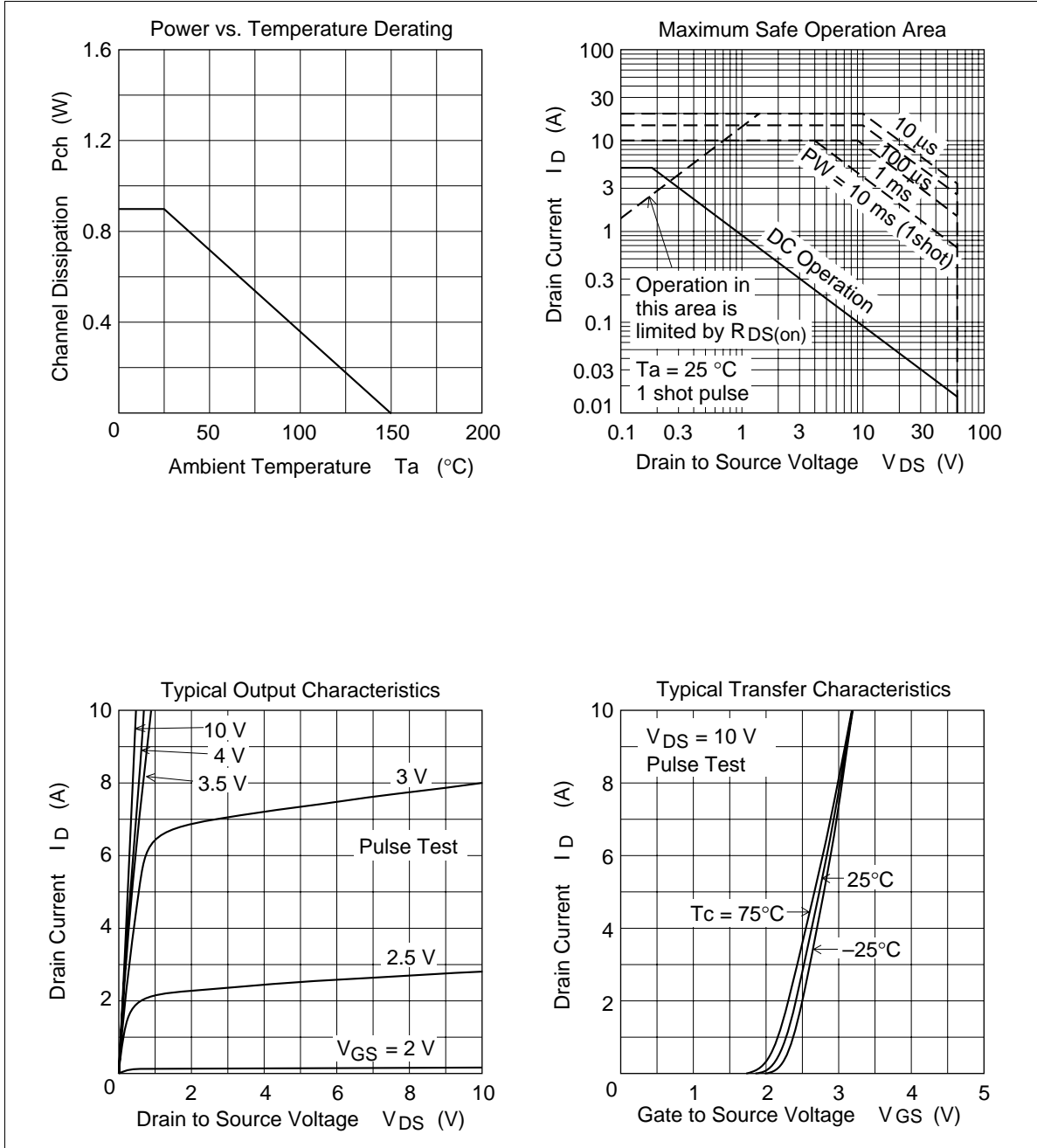
Electrical Characteristics (Ta = 25°C)

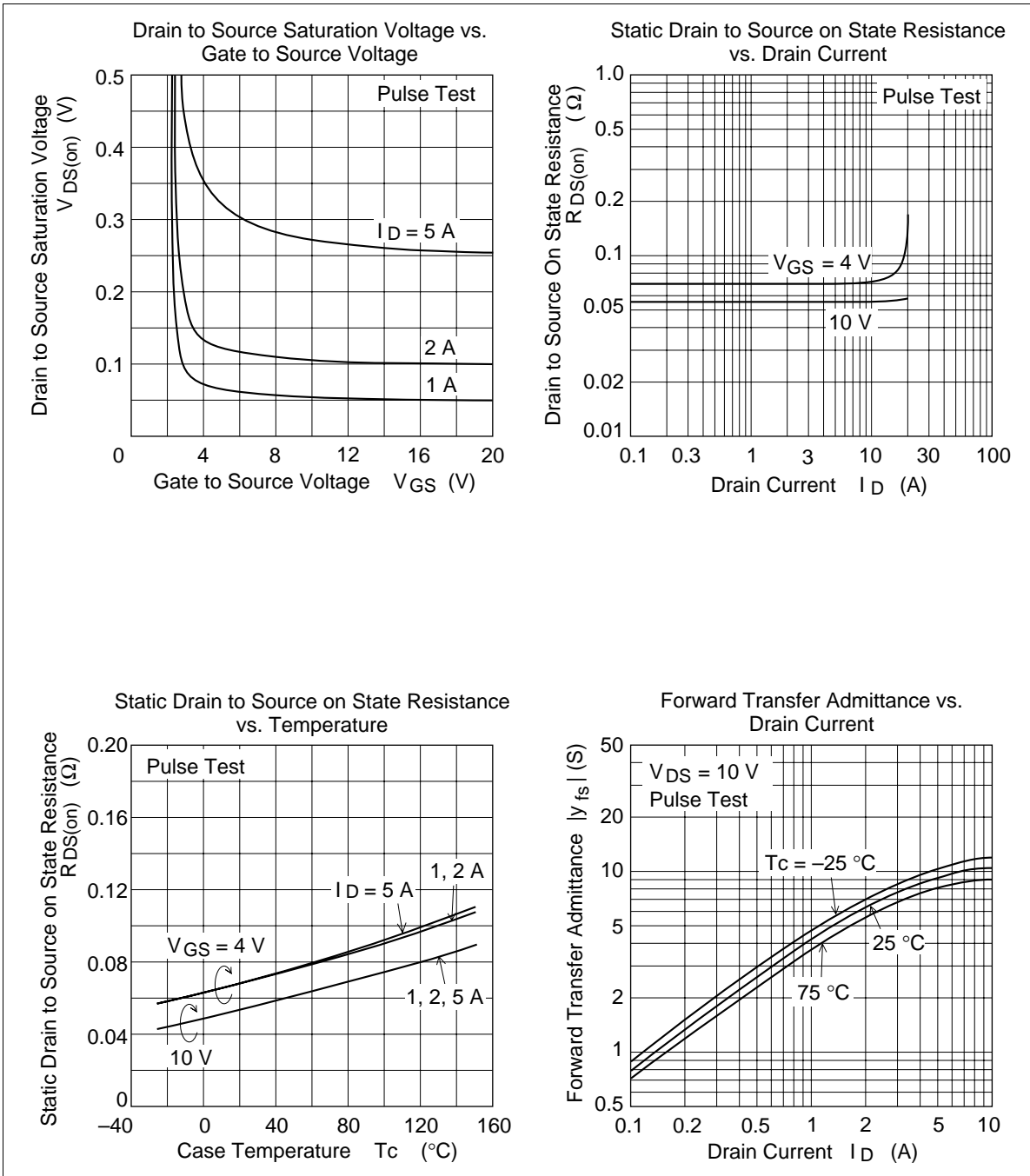
| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|--|---------------|----------|-------|----------|----------|--|
| Drain to source breakdown voltage | $V_{(BR)DSS}$ | 60 | — | — | V | $I_D = 10mA, V_{GS} = 0$ |
| Gate to source breakdown voltage | $V_{(BR)GSS}$ | ± 20 | — | — | V | $I_G = \pm 100\mu A, V_{DS} = 0$ |
| Zero gate voltage drain current | I_{DSS} | — | — | 10 | μA | $V_{DS} = 60V, V_{GS} = 0$ |
| Gate to source leak current | I_{GSS} | — | — | ± 10 | μA | $V_{GS} = \pm 16V, V_{DS} = 0$ |
| Gate to source cutoff voltage | $V_{GS(off)}$ | 1.0 | — | 2.0 | V | $I_D = 1mA, V_{DS} = 10V$ |
| Static drain to source on state resistance | $R_{DS(on)}$ | — | 0.055 | 0.07 | Ω | $I_D = 2.5A, V_{GS} = 10V^{*1}$ |
| | $R_{DS(on)}$ | — | 0.07 | 0.1 | Ω | $I_D = 2.5A, V_{GS} = 4V^{*1}$ |
| Forward transfer admittance | $ y_{fs} $ | 5 | 7 | — | S | $I_D = 2.5A, V_{DS} = 10V^{*1}$ |
| Input capacitance | C_{iss} | — | 500 | — | pF | $V_{DS} = 10V$ |
| Output capacitance | C_{oss} | — | 260 | — | pF | $V_{GS} = 0$ |
| Reverse transfer capacitance | C_{rss} | — | 110 | — | pF | $f = 1MHz$ |
| Turn-on delay time | $t_{d(on)}$ | — | 10 | — | ns | $V_{GS} = 10V, I_D = 2.5A$ |
| Rise time | t_r | — | 30 | — | ns | $R_L = 12\Omega$ |
| Turn-off delay time | $t_{d(off)}$ | — | 100 | — | ns | |
| Fall time | t_f | — | 75 | — | ns | |
| Body to drain diode forward voltage | V_{DF} | — | 0.9 | — | V | $I_D = 5A, V_{GS} = 0$ |
| Body to drain diode reverse recovery time | t_{rr} | — | 50 | — | ns | $I_F = 5A, V_{GS} = 0$ $diF/dt = 50A/\mu s$ |

Note: 1. Pulse test

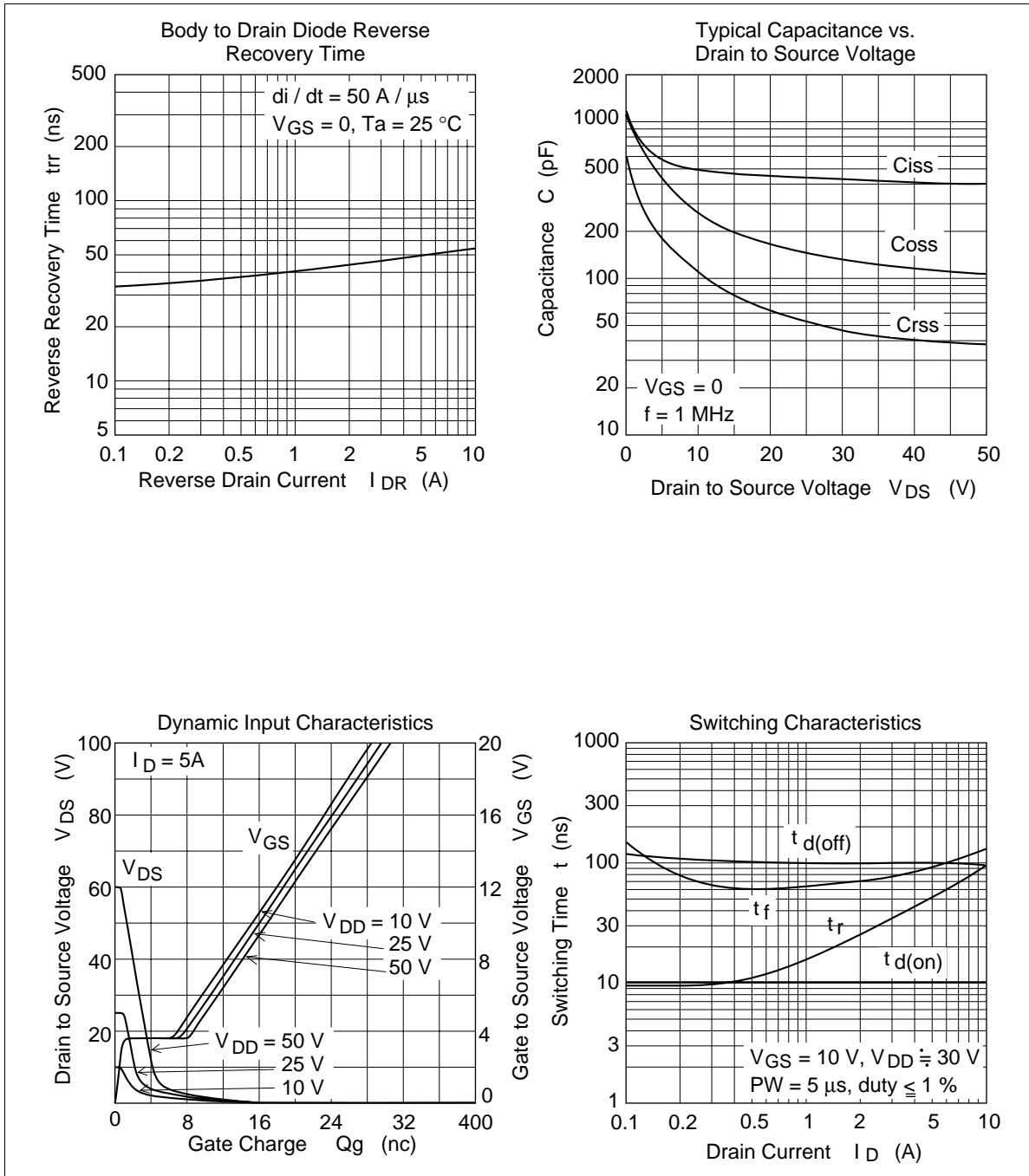
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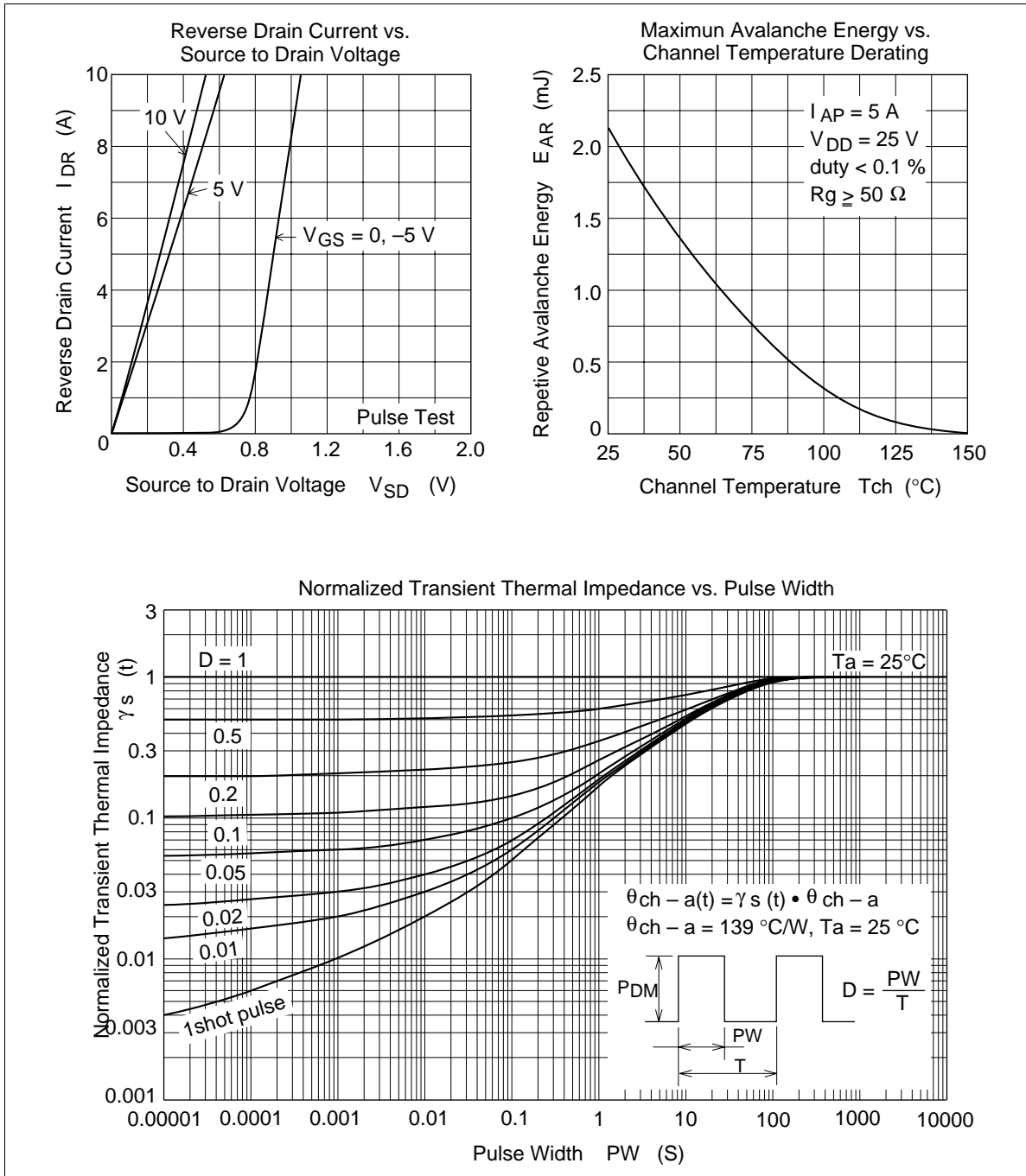
Main Characteristics



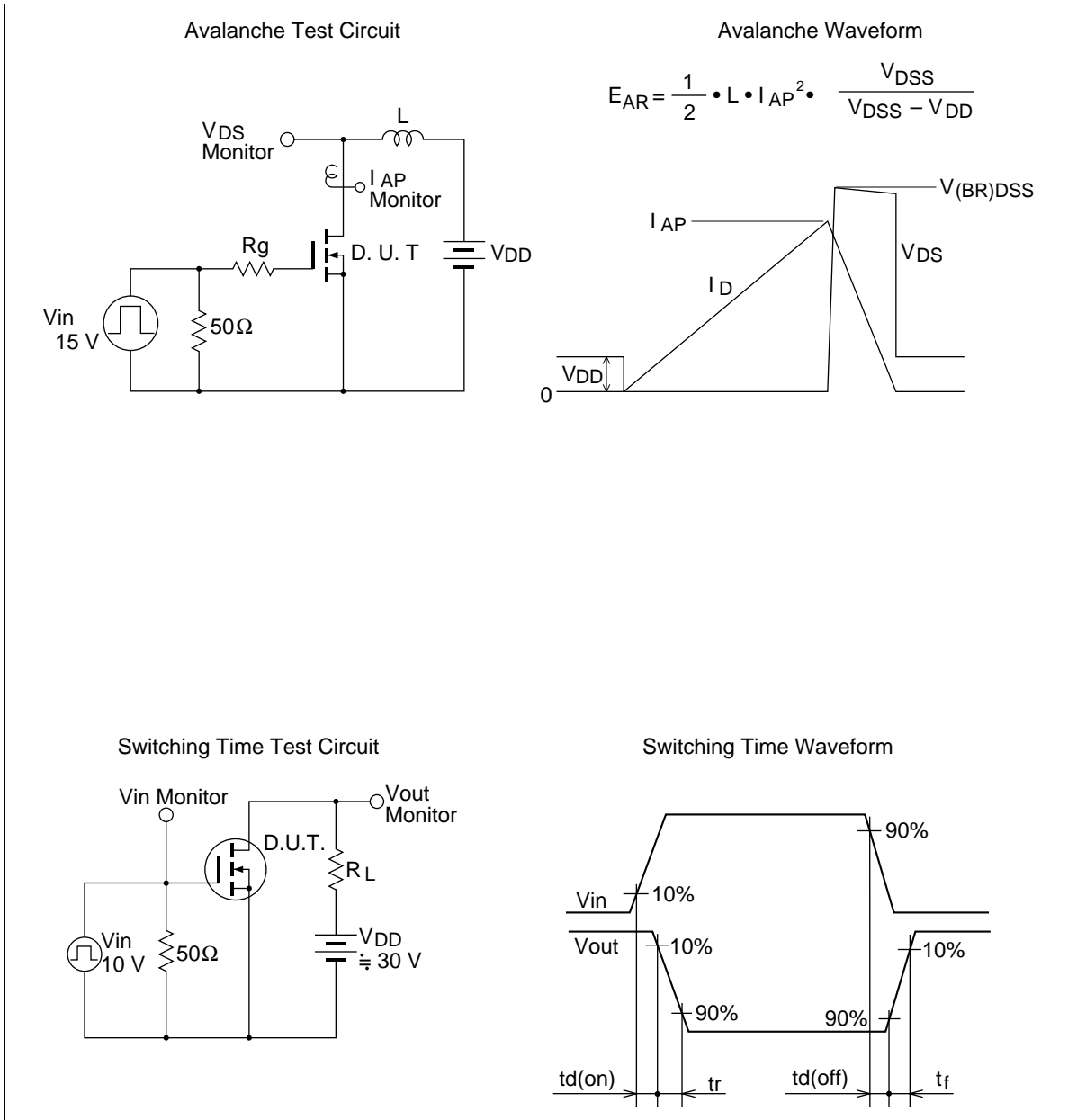


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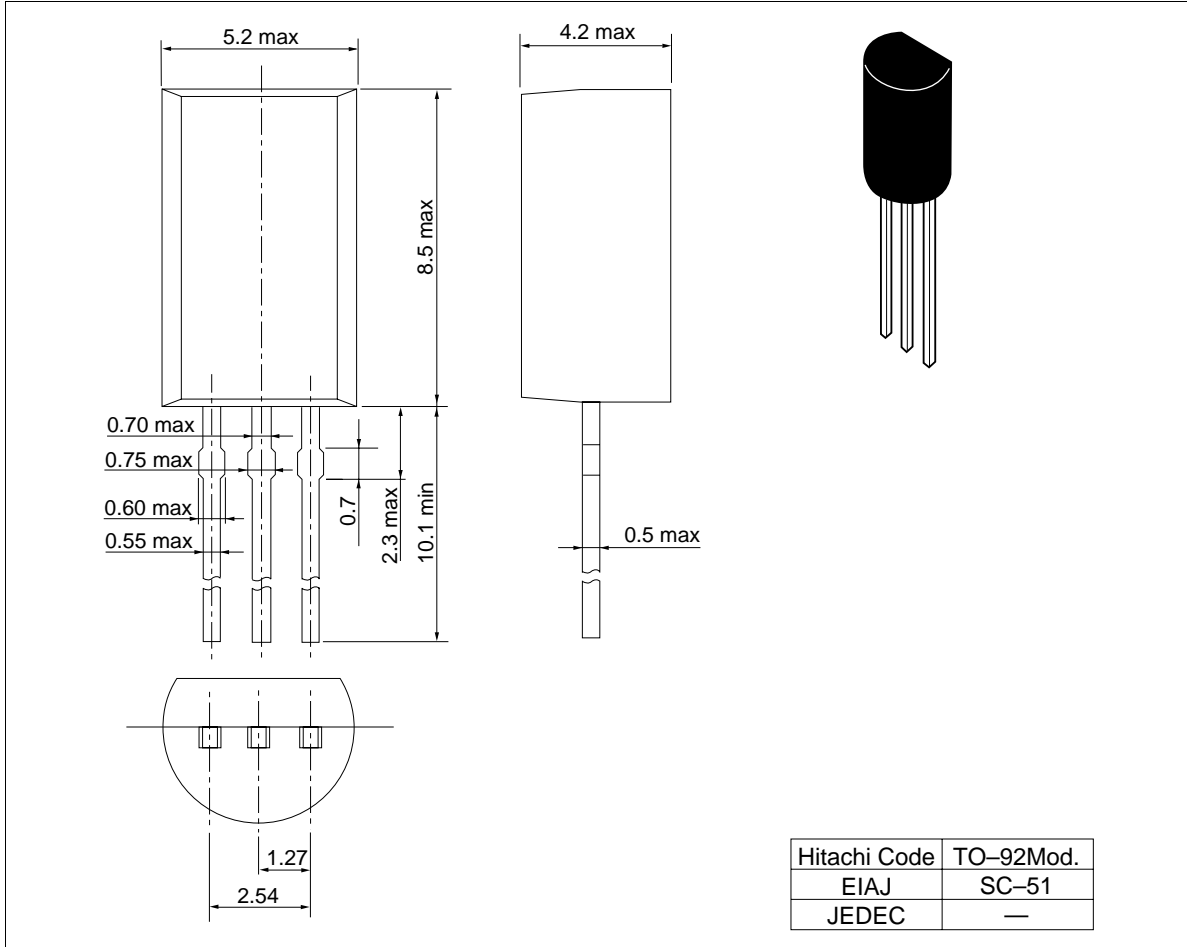


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Package Dimentions

Unit: mm



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