
2SK2084(L), 2SK2084(S)

Silicon N-Channel MOS FET

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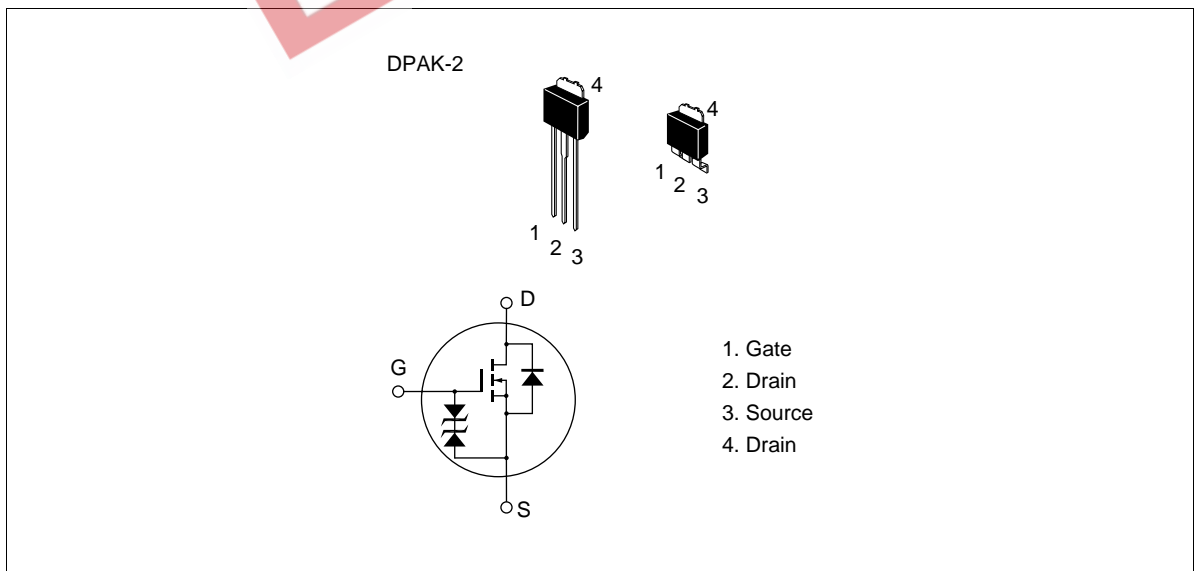
Application

High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device can be driven from 5 V source
- Suitable for Switching regulator, DC - DC converter

Outline



2SK2084(L), 2SK2084(S)

Absolute Maximum Ratings (Ta = 25°C)

| Item | Symbol | Ratings | Unit |
|---|-------------------------------------|-------------|------|
| Drain to source voltage | V _{DSS} | 20 | V |
| Gate to source voltage | V _{GSS} | ±20 | V |
| Drain current | I _D | 7 | A |
| Drain peak current | I _{D(pulse)} ^{*1} | 28 | A |
| Body to drain diode reverse drain current | I _{DR} | 7 | A |
| Channel dissipation | Pch ^{*2} | 20 | W |
| Channel temperature | Tch | 150 | °C |
| Storage temperature | Tstg | -55 to +150 | °C |

Notes 1. PW ≤ 10 μs, duty cycle ≤ 1 %
2. Value at Tc = 25°C

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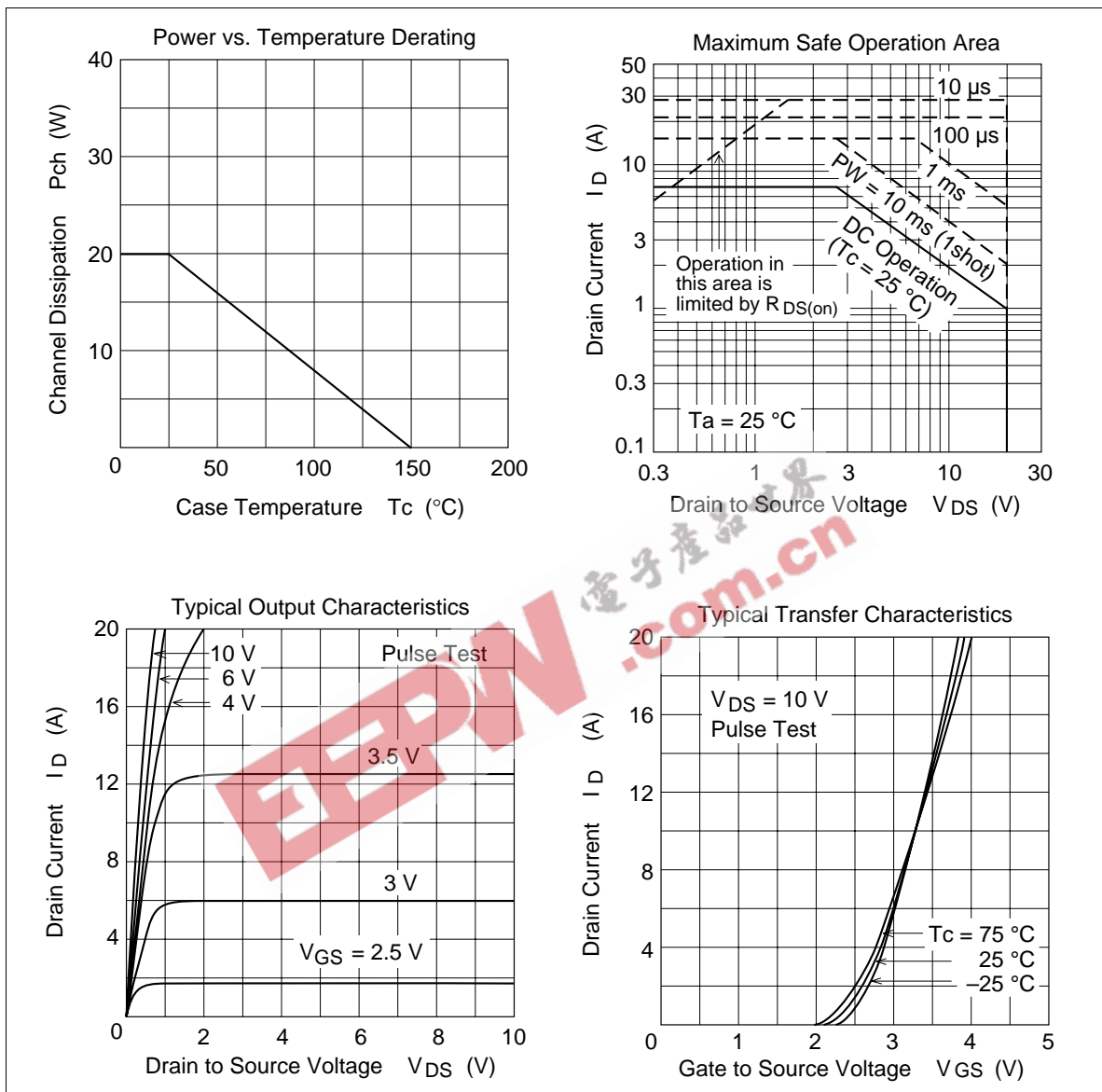
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Electrical Characteristics (T_a = 25°C)

| Item | Symbol | Min | Typ | Max | Unit | Test conditions |
|--|---------------------|-----|-------|-------|------|--|
| Drain to source breakdown voltage | $V_{(BR)DSS}$ | 20 | — | — | V | $I_D = 10 \text{ mA}, V_{GS} = 0$ |
| Gate to source breakdown voltage | $V_{(BR)GSS}$ | ±20 | — | — | V | $I_G = \pm 100 \text{ } \mu\text{A}, V_{DS} = 0$ |
| Gate to source leak current | I_{GSS} | — | — | ±10 | μA | $V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$ |
| Zero gate voltage drain current | I_{DSS} | — | — | 100 | μA | $V_{DS} = 16 \text{ V}, V_{GS} = 0$ |
| Gate to source cutoff voltage | $V_{GS(off)}$ | 1.0 | — | 2.5 | V | $I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$ |
| Static drain to source on state resistance | $R_{DS(on)}$ | — | 0.04 | 0.053 | Ω | $I_D = 4 \text{ A}$ $V_{GS} = 10 \text{ V}^{*1}$ |
| | | — | 0.058 | 0.075 | Ω | $I_D = 4 \text{ A}$ $V_{GS} = 4 \text{ V}^{*1}$ |
| Forward transfer admittance | y _{fs} | 5 | 9 | — | S | $I_D = 4 \text{ A}$ $V_{DS} = 10 \text{ V}^{*1}$ |
| Input capacitance | C _{iss} | — | 800 | — | pF | $V_{DS} = 10 \text{ V}$ |
| Output capacitance | C _{oss} | — | 680 | — | pF | $V_{GS} = 0$ |
| Reverse transfer capacitance | C _{rss} | — | 165 | — | pF | $f = 1 \text{ MHz}$ |
| Turn-on delay time | t _{d(on)} | — | 15 | — | ns | $I_D = 4 \text{ A}$ |
| Rise time | t _r | — | 60 | — | ns | $V_{GS} = 10 \text{ V}$ |
| Turn-off delay time | t _{d(off)} | — | 100 | — | ns | $R_L = 5 \text{ } \Omega$ |
| Fall time | t _f | — | 80 | — | ns | |
| Body to drain diode forward voltage | V_{DF} | — | 0.9 | — | V | $I_F = 7 \text{ A}, V_{GS} = 0$ |
| Body to drain diode reverse recovery time | t _{rr} | — | 80 | — | ns | $I_F = 7 \text{ A}, V_{GS} = 0,$ $di_F / dt = 20 \text{ A} / \mu\text{s}$ |

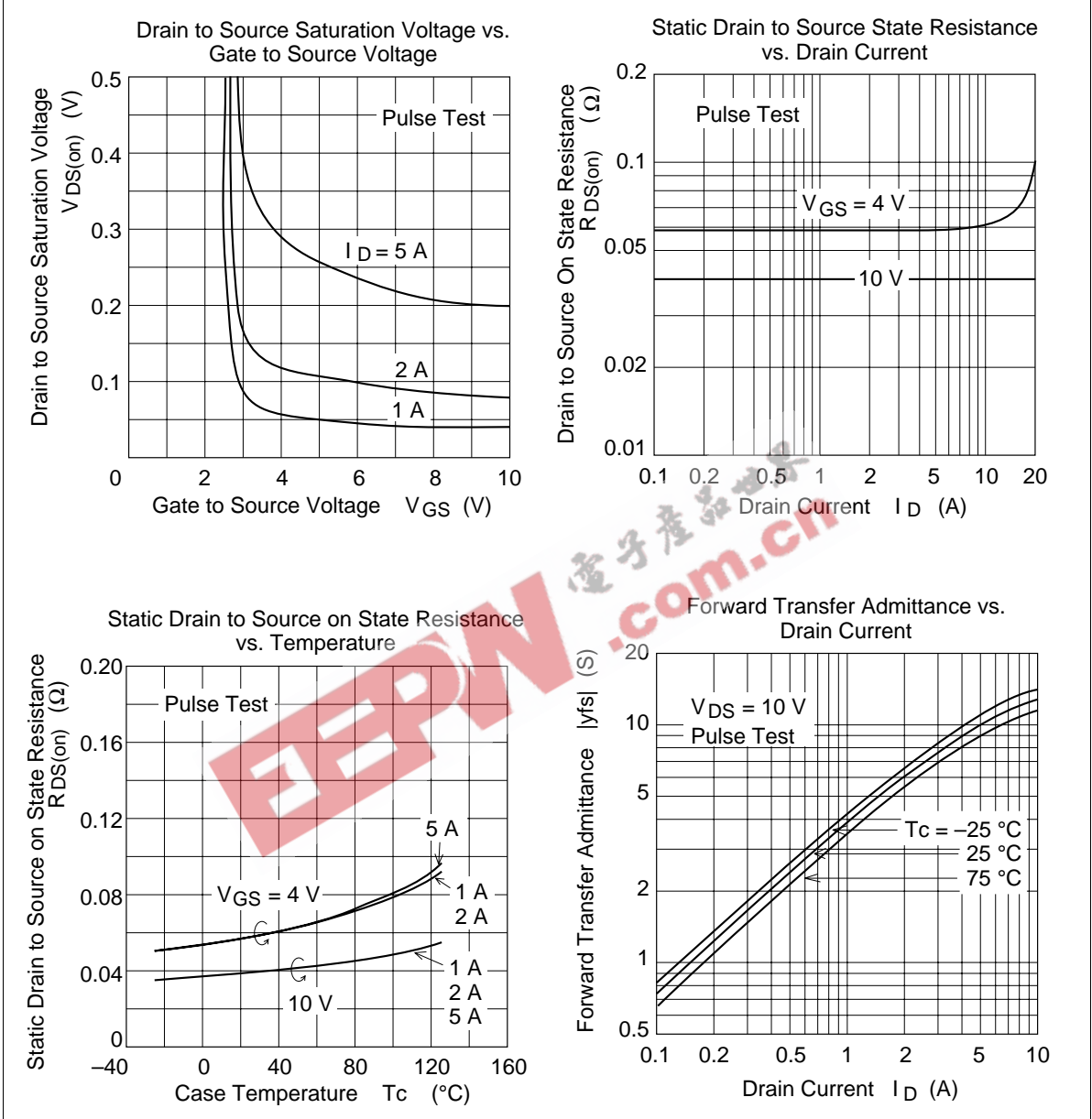
Note 1. Pulse Test

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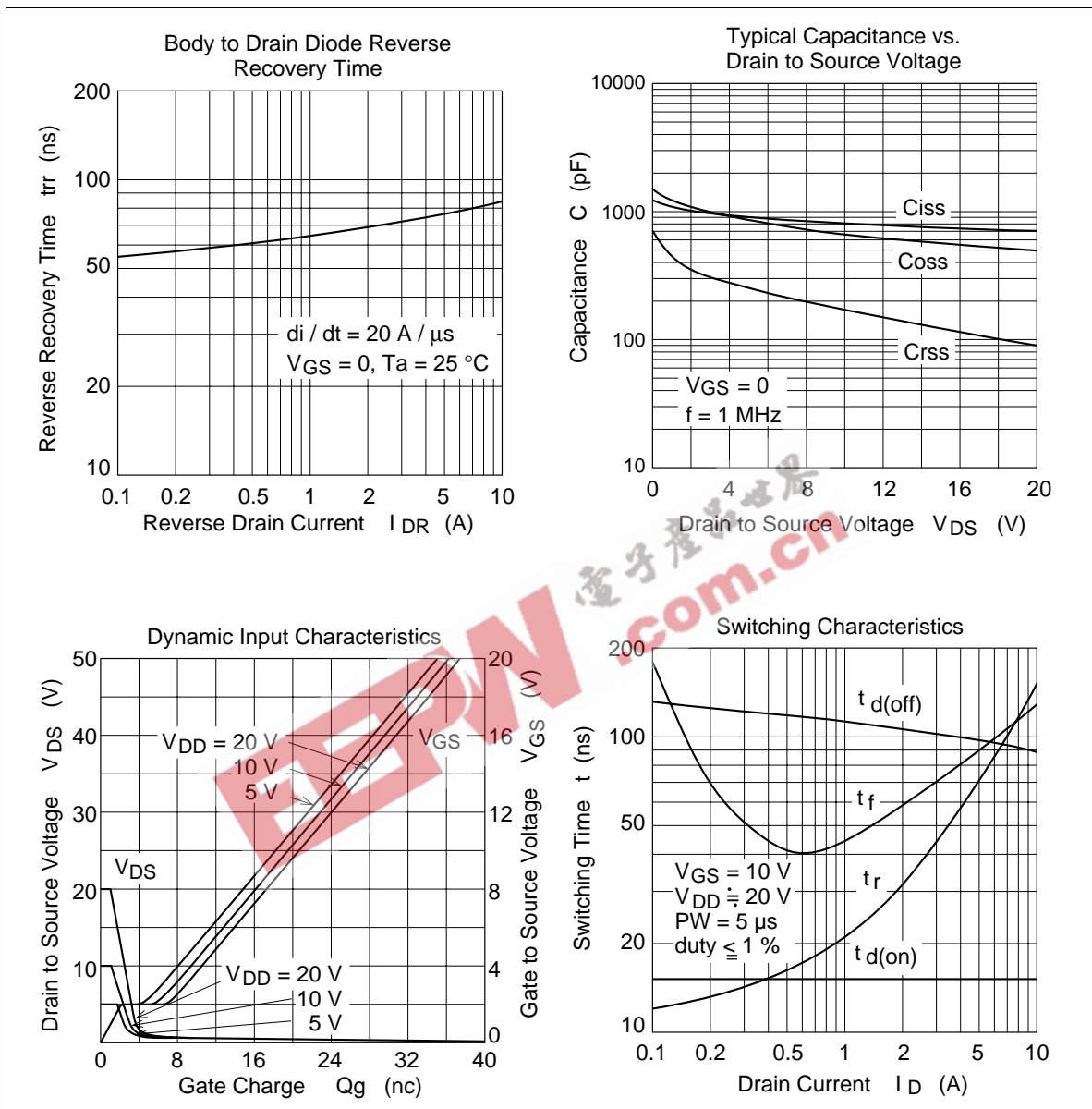


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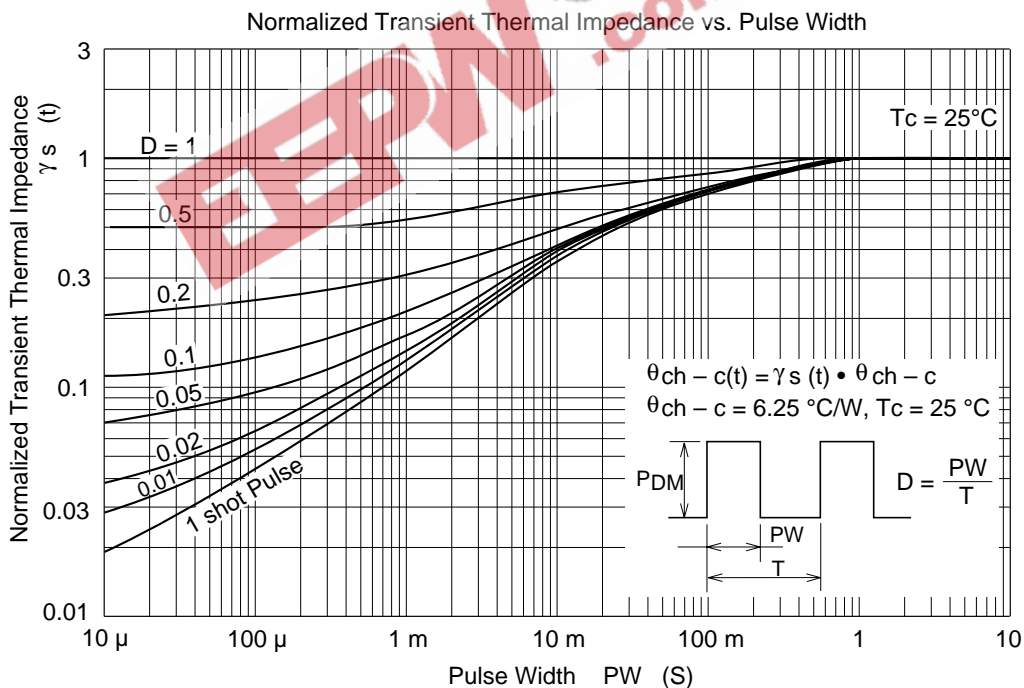
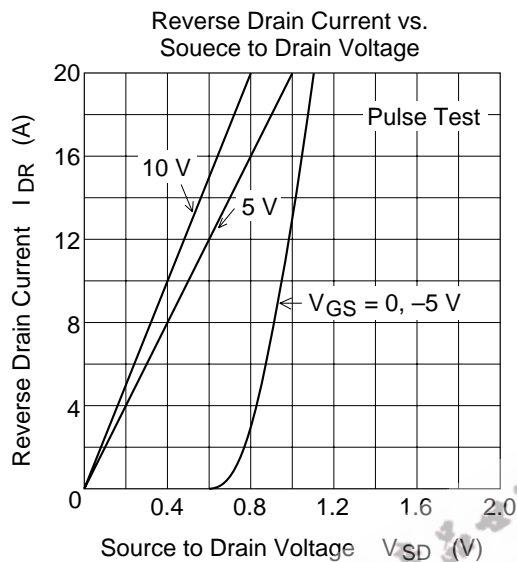
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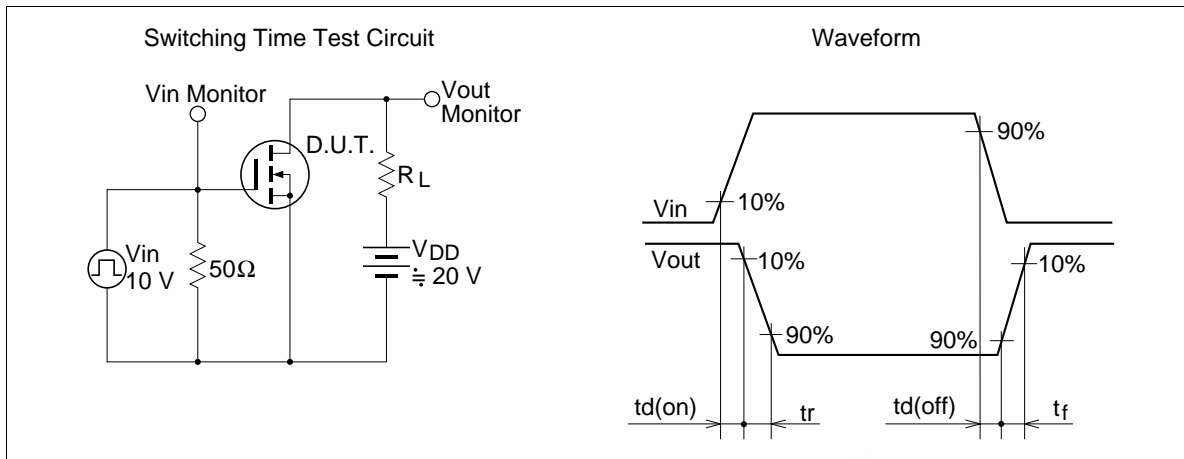
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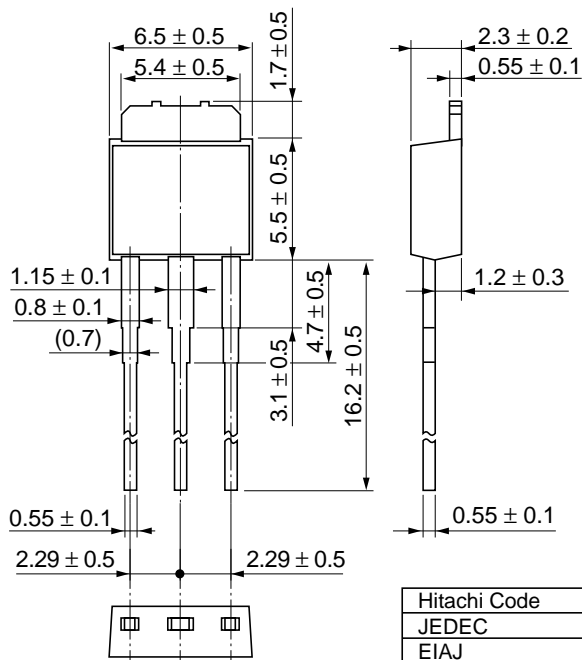


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Unit: mm



| | |
|--------------------------|--------------|
| Hitachi Code | DPAK (L)-(2) |
| JEDEC | — |
| EIAJ | — |
| Weight (reference value) | 0.42 g |

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