
2SK1808

Silicon N-Channel MOS FET

HITACHI

Application

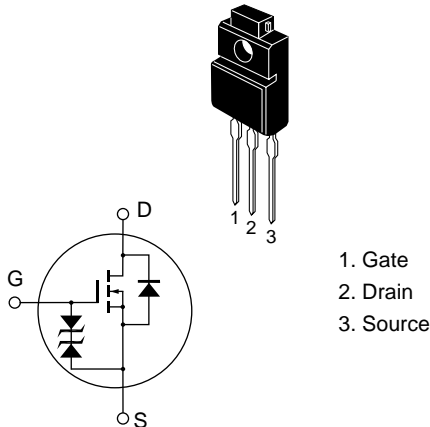
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator, DC-DC converter

Outline

TO-220FM



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

| Item | Symbol | Ratings | Unit |
|---|---------------------|----------------|------------------|
| Drain to source voltage | V_{DSS} | 900 | V |
| Gate to source voltage | V_{GSS} | ± 30 | V |
| Drain current | I_D | 4 | A |
| Drain peak current | $I_{D(pulse)}^{*1}$ | 10 | A |
| Body to drain diode reverse drain current | I_{DR} | 4 | A |
| Channel dissipation | Pch^{*2} | 35 | W |
| Channel temperature | Tch | 150 | $^\circ\text{C}$ |
| Storage temperature | $Tstg$ | -55 to +150 | $^\circ\text{C}$ |

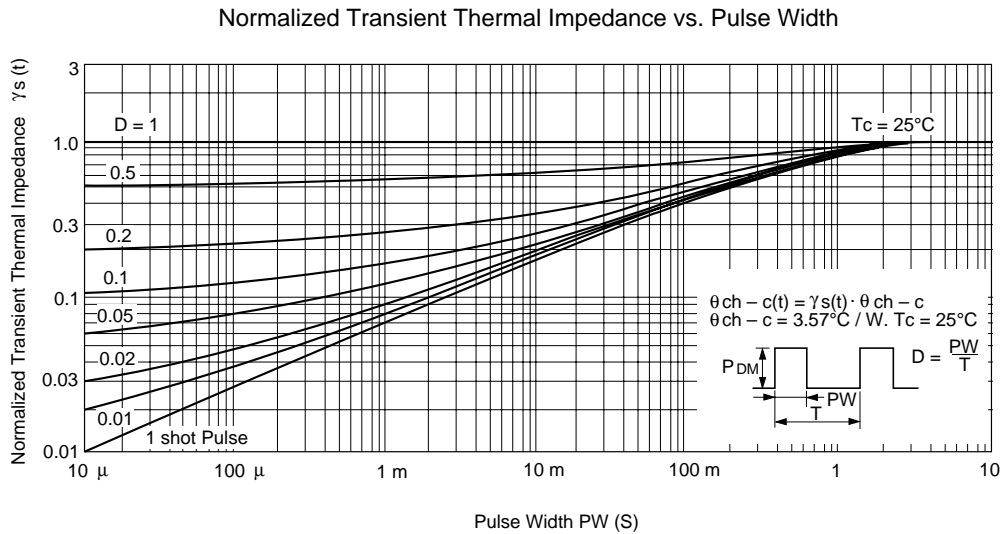
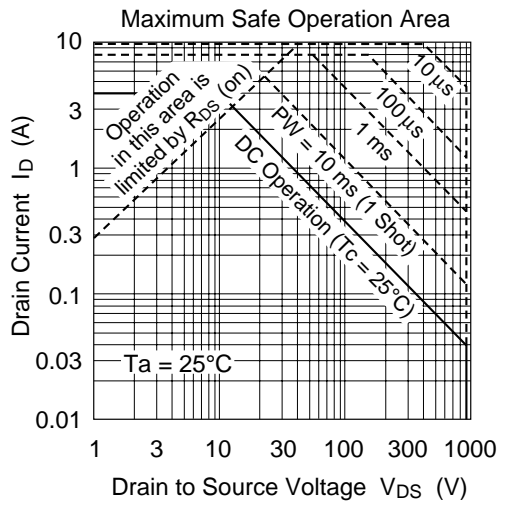
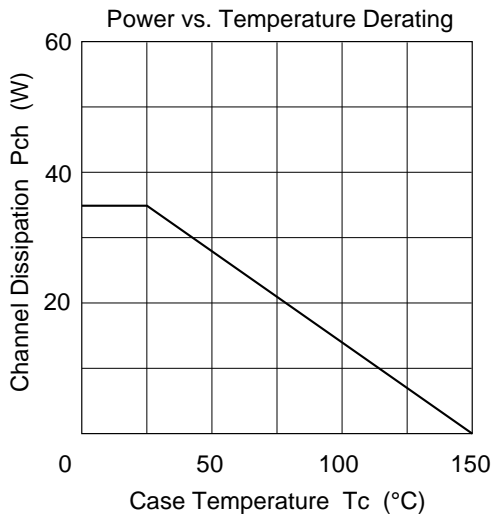
- Notes 1. $PW \leq 10 \mu\text{s}$, duty cycle $\leq 1\%$
2. Value at $T_c = 25^\circ\text{C}$

Electrical Characteristics (Ta = 25°C)

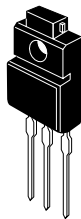
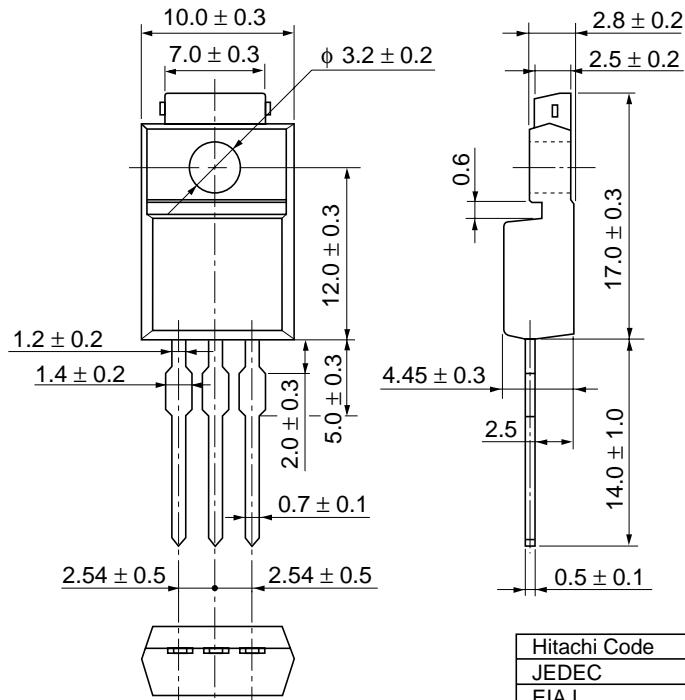
| Item | Symbol | Min | Typ | Max | Unit | Test Conditions |
|--|---------------|----------|-----|----------|---------------|---|
| Drain to source breakdown voltage | $V_{(BR)DSS}$ | 900 | — | — | V | $I_D = 10 \text{ mA}$, $V_{GS} = 0$ |
| Gate to source breakdown voltage | $V_{(BR)GSS}$ | ± 30 | — | — | V | $I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0$ |
| Gate to source leak current | I_{GSS} | — | — | ± 10 | μA | $V_{GS} = \pm 25 \text{ V}$, $V_{DS} = 0$ |
| Zero gate voltage drain current | I_{DSS} | — | — | 250 | μA | $V_{DS} = 720 \text{ V}$, $V_{GS} = 0$ |
| Gate to source cutoff voltage | $V_{GS(off)}$ | 2.0 | — | 3.0 | V | $I_D = 1 \text{ mA}$, $V_{DS} = 10 \text{ V}$ |
| Static drain to source on state resistance | $R_{DS(on)}$ | — | 3.0 | 4.0 | Ω | $I_D = 2 \text{ A}$ $V_{GS} = 10 \text{ V}^{*1}$ |
| Forward transfer admittance | $ y_{fs} $ | 1.7 | 2.7 | — | S | $I_D = 2 \text{ A}$ $V_{DS} = 10 \text{ V}^{*1}$ |
| Input capacitance | C_{iss} | — | 740 | — | pF | $V_{DS} = 10 \text{ V}$ |
| Output capacitance | C_{oss} | — | 305 | — | pF | $V_{GS} = 0$ |
| Reverse transfer capacitance | C_{rss} | — | 150 | — | pF | $f = 1 \text{ MHz}$ |
| Turn-on delay time | $t_{d(on)}$ | — | 15 | — | ns | $I_D = 2 \text{ A}$ |
| Rise time | t_r | — | 60 | — | ns | $V_{GS} = 10 \text{ V}$ |
| Turn-off delay time | $t_{d(off)}$ | — | 100 | — | ns | $R_L = 15 \text{ }\Omega$ |
| Fall time | t_f | — | 80 | — | ns | |
| Body to drain diode forward voltage | V_{DF} | — | 0.9 | — | V | $I_F = 4 \text{ A}$, $V_{GS} = 0$ |
| Body to drain diode reverse recovery time | t_{rr} | — | 800 | — | ns | $I_F = 4 \text{ A}$, $V_{GS} = 0$, $di_F / dt = 100 \text{ A} / \mu\text{s}$ |

Note 1. Pulse Test

See characteristic curves of 2SK1340



Unit: mm



| | |
|--------------------------|----------|
| Hitachi Code | TO-220FM |
| JEDEC | — |
| EIAJ | Conforms |
| Weight (reference value) | 1.8 g |

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