
2SK2225

Silicon N-Channel MOS FET

HITACHI

ADE-208-140
1st. Edition

Application

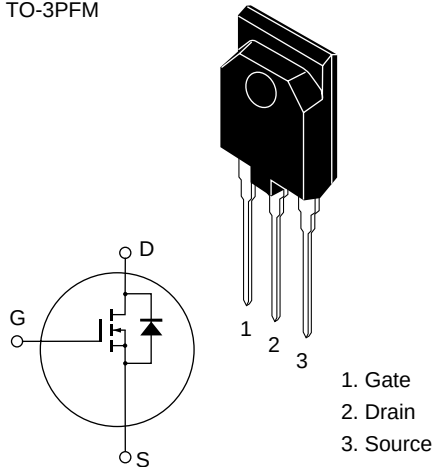
High speed power switching

Features

- High breakdown voltage ($V_{DS} = 1500\text{ V}$)
- High speed switching
- Low drive current
- No Secondary Breakdown
- Suitable for Switching regulator, DC-DC converter

Outline

TO-3PFM



Absolute Maximum Ratings (Ta = 25°C)

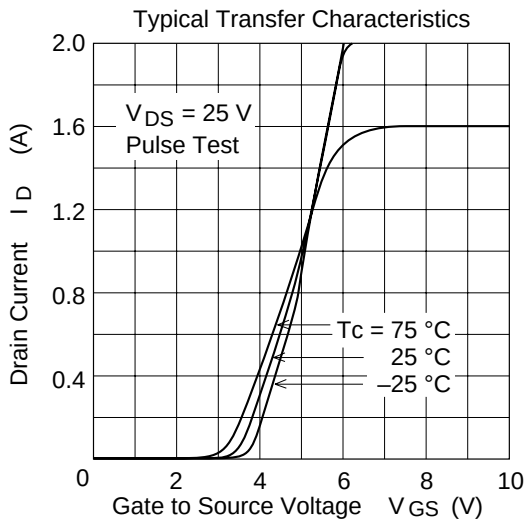
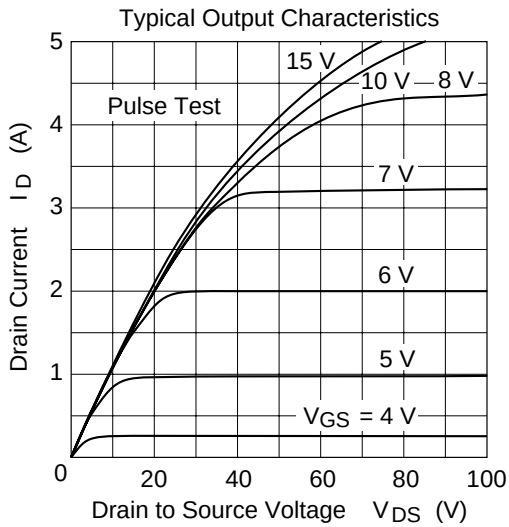
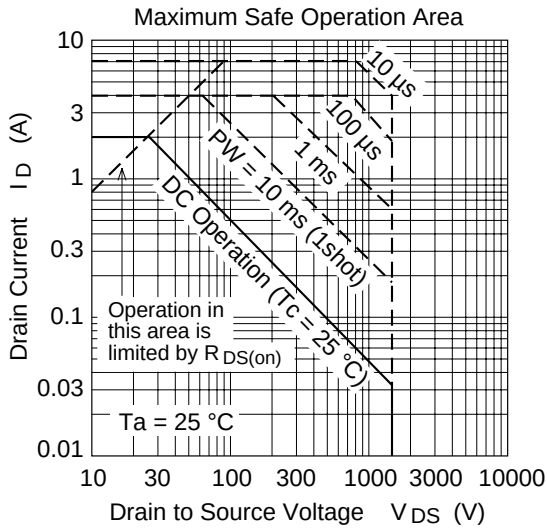
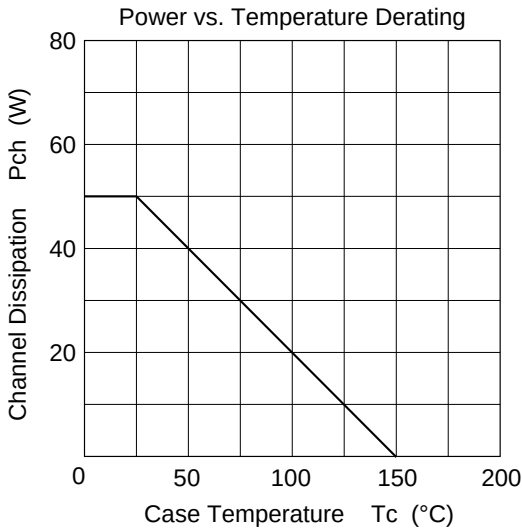
Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	1500	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	2	A
Drain peak current	I _{D(pulse)} ^{*1}	7	A
Body to drain diode reverse drain current	I _{DR}	2	A
Channel dissipation	Pch ^{*2}	50	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

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

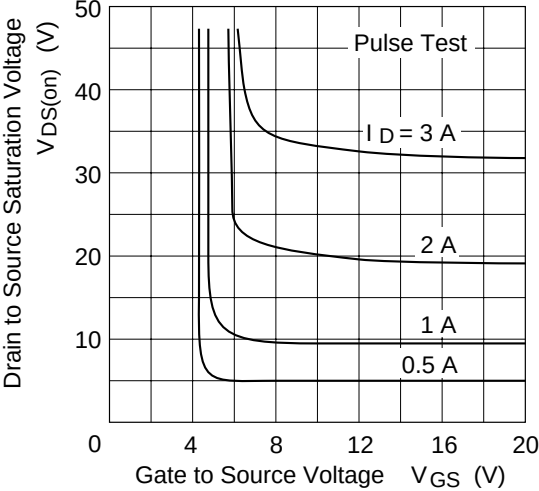
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	1500	—	—	V	I _D = 10 mA, V _{GS} = 0
Gate to source leak current	I _{GSS}	—	—	±1	μA	V _{GS} = ±20 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	500	μA	V _{DS} = 1200 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	2.0	—	4.0	V	I _D = 1 mA, V _{DS} = 10 V
Static drain to source on state resistance	R _{DS(on)}	—	9	12	Ω	I _D = 1 A V _{GS} = 15 V ^{*1}
Forward transfer admittance	y _{fs}	0.45	0.75	—	S	I _D = 1 A V _{DS} = 20 V ^{*1}
Input capacitance	Ciss	—	990	—	pF	V _{DS} = 10 V
Output capacitance	Coss	—	125	—	pF	V _{GS} = 0
Reverse transfer capacitance	Crss	—	60	—	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	—	17	—	ns	I _D = 1 A
Rise time	t _r	—	50	—	ns	V _{GS} = 10 V
Turn-off delay time	t _{d(off)}	—	150	—	ns	R _L = 30 Ω
Fall time	t _f	—	50	—	ns	
Body to drain diode forward voltage	V _{DF}	—	0.9	—	V	I _F = 2 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	1750	—	ns	I _F = 20 A, V _{GS} = 0, di _F / dt = 100 A / μs

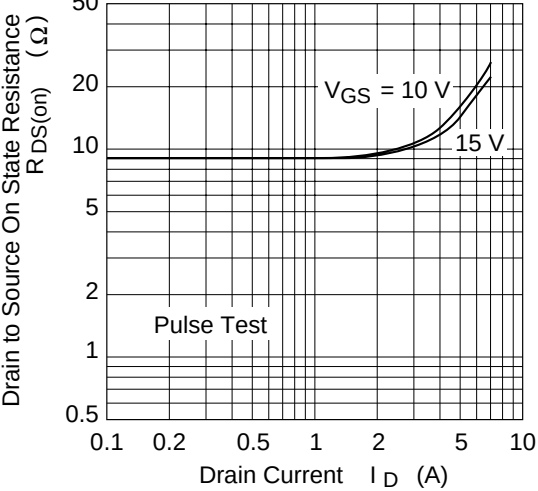
Note 1. Pulse Test



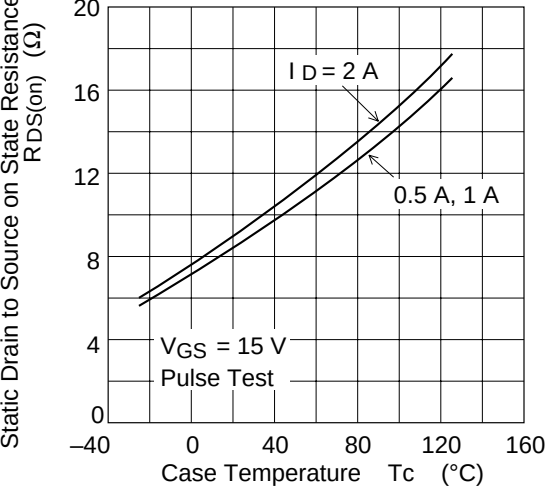
Drain to Source Saturation Voltage vs. Gate to Source Voltage



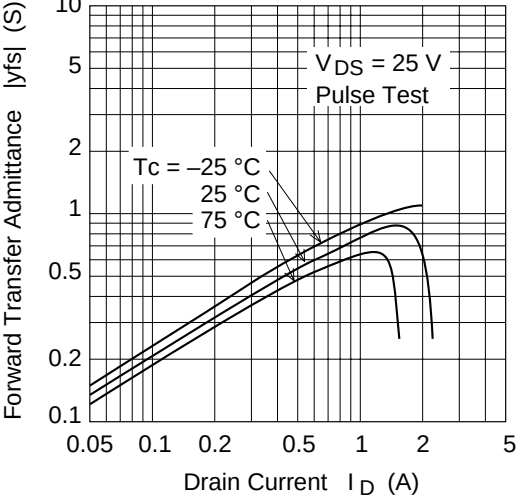
Static Drain to Source State Resistance vs. Drain Current

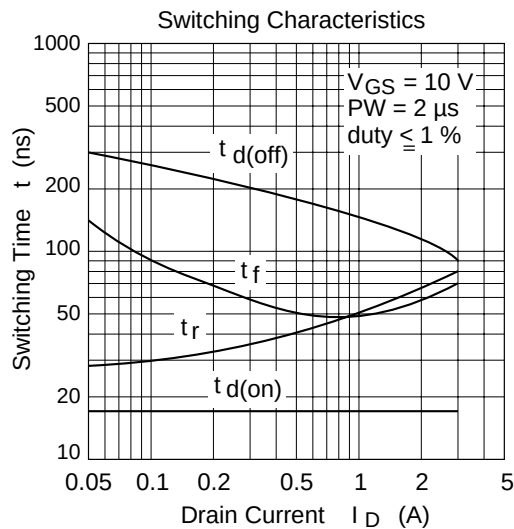
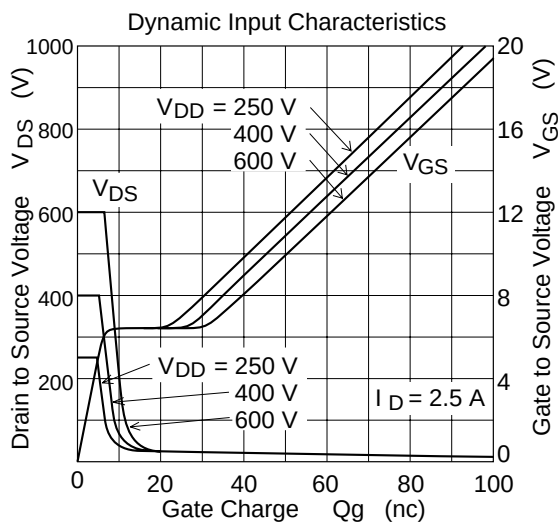
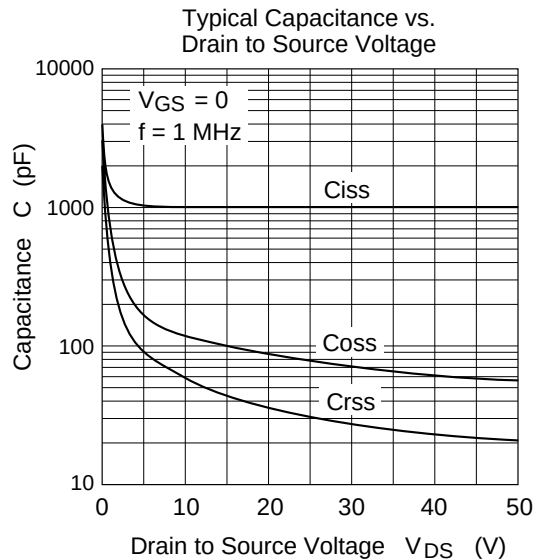
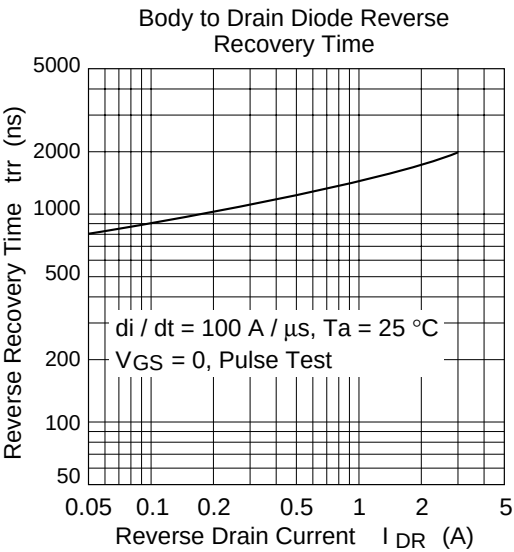


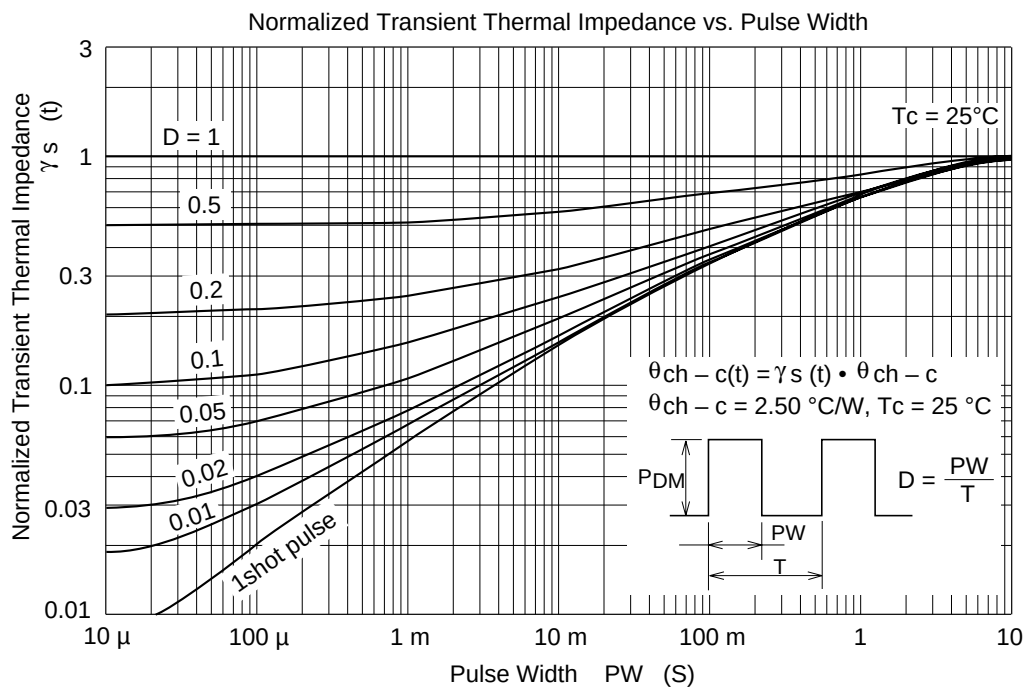
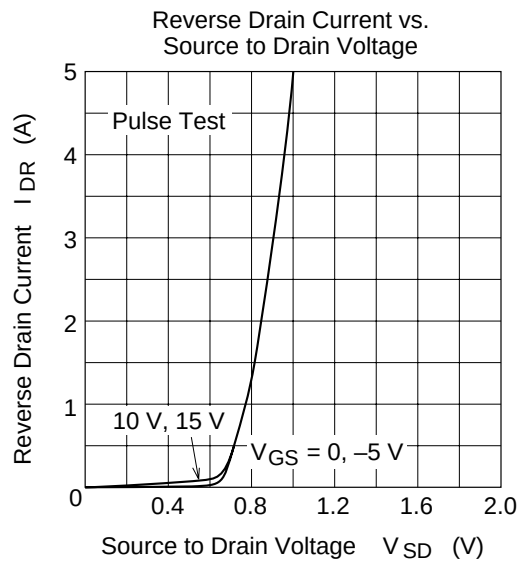
Static Drain to Source on State Resistance vs. Temperature



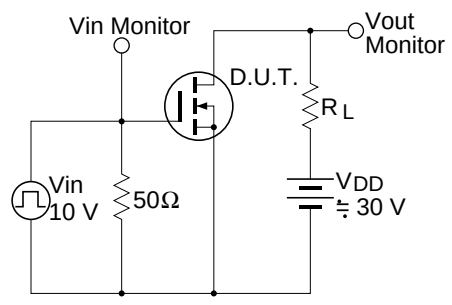
Forward Transfer Admittance vs. Drain Current



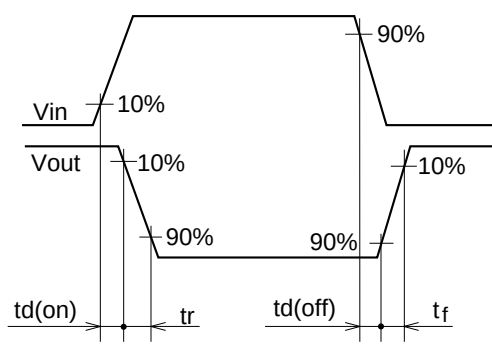


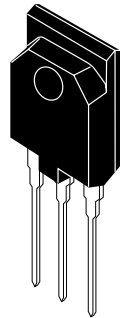
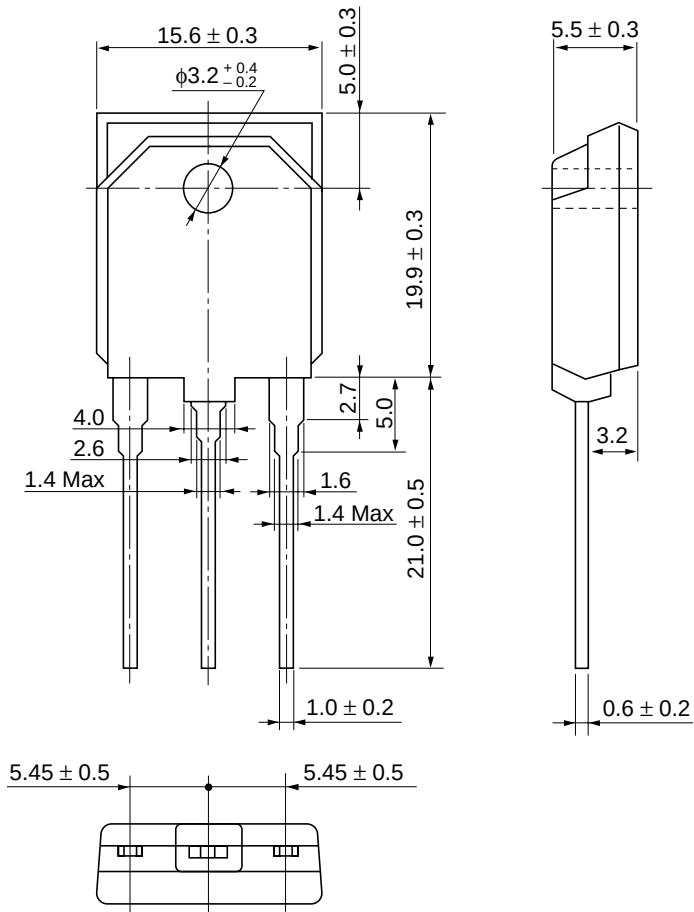


Switching Time Test Circuit



Waveform





Hitachi Code	TO-3PFM
JEDEC	—
EIAJ	—
Weight (reference value)	5.6 g

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HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor (America) Inc. 179 East Tasman Drive, San Jose, CA 95134 Tel: <1> (408) 433-1990 Fax: <1> (408) 433-0223	Hitachi Europe GmbH Electronic components Group Dornacher Straße 3 D-85622 Feldkirchen, Munich Germany Tel: <49> (89) 9 9180-0 Fax: <49> (89) 9 29 30 00 Hitachi Europe Ltd. Electronic Components Group. Whitebrook Park Lower Cookham Road Maidenhead Berkshire SL6 8YA, United Kingdom Tel: <44> (1628) 585000 Fax: <44> (1628) 778322
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Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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