2SK1579

Silicon N-Channel MOS FET

HITACHI

Application

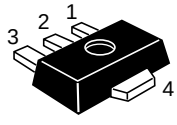
High speed power switching

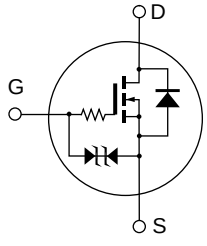
Features

- Low on-resistance
- High speed switching
- Suitable for low voltage operation

Outline

UPAK





1. Gate
2. Drain
3. Source
4. Drain

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Absolute Maximum Ratings (Ta = 25°C unless otherwise specified.)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	12	V
Gate to source voltage	V_{GSS}	±7	V
Drain current	I_D	2	A
Drain peak current	$I_{D(pulse)}$*[1]	4	A
Body to drain diode reverse drain current	I_{DR}	2	A
Channel power dissipation	Pch*[2]	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

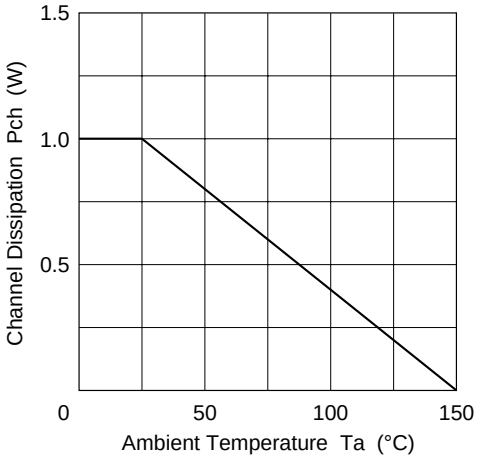
Notes 1. PW ≤ 100 μs, duty cycle ≤ 10%
2. Value on the almina ceramic board (12.5 × 20 × 0.7 mm)

Electrical Characteristics (Ta = 25°C unless otherwise specified.)

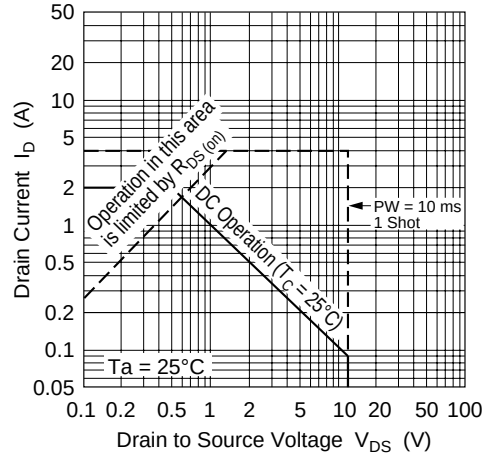
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source cutoff current	I_{DSS}	—	—	1	μA	V_{DS} = 8 V, V_{GS} = 0
Gate to source cutoff current	I_{GSS}	—	—	±5	μA	V_{GS} = ±6.5 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	0.4	—	1.4	V	V_{DS} = 5 V, I_D = 100 μA
Drain to source on resistance (1)	$R_{DS(on)}1$	—	0.36	0.7	Ω	V_{GS} = 2.2 V, I_D = 0.5 A
Drain to source on resistance (2)	$R_{DS(on)}2$	—	0.25	0.35	Ω	V_{GS} = 4 V, I_D = 1 A
DC forward transfer admittance	|yfs|	1	2.5	—	S	V_{DS} = 5 V, I_D = 1 A, ΔV_{GS} = 0.1 V
Input capacitance	Ciss	—	110	—	pF	V_{DS} = 5 V, V_{GS} = 0, f = 1 MHz
Reverse transfer capacitance	Crss	—	30	—	pF	
Output capacitance	Coss	—	150	—	pF	
Turn-on time	$t_{(on)}$	—	500	—	ns	I_D = 0.2 A, V_{GS} = 0, Vin = 4 V, R_L = 51 Ω
Turn-off time	$t_{(off)}$	—	1500	—	ns	

Note 1. Marking is “DY”.

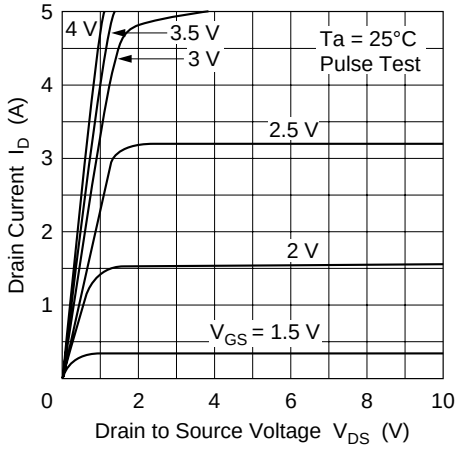
Power vs. Temperature Derating



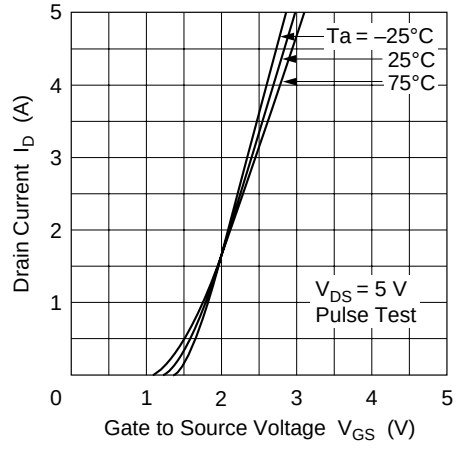
Maximum Safe Operation Area



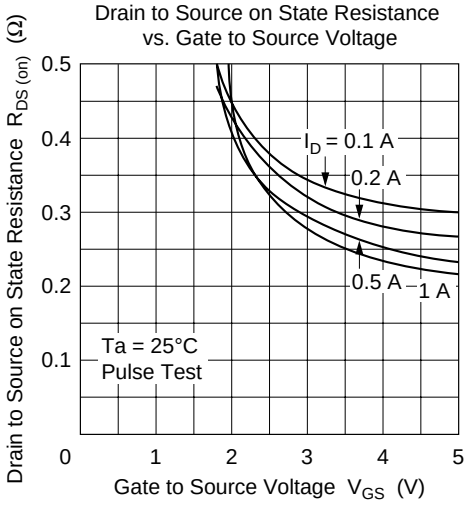
Typical Output Characteristics



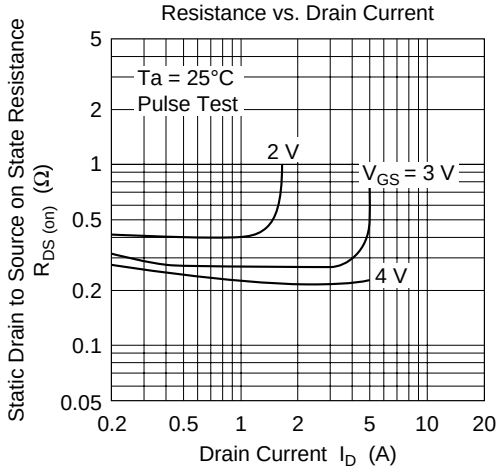
Typical Transfer Characteristics



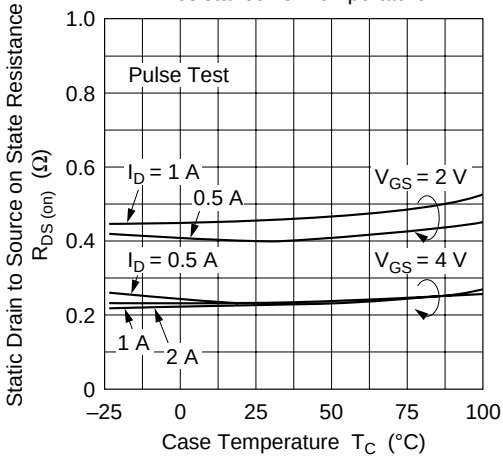
Drain to Source on State Resistance vs. Gate to Source Voltage



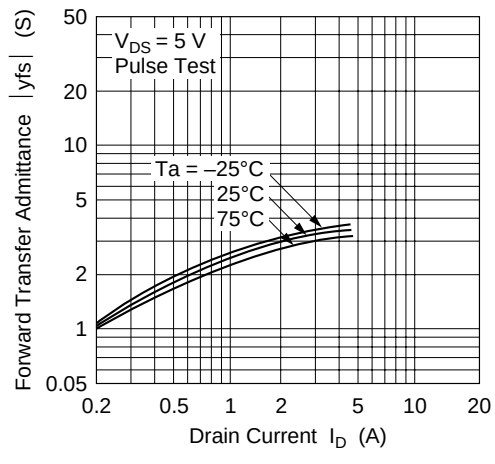
Static Drain to Source on State Resistance vs. Drain Current



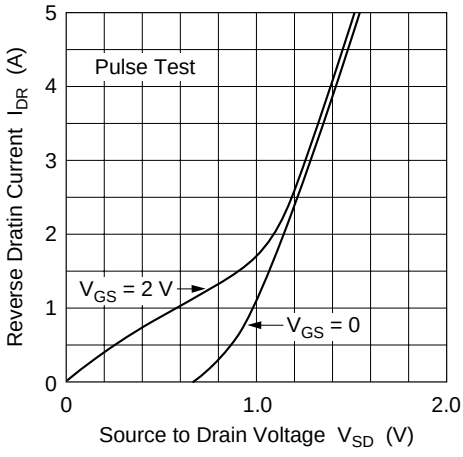
Static Drain to Source on State Resistance vs. Temperature



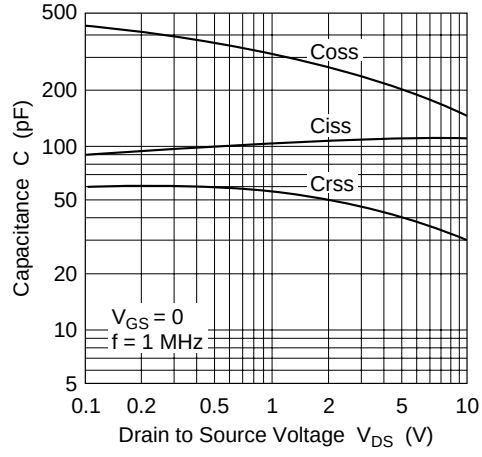
Forward Transfer Admittance vs. Drain Current



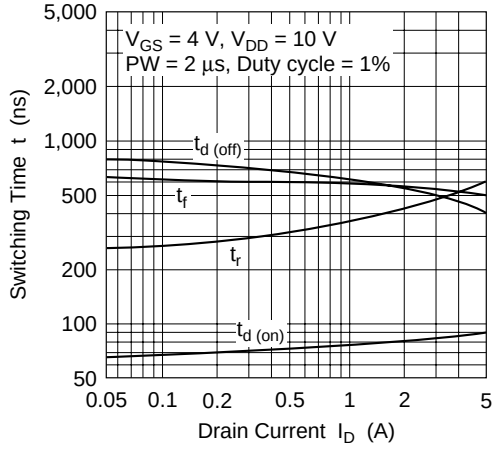
Reverse Drain Current vs.
Sourse to Drain Voltage



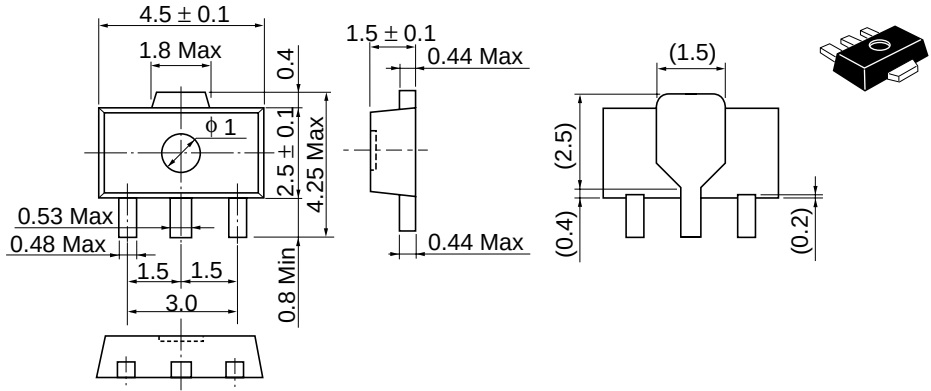
Typical Capacitance vs.
Drain to Source Voltage



Switching Characteristics



Unit: mm



Hitachi Code	UPAK
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.050 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

URL
NorthAmerica : http:semiconductor.hitachi.com/
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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

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