2SK1579

Silicon N-Channel MOS FET

HITACHI

Application

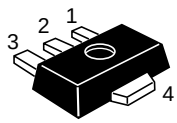
High speed power switching

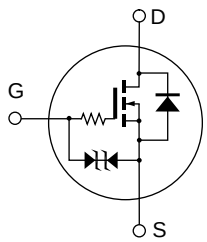
Features

- 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
Channel power dissipation	Pch*[2]	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

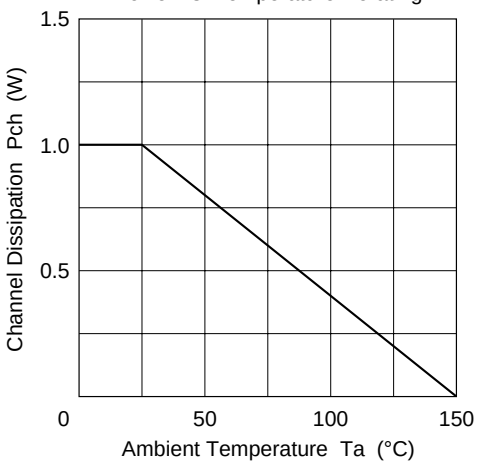
Notes 1. PW 100 µs, duty cycle 10%
2. Value on the almina ceramic board (12.5 × 20 × 0.7 mm)

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

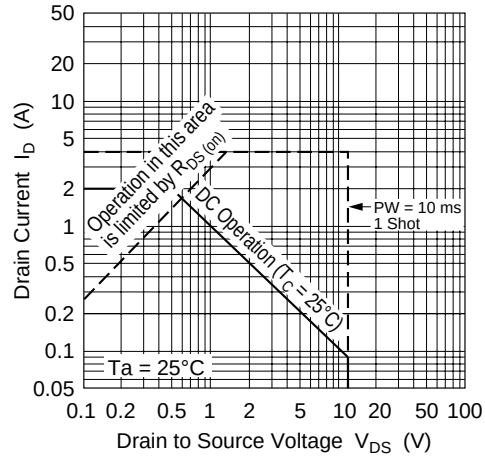
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source cutoff current	I_{DSS}	—	—	1	µA	V_{DS} = 8 V, V_{GS} = 0
Gate to source cutoff current	I_{GSS}	—	—	±5	µA	V_{GS} = ±6.5 V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	0.4	—	1.4	V	V_{DS} = 5 V, I_D = 100 µA
Drain to source on resistance (1)	$R_{DS(on)}1$	—	0.36	0.7		V_{GS} = 2.2 V, I_D = 0.5 A
Drain to source on resistance (2)	$R_{DS(on)}2$	—	0.25	0.35		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”.

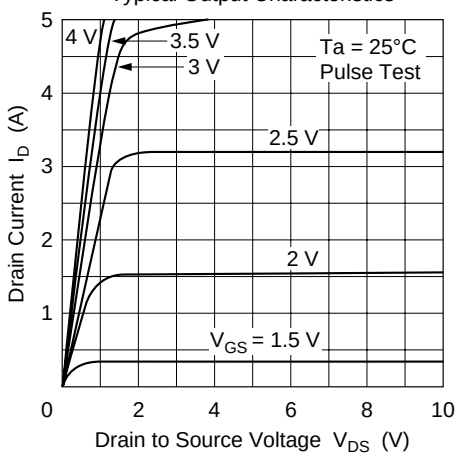
Power vs. Temperature Derating



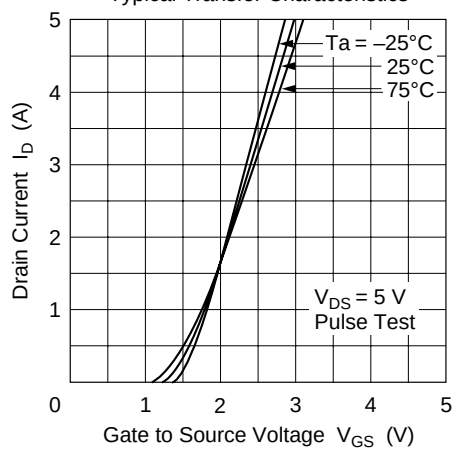
Maximum Safe Operation Area



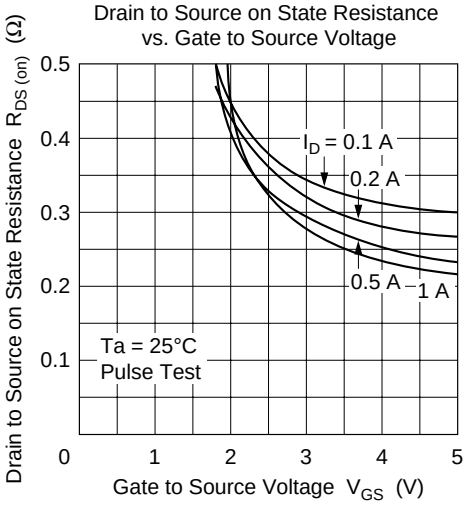
Typical Output Characteristics



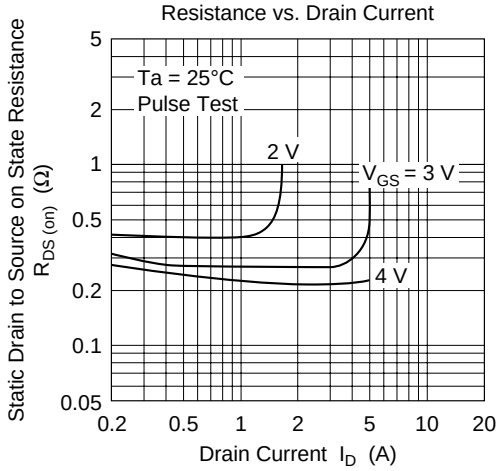
Typical Transfer Characteristics



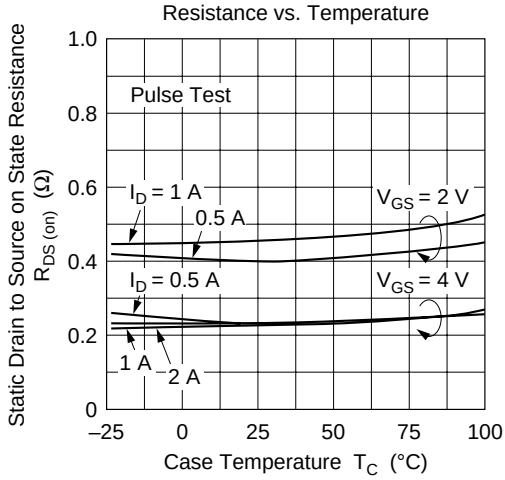
Drain to Source on State Resistance vs. Gate to Source Voltage



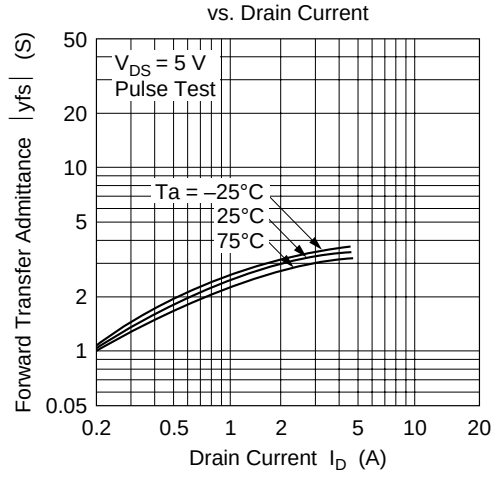
Static Drain to Source on State Resistance vs. Drain Current



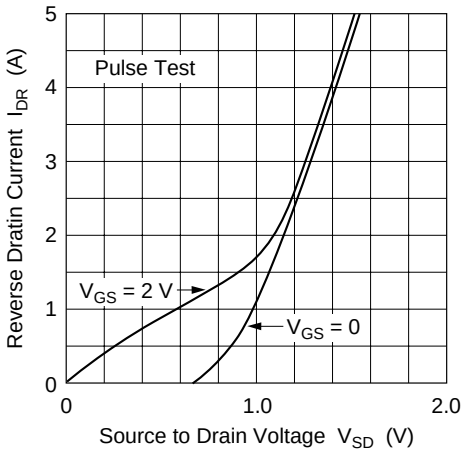
Static Drain to Source on State Resistance vs. Temperature



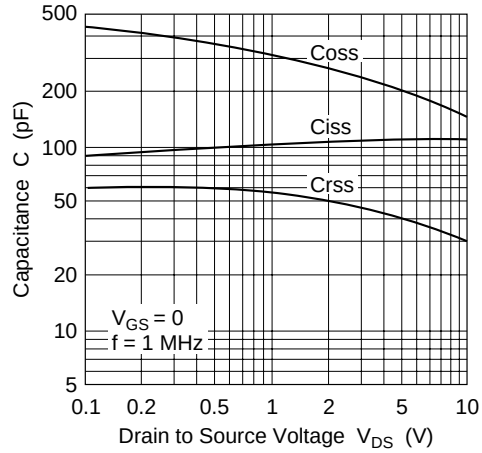
Forward Transfer Admittance vs. Drain Current



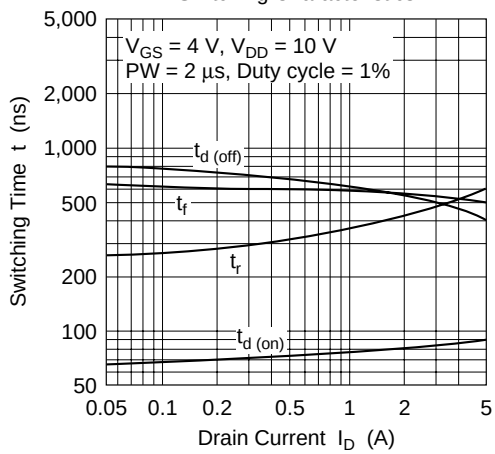
Reverse Drain Current vs.
Sourse to Drain Voltage



Typical Capacitance vs.
Drain to Source Voltage



Switching Characteristics



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