
2SK1579

Silicon N-Channel MOS FET

HITACHI

ADE-208-1296 (Z)
1st. Edition
Mar. 2001

Application

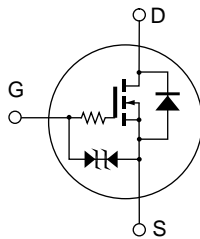
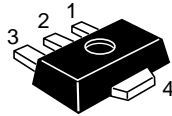
High speed power switching

Features

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

Outline

UPAK



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

2SK1579

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	P_{ch}^{*2}	1	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

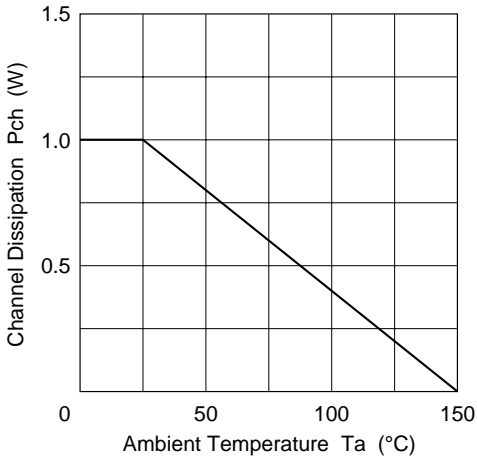
- Notes
1. $PW \leq 100 \mu s$, duty cycle $\leq 10\%$
 2. Value on the alumina ceramic board ($12.5 \times 20 \times 0.7$ mm)

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

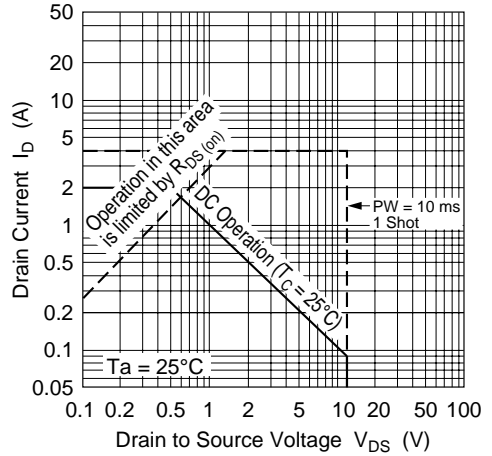
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source cutoff current	I_{DSS}	—	—	1	μA	$V_{DS} = 8\text{ V}, V_{GS} = 0$
Gate to source cutoff current	I_{GSS}	—	—	± 5	μA	$V_{GS} = \pm 6.5\text{ V}, V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.4	—	1.4	V	$V_{DS} = 5\text{ V}, I_D = 100\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

Note 1. Marking is "DY".

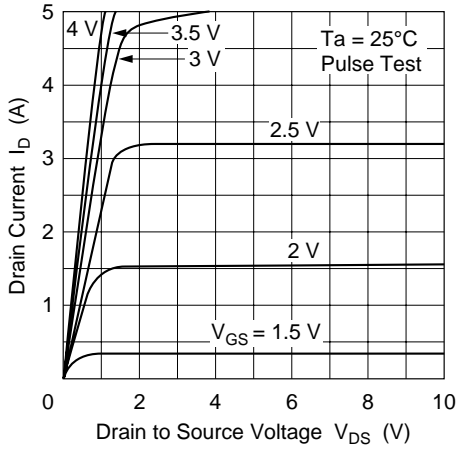
Power vs. Temperature Derating



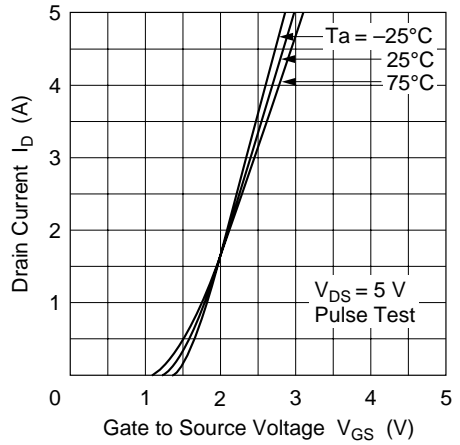
Maximum Safe Operation Area

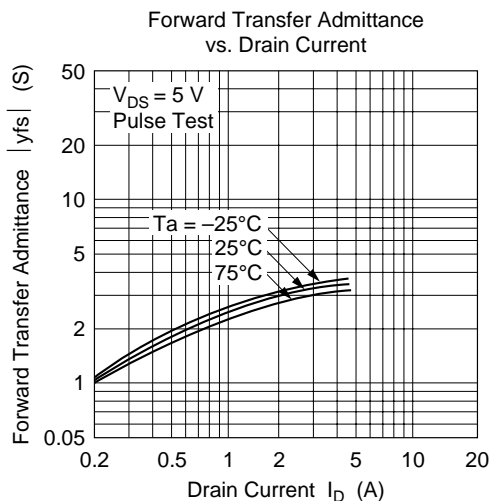
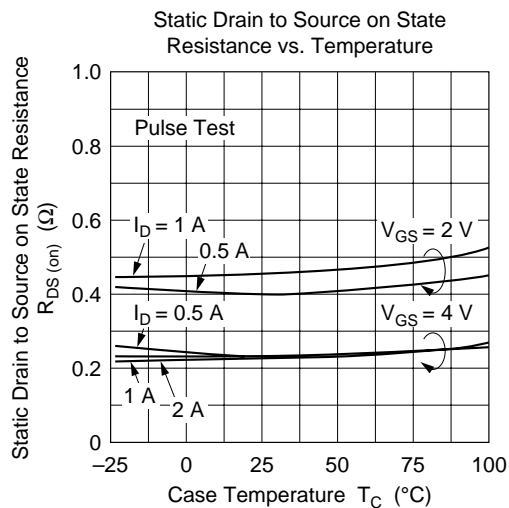
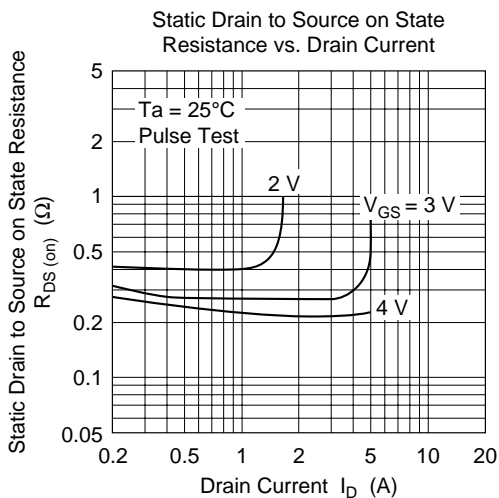
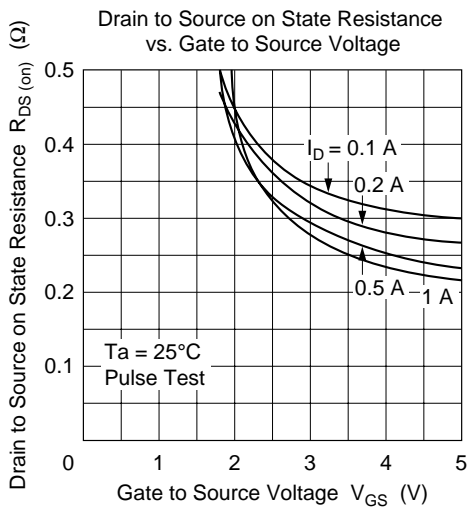


Typical Output Characteristics

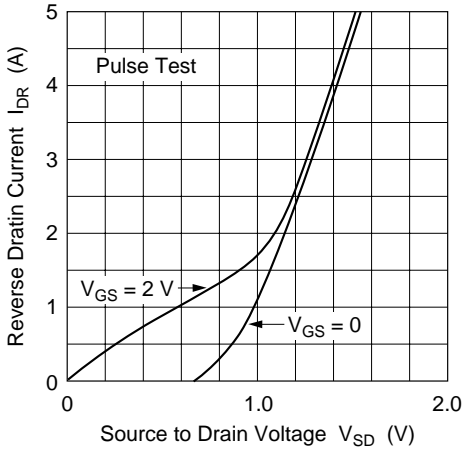


Typical Transfer Characteristics

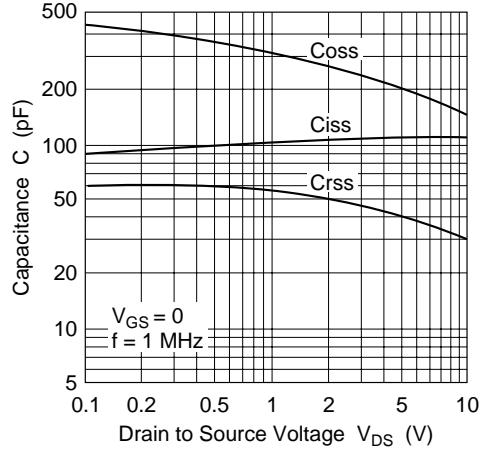




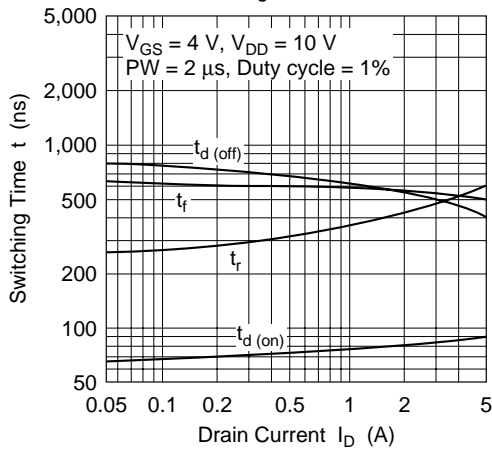
Reverse Drain Current vs. Source to Drain Voltage



Typical Capacitance vs. Drain to Source Voltage



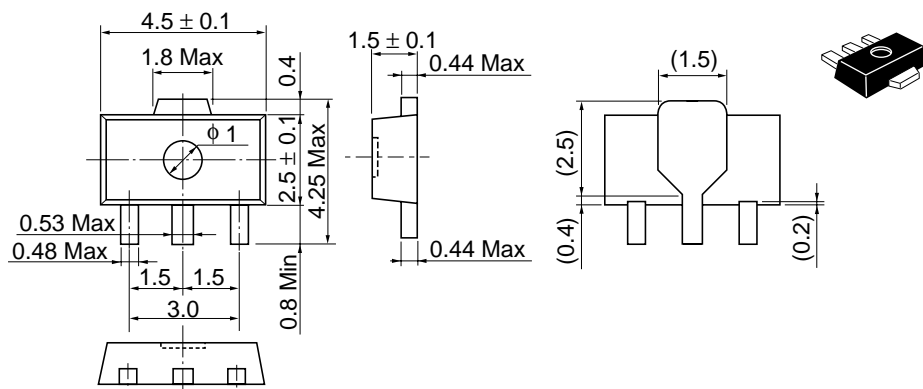
Switching Characteristics



Package Dimensions

As of January, 2001

Unit: mm



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

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