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# 2SK2315

Silicon N-Channel MOS FET

# HITACHI

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## Application

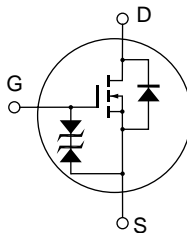
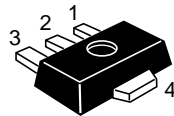
High speed power switching

## Features

- Low on-resistance
- High speed switching
- Low drive current
- 2.5 V gate drive device can be driven from 3 V source.
- Suitable for DC-DC converter, motor drive, power switch, solenoid drive

## Outline

UPAK



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

Absolute Maximum Ratings (Ta = 25°C)

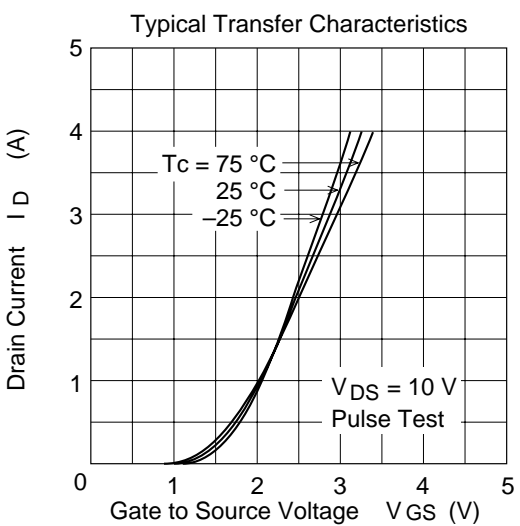
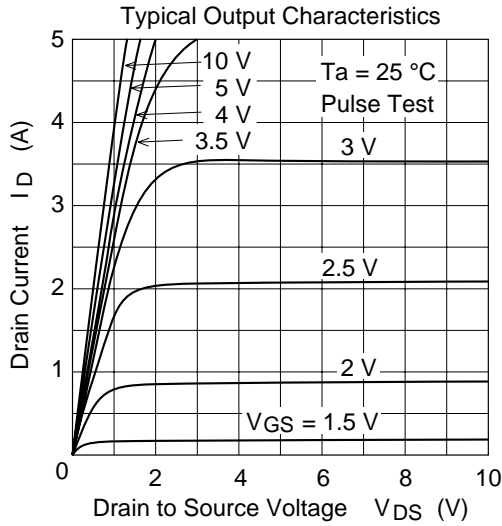
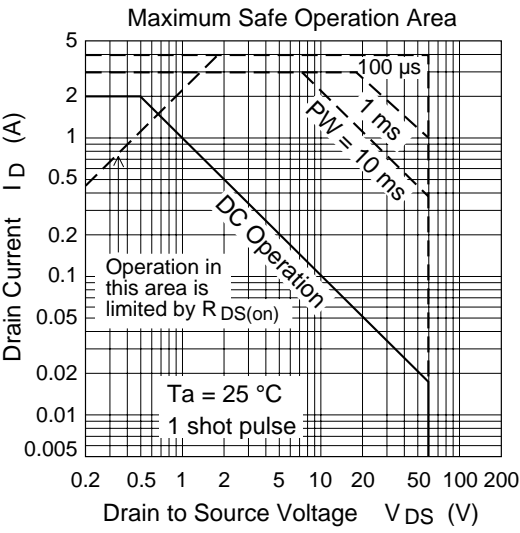
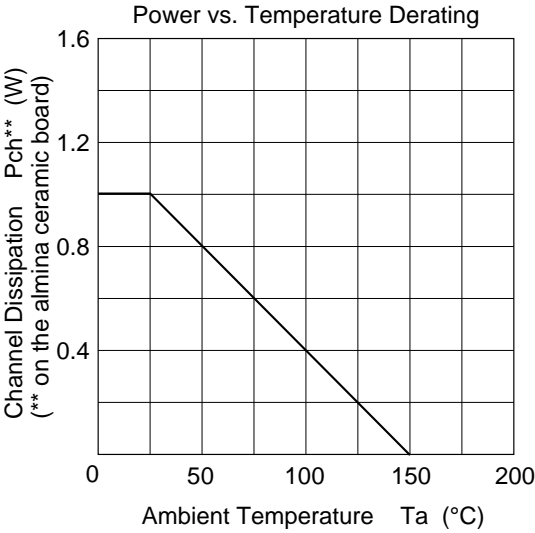
Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	60	V
Gate to source voltage	$V_{GSS}$	$\pm 20$	V
Drain current	$I_D$	2	A
Drain peak current	$I_{D(pulse)}^{*1}$	4	A
Body to drain diode reverse drain current	$I_{DR}$	2	A
Channel dissipation	$Pch^{*2}$	1	W
Channel temperature	$Tch$	150	°C
Storage temperature	$Tstg$	-55 to +150	°C

- Notes
- 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1 \%$
  - 2. When using the alumina ceramic board ( $12.5 \times 20 \times 0.7mm$ )
  - 3. Marking is “TY”

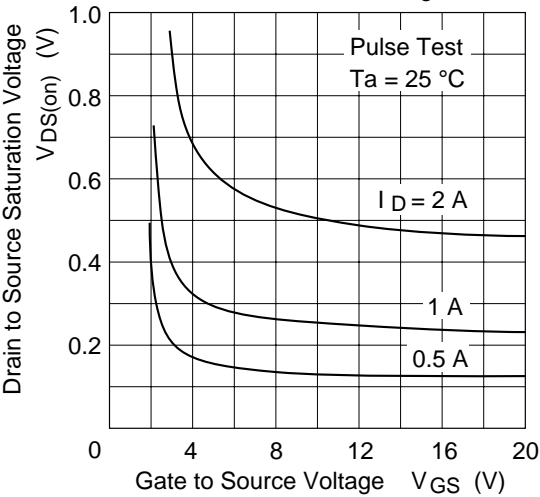
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 20$	—	—	V	$I_G = \pm 100 \mu A$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 5$	$\mu A$	$V_{GS} = \pm 16 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	5	$\mu A$	$V_{DS} = 50 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 1 \text{ mA}$ , $V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.4	0.6	$\Omega$	$I_D = 0.3 \text{ A}$ $V_{GS} = 3 \text{ V}^{*1}$
		—	0.35	0.45	$\Omega$	$I_D = 1 \text{ A}$ $V_{GS} = 4 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	1.5	1.8	—	S	$I_D = 1 \text{ A}$ $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	$C_{iss}$	—	173	—	pF	$V_{DS} = 10 \text{ V}$
Output capacitance	$C_{oss}$	—	85	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	23	—	pF	$f = 1 \text{ MHz}$
Turn-on time	$t_{on}$	—	21	—	ns	$I_D = 1 \text{ A}$ , $R_L = 30 \Omega$
Turn-off time	$t_{off}$	—	85	—	ns	$V_{GS} = 10 \text{ V}$

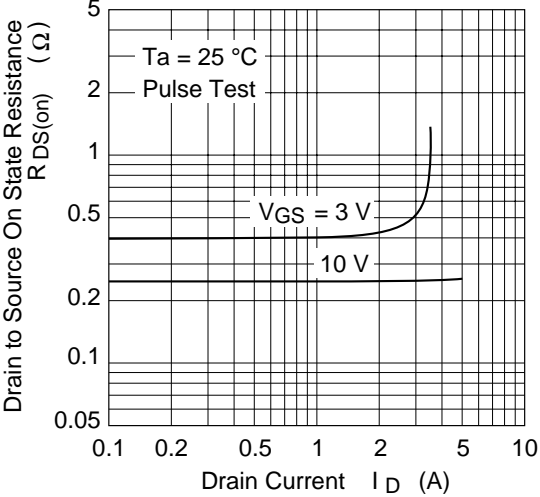
Note 1. Pulse Test



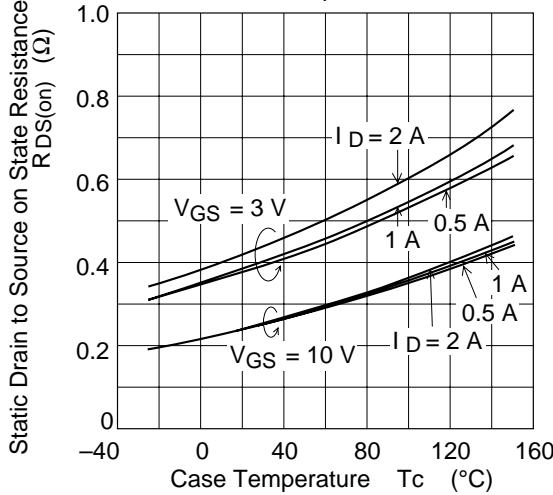
Drain to Source Saturation Voltage vs.  
Gate to Source Voltage



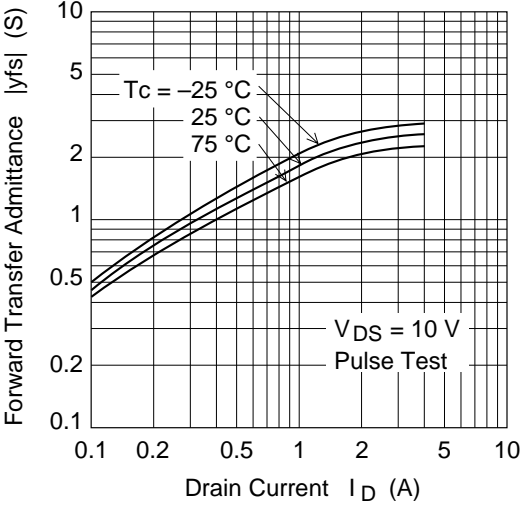
Static Drain to Source State Resistance  
vs. Drain Current

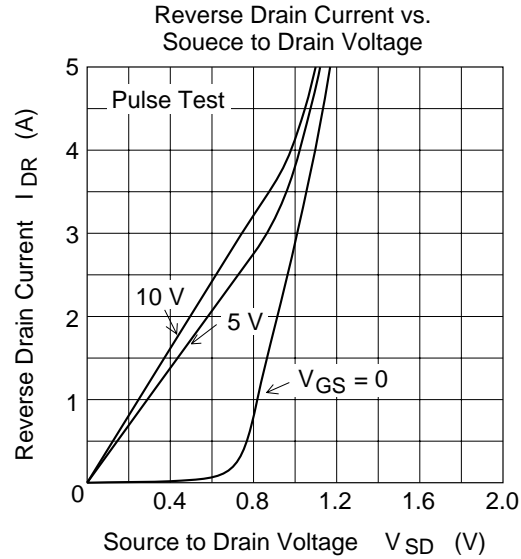
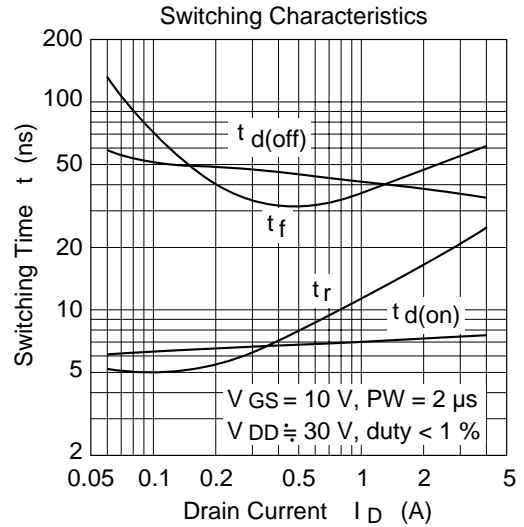
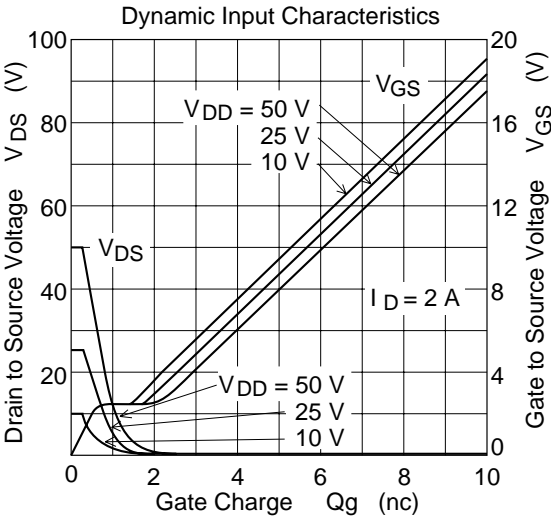
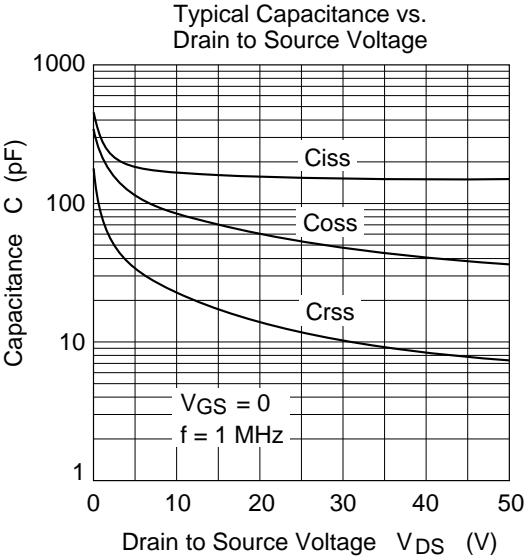


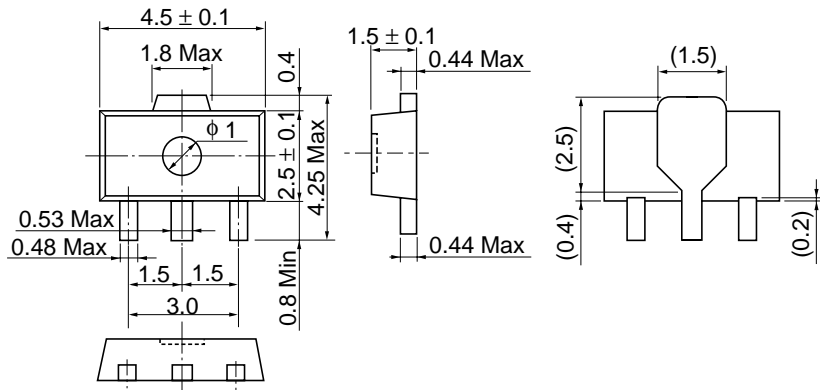
Static Drain to Source on State Resistance  
vs. Temperature



Forward Transfer Admittance vs.  
Drain Current







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

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