
2SK1334

Silicon N-Channel MOS FET

HITACHI

Application

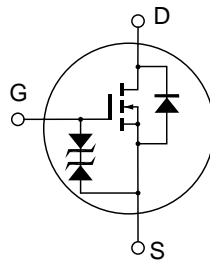
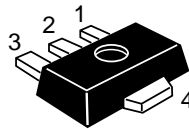
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary Breakdown
- Suitable for switching regulator and DC-DC converter

Outline

UPAK



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

2SK1334

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	200	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	1	A
Drain peak current	$I_{D(pulse)}^{*1}$	2	A
Body to drain diode reverse drain current	I_{DR}	1	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 $\leq 1\%$

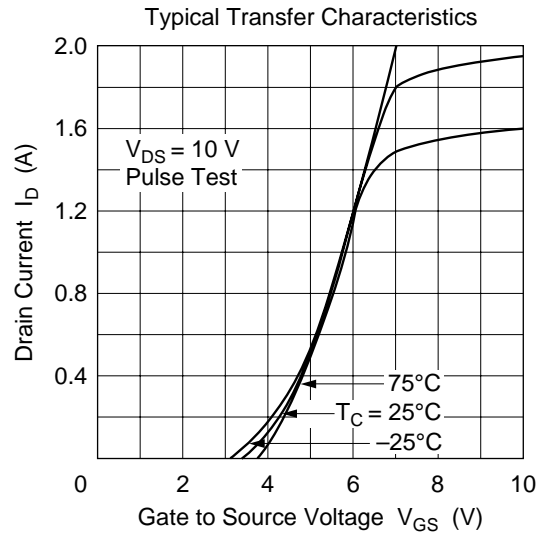
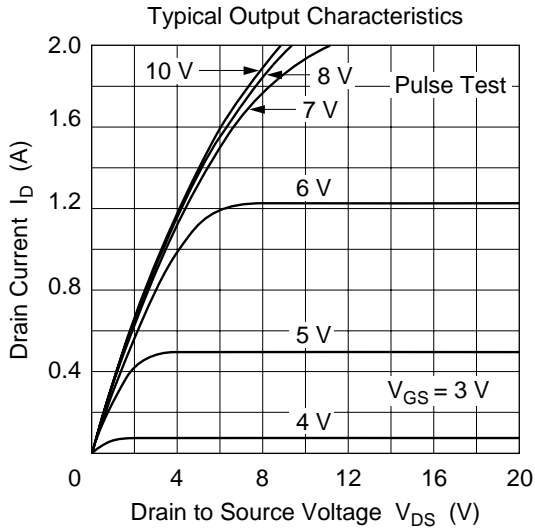
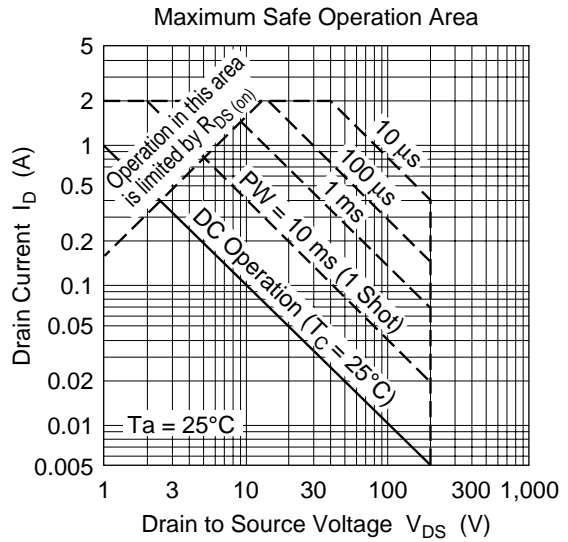
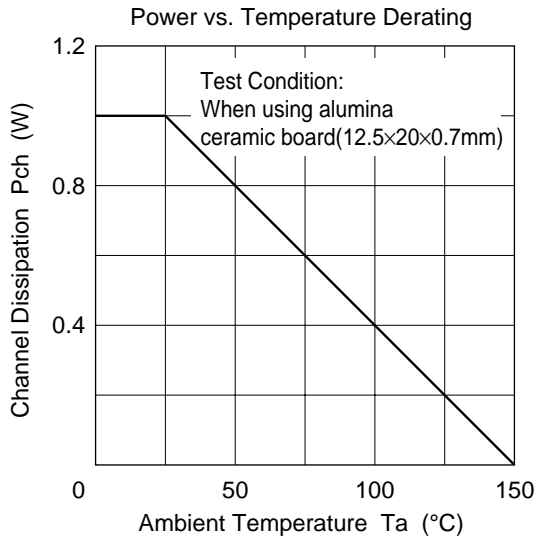
2. When using the alumina ceramic board (12.5 × 20 × 0.7 mm)

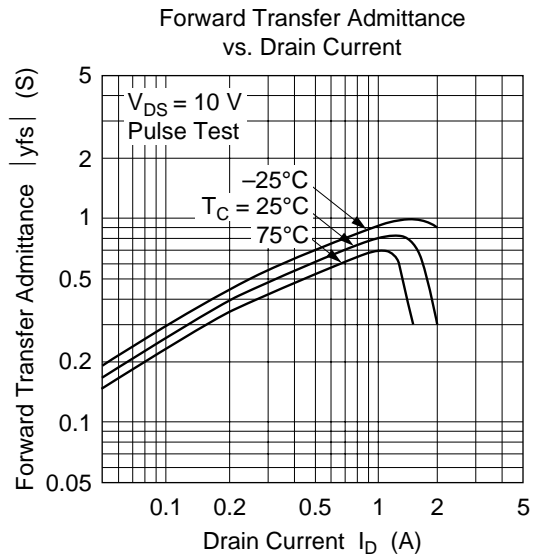
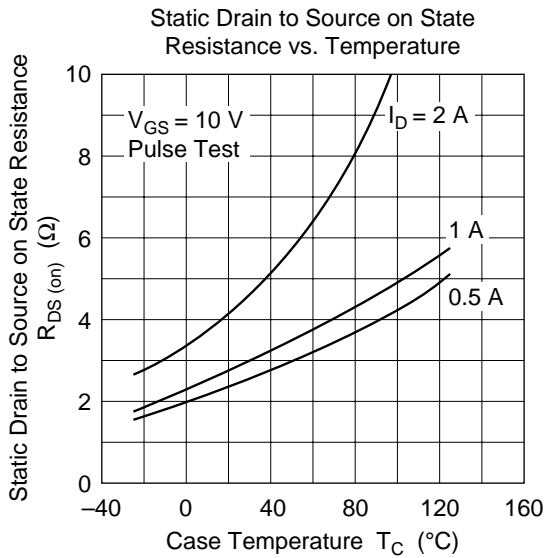
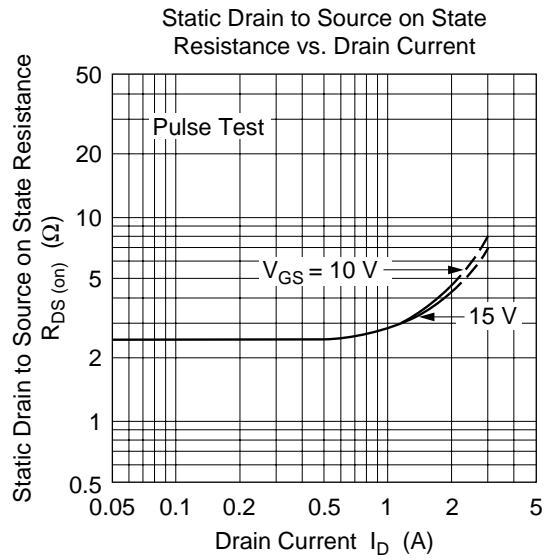
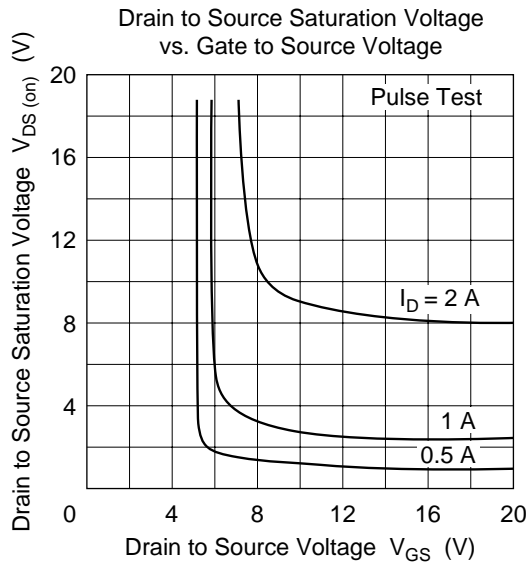
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	200	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	50	μA	$V_{DS} = 160 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	4.0	V	$I_D = 1 \text{ mA}, V_{DS} = 10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	2.5	3.8	Ω	$I_D = 0.5 \text{ A}, V_{GS} = 10 \text{ V}^{*1}$
		—	4.5	7.0	Ω	$I_D = 2 \text{ A}, V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	0.4	0.6	—	S	$I_D = 0.5 \text{ A}, V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	C_{iss}	—	80	—	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	C_{oss}	—	40	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance	C_{rss}	—	7	—	pF	
Turn-on delay time	$t_{d(on)}$	—	5	—	ns	$I_D = 0.5 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	t_r	—	8	—	ns	$R_L = 60 \text{ }\Omega$
Turn-off delay time	$t_{d(off)}$	—	10	—	ns	
Fall time	t_f	—	7	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1.0	—	V	$I_F = 1 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	75	—	ns	$I_F = 1 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

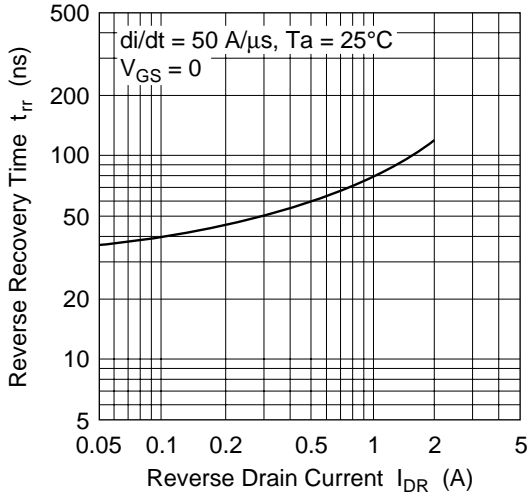
Notes: 1. Pulse test

2. Marking for 2SK1334 is "BY".

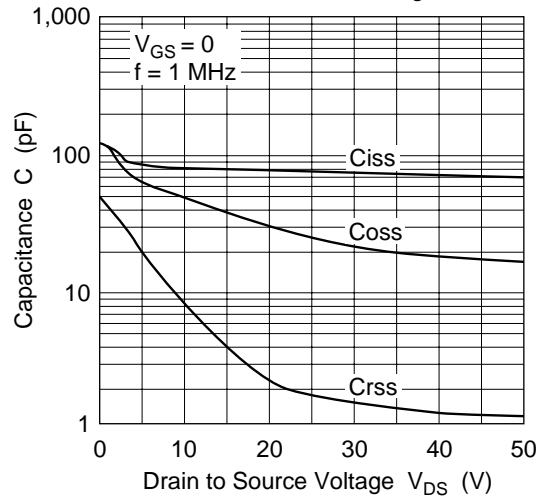




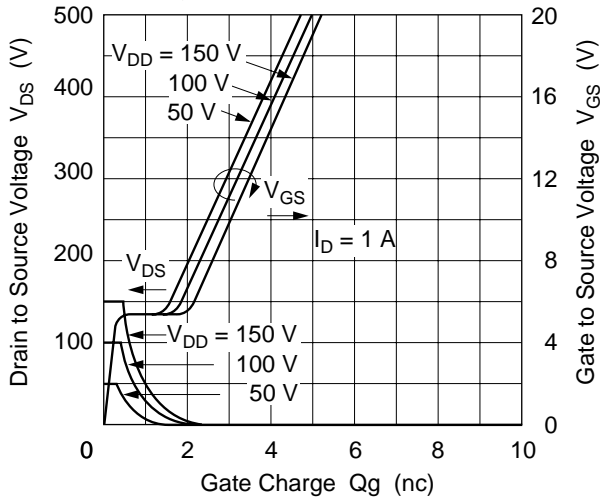
Reverse Recovery Time vs. Reverse Drain Current



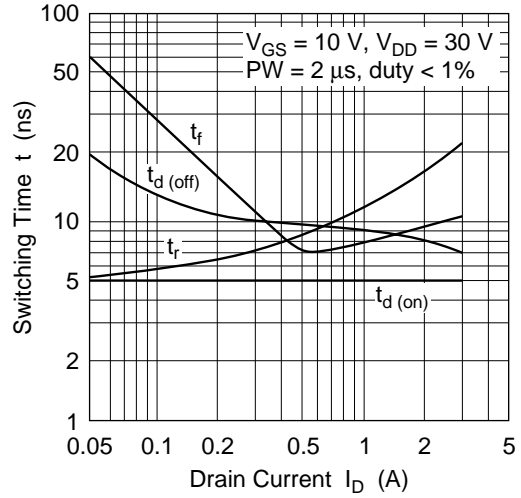
Typical Capacitance vs. Drain to Source Voltage

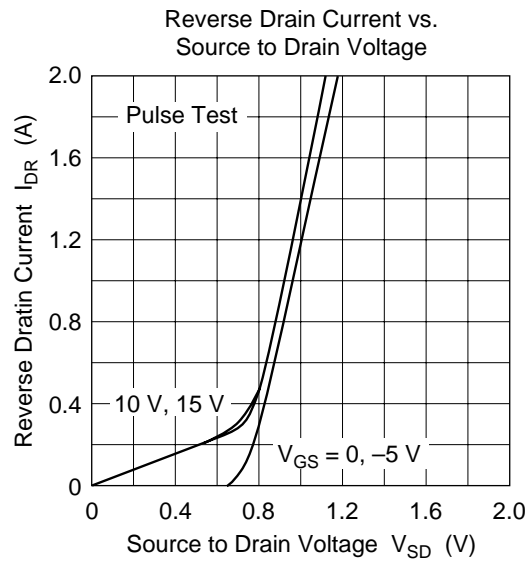


Dynamic Input Characteristics

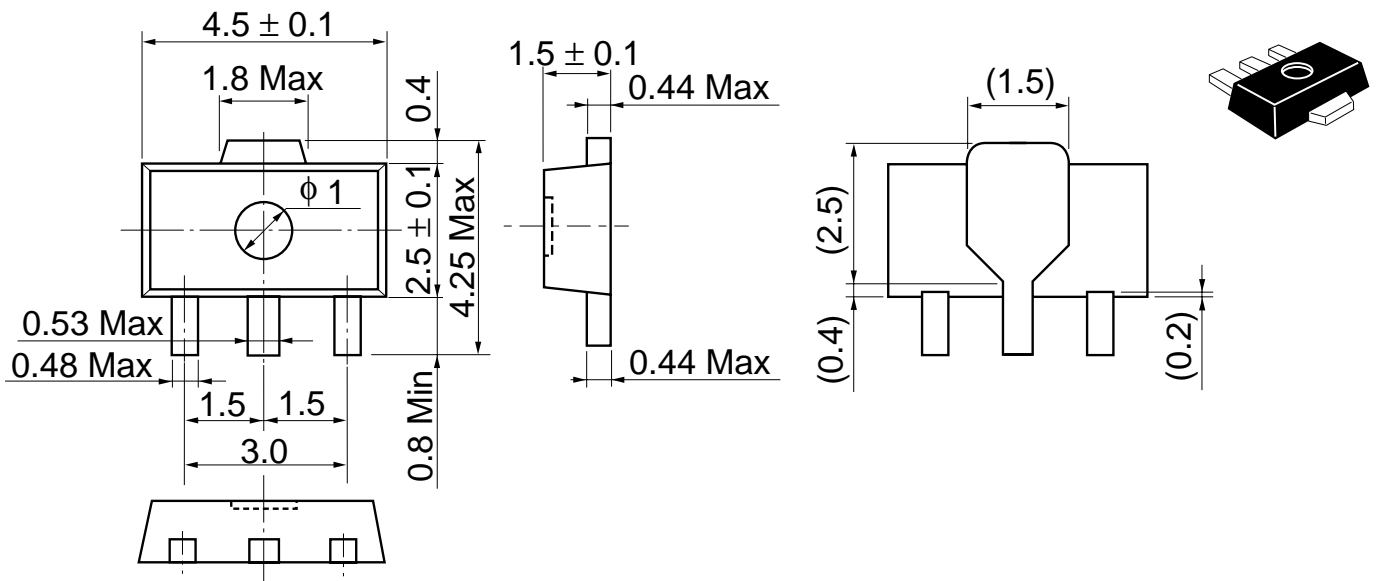


Switching Characteristics





Unit: mm



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

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