
2SK1335(L), 2SK1335(S)

Silicon N-Channel MOS FET

HITACHI

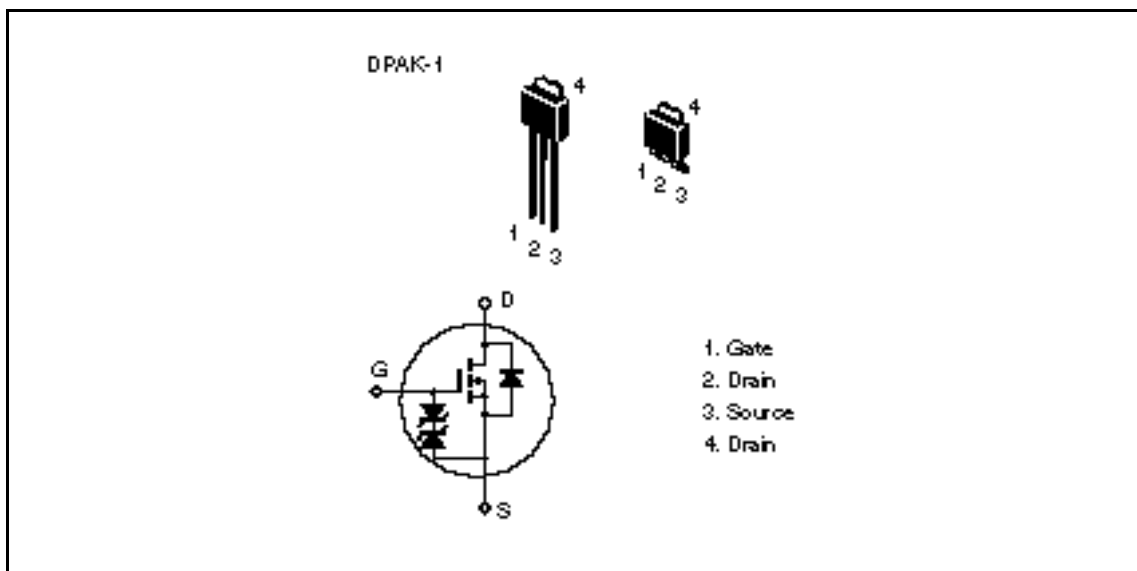
Application

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



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Absolute Maximum Ratings (Ta = 25°C)

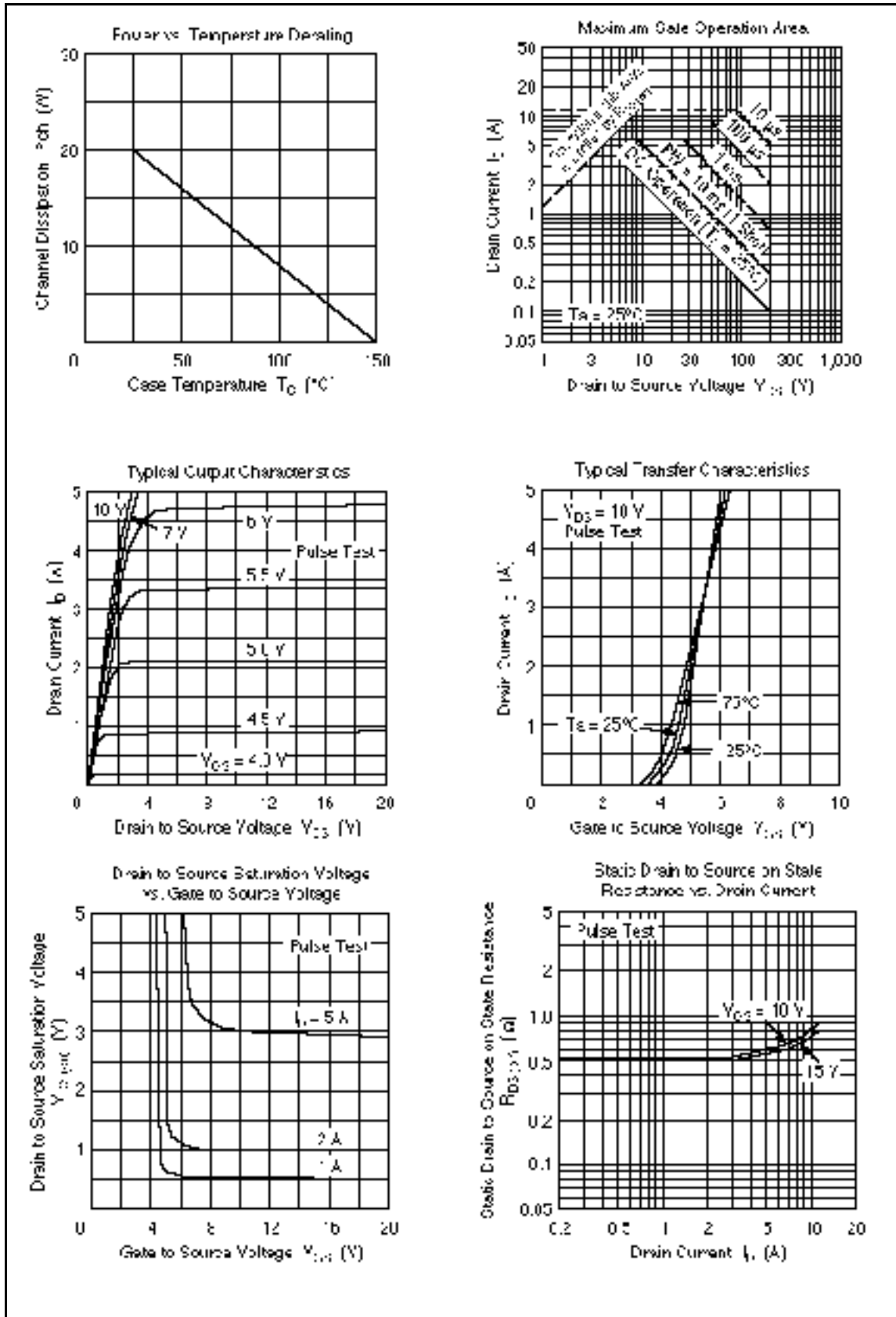
Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	200	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	3	A
Drain peak current	$I_{D(pulse)}^{*1}$	12	A
Body to drain diode reverse drain current	I_{DR}	3	A
Channel dissipation	Pch ^{*2}	20	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

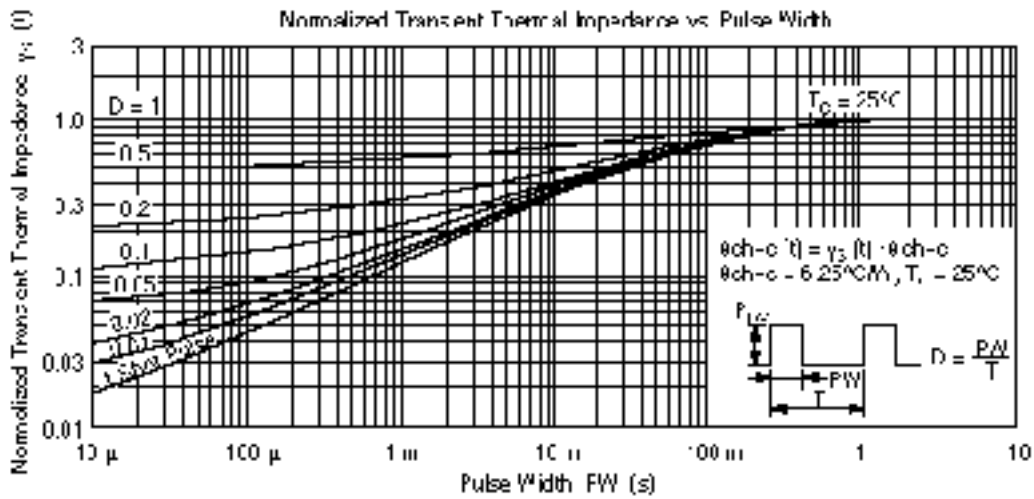
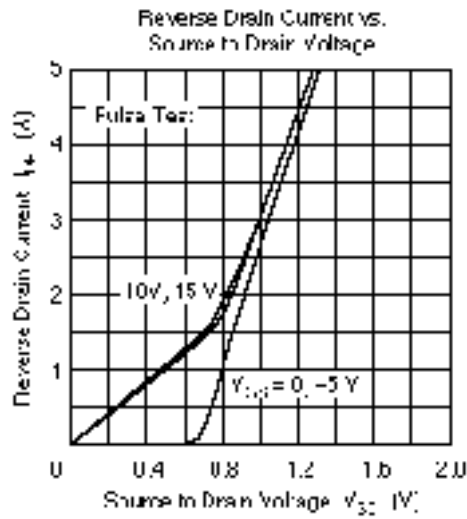
Notes: 1. PW 10 μs, duty cycle 1%
 2. Value at T_C = 25°C

Electrical Characteristics (Ta = 25°C)

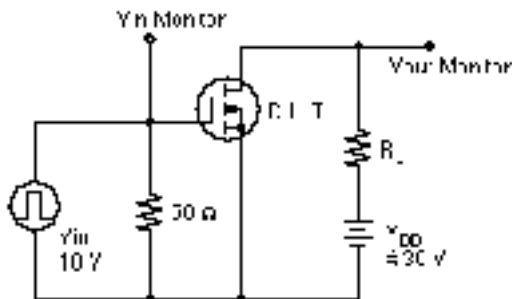
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	200	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \text{ } \mu\text{A}, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	100	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	$R_{DS(on)}$	—	0.5	0.8		$I_D = 2 \text{ A}, V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	yfs	1.5	2.3	—	S	$I_D = 2 \text{ A}, V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	Ciss	—	380	—	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	Coss	—	150	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	—	35	—	pF	
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$I_D = 2 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	t_r	—	27	—	ns	$R_L = 15$
Turn-off delay time	$t_{d(off)}$	—	30	—	ns	
Fall time	t_f	—	20	—	ns	
Body to drain diode forward voltage	V_{DF}	—	1.0	—	V	$I_F = 3 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	120	—	ns	$I_F = 3 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

Note: 1. Pulse test

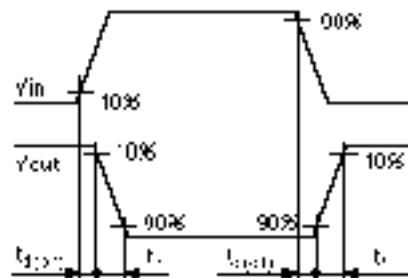




Switching Time Test Circuit



Waveforms



2SK1335(L), 2SK1335(S)

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