2SK3133(L),2SK3133(S)

Silicon N Channel MOS FET
High Speed Power Switching

HITACHI

ADE-208-720 (Z)
Target Specification
1st. Edition
February 1999

Features

- Low on-resistance
  $R_{DS(on)}$ = 7 mΩ typ.
- Low drive current
- 4 V gate drive device can be driven from 5 V source

Outline

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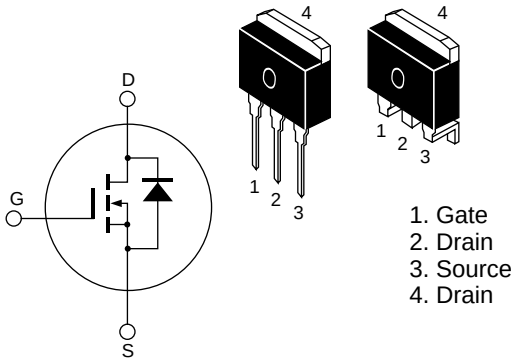

1. Gate
2. Drain
3. Source
4. Drain

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	50	A
Drain peak current	$I_{D(pulse)}$ Note 1	200	A
Body-drain diode reverse drain current	I_{DR}	50	A
Channel dissipation	Pch Note 2	50	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

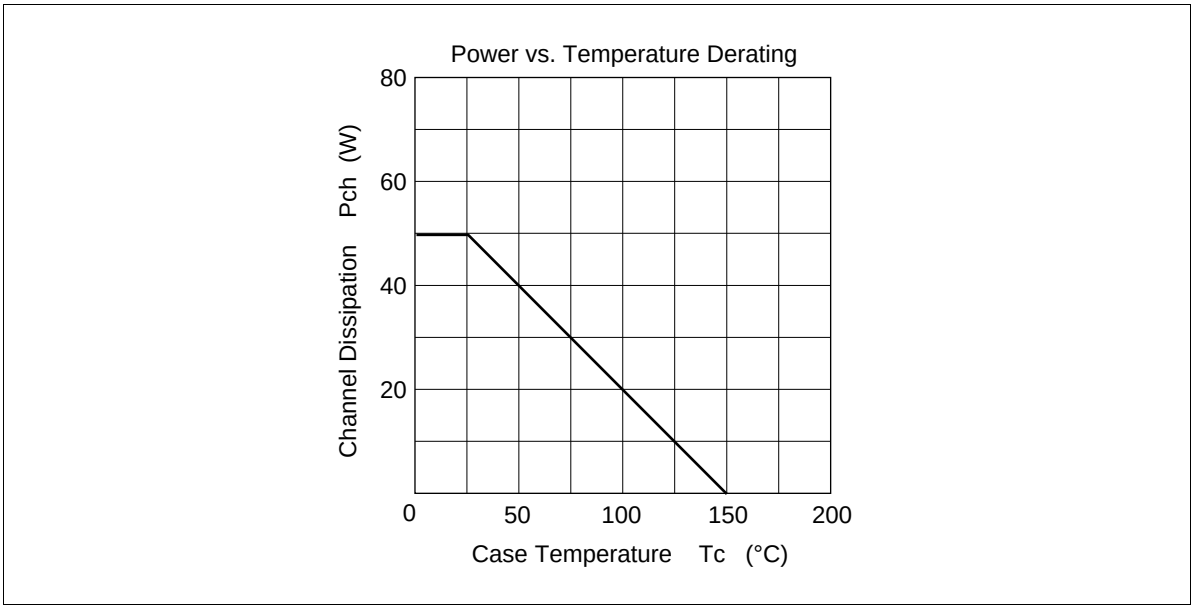
Note: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value at Tc = 25°C

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±0.1	µA	V_{GS} = ±20 V, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	10	µA	V_{DS} = 30 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.5	V	I_D = 1 mA, V_{DS} = 10 V Note 1
Static drain to source on state resistance	$R_{DS(on)}$	—	7	10	mΩ	I_D = 25 A, V_{GS} = 10 V Note 1
		—	12	18	mΩ	I_D = 25 A, V_{GS} = 4 V Note 1
Forward transfer admittance	$\|y_{fs}\|$	TBD	TBD	—	S	I_D = 25 A, V_{DS} = 10 V Note 1
Input capacitance	Ciss	—	TBD	—	pF	V_{DS} = 10V
Output capacitance	Coss	—	TBD	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	TBD	—	pF	f = 1 MHz
Total gate charge	Qg	—	TBD	—	nc	V_{DD} = 10 V
Gate to source charge	Qgs	—	TBD	—	nc	V_{GS} = 10 V
Gate to drain charge	Qgd	—	TBD	—	nc	I_D = 50 A
Turn-on delay time	$t_{d(on)}$	—	TBD	—	ns	V_{GS} = 10 V, I_D = 25 A
Rise time	t_r	—	TBD	—	ns	R_L = 0.4 Ω
Turn-off delay time	$t_{d(off)}$	—	TBD	—	ns	
Fall time	t_f	—	TBD	—	ns	
Body–drain diode forward voltage	V_{DF}	—	TBD	—	V	I_F = 50 A, V_{GS} = 0
Body–drain diode reverse recovery time	t_{rr}	—	TBD	—	ns	I_F = 50 A, V_{GS} = 0 diF/ dt = 50 A/ µs

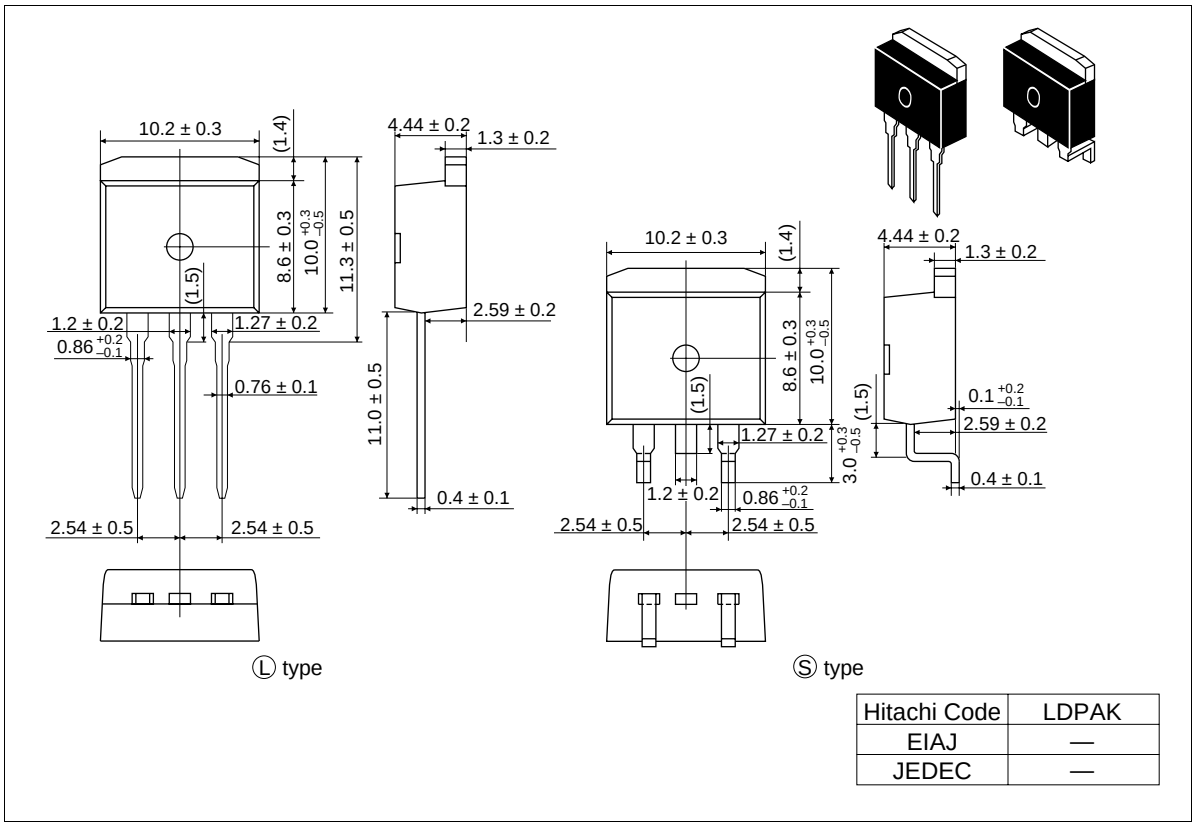
Note: 1. Pulse test

Main Characteristics



Package Dimensions

Unit: mm



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