

2SK3133(L),2SK3133(S)

Silicon N Channel MOS FET
High Speed Power Switching

HITACHI

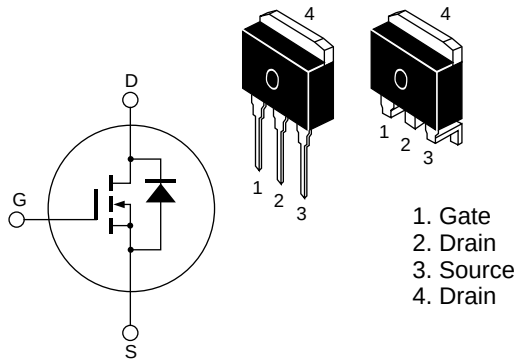
ADE-208-720 (Z)
Target Specification
1st. Edition
February 1999

Features

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

Outline

LDBAK



2SK3133(L),2SK3133(S)

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

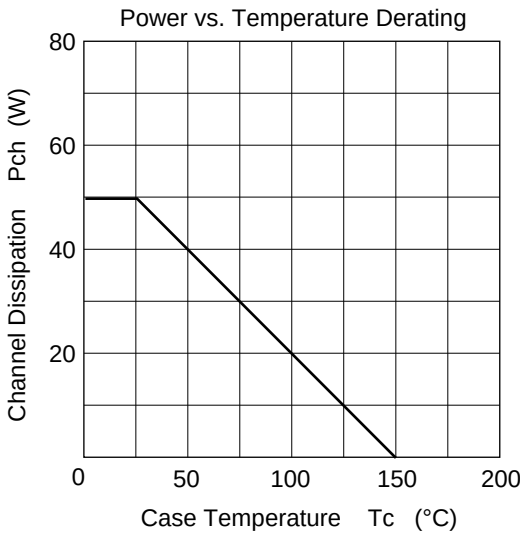
Note: 1. PW ≤ 10 μs, duty cycle ≤ 1%
2. Value at Tc = 25°C

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 voltage 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

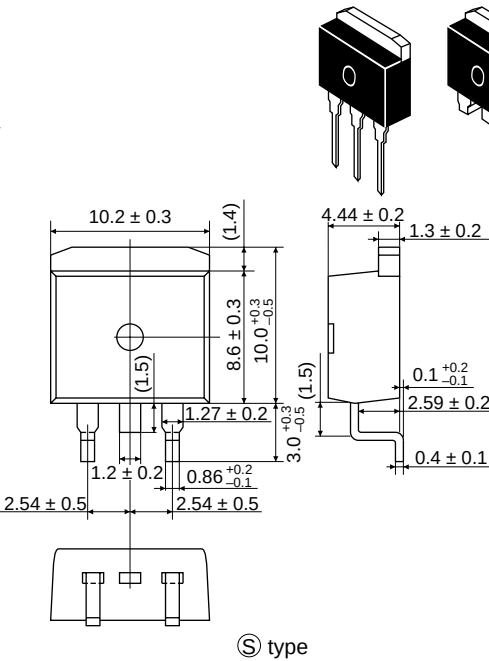
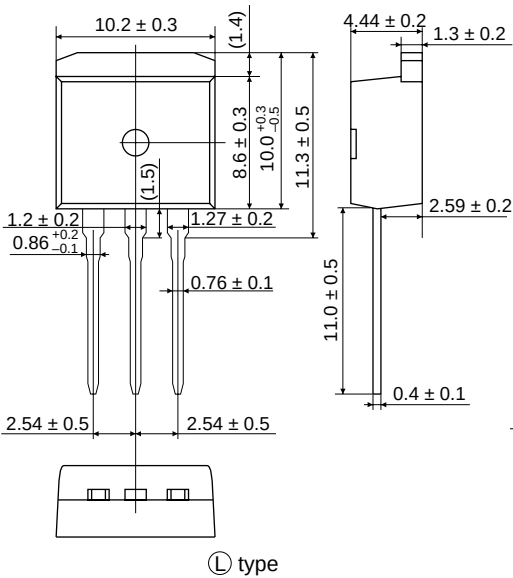
Main Characteristics



2SK3133(L),2SK3133(S)

Package Dimensions

Unit: mm



Hitachi Code	LDPAK
EIAJ	—
JEDEC	—

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