2SK2957(L), 2SK2957(S)

Silicon N Channel MOS FET
High Speed Power Switching

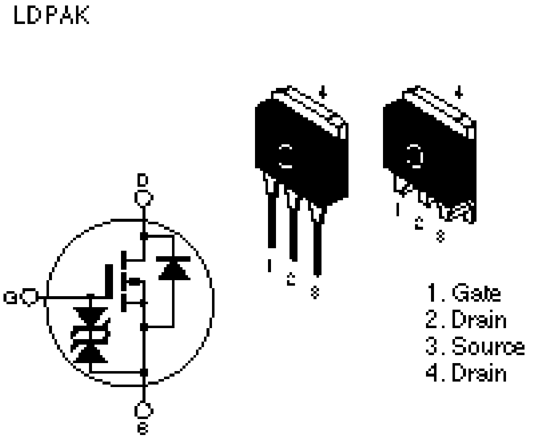
HITACHI

ADE-208-567
Target specification 1st. Edition

Features

- Low on-resistance
  $R_{DS(on)}$ = 7mΩ typ.
- 4V gate drive devices.
- High speed switching

Outline



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	$I_{D(pulse)}$*[1]	200	A
Body to drain diode reverse drain current	I_{DR}	50	A
Channel dissipation	Pch*[2]	75	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

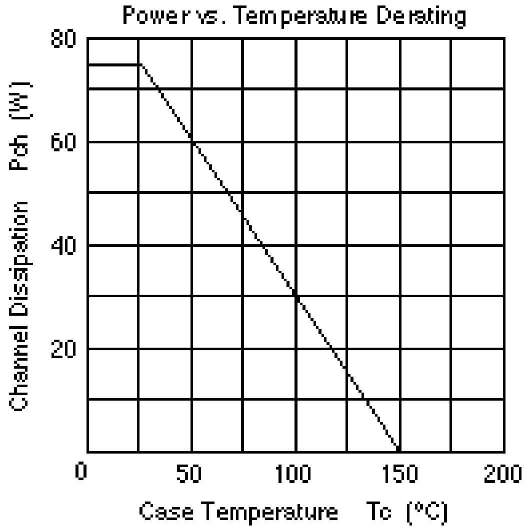
Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %
2. Value at Tc = 25°C

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 = 10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100µA, V_{DS} = 0
Zero gate voltege drain current	I_{DSS}	—	—	10	µA	V_{DS} = 30 V, V_{GS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16V, V_{DS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.0	V	I_D = 1mA, V_{DS} = 10V
Static drain to source on state resistance	$R_{DS(on)}$	—	7.0	10	mΩ	I_D = 25A, V_{GS} = 10V*[1]
	$R_{DS(on)}$	—	12	18	mΩ	I_D = 25A, V_{GS} = 4V*[1]
Forward transfer admittance	$\|y_{fs}\|$	25	45	—	S	I_D = 25A, V_{DS} = 10V*[1]
Input capacitance	Ciss	—	2000	—	pF	V_{DS} = 10V V_{GS} = 0 f = 1MHz
Output capacitance	Coss	—	1500	—	pF	
Reverse transfer capacitance	Crss	—	350	—	pF	
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	V_{GS} = 10V, I_D = 25A R_L = 0.4Ω
Rise time	t_r	—	330	—	ns	
Turn-off delay time	$t_{d(off)}$	—	190	—	ns	
Fall time	t_f	—	190	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.95	—	V	I_D = 50A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	140	—	ns	I_F = 50A, V_{GS} = 0 diF/ dt = 50A/µs

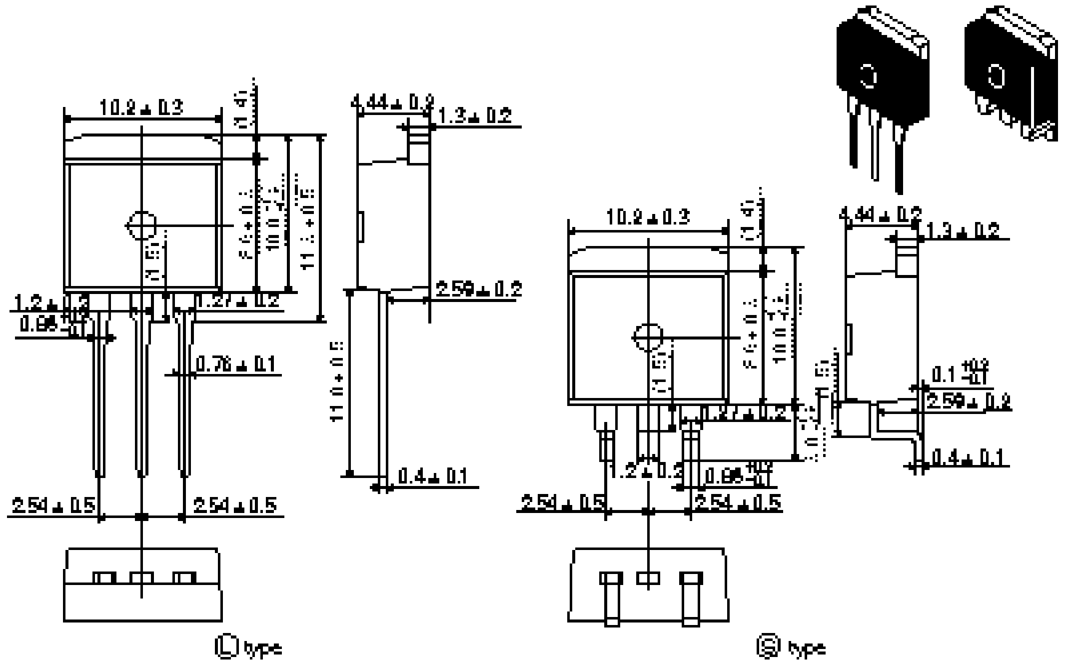
Note: 1. Pulse test

Main Characteristics



Package Dimensions

Unit: mm



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