2SK3447

Silicon N Channel Power MOS FET
Power Switching

HITACHI

ADE-208-1567D (Z)

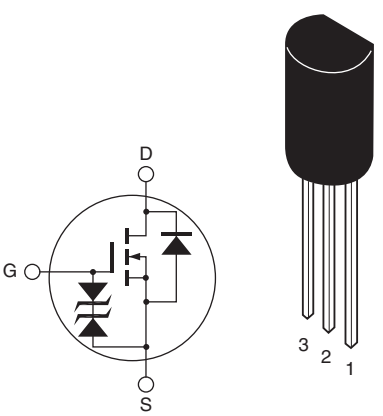
5th. Edition
Nov. 2002

Features

- Capable of 4 V gate drive
- Low drive current
- Low on-resistance
- $R_{DS(on)}$=1.5 Ω typ. (at V_{GS} = 10 V)

Outline

TO-92MOD.



1. Source
2. Drain
3. Gate

Absolute Maximum Ratings

(Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	150	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	1	A
Drain peak current	$I_{D(pulse)}$ Note1	4	A
Body-drain diode reverse drain current	I_{DR}	1	A
Channel dissipation	Pch Note2	0.9	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

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

Electrical Characteristics

(Ta = 25°C)

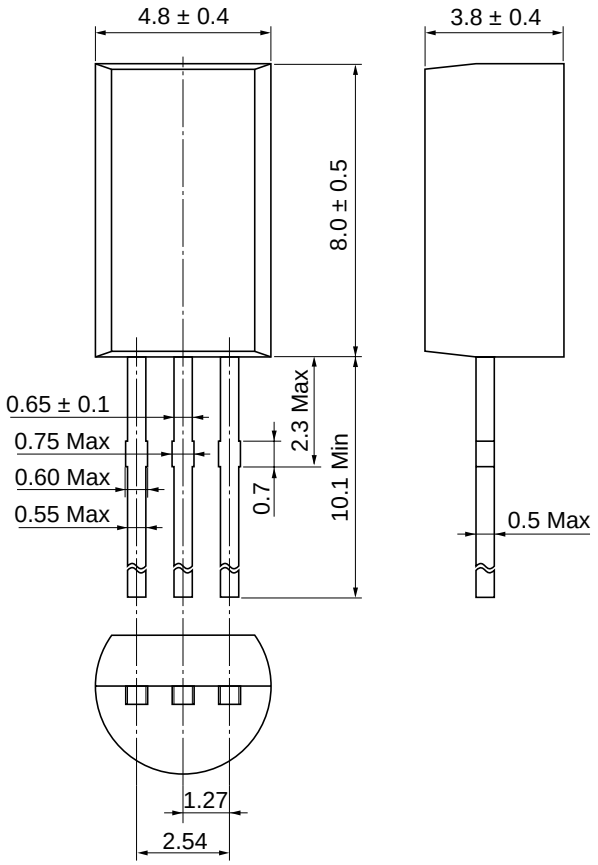
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	150	—	—	V	I_D = 10mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±16V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	1	µA	V_{DS} = 150 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.5	V	V_{DS} = 10V, I_D = 1mA
Static drain to source on state resistance	$R_{DS(on)}$	—	1.5	1.95	Ω	I_D = 0.5 A, V_{GS} = 10V Note3
	$R_{DS(on)}$	—	1.9	2.5	Ω	I_D = 0.5 A, V_{GS} = 4V Note3
Forward transfer admittance	$\|y_{fs}\|$	0.5	0.9	—	S	I_D = 0.5 A, V_{DS} = 10V Note3
Input capacitance	Ciss	—	85	—	pF	V_{DS} = 10V
Output capacitance	Coss	—	36	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	18	—	pF	f = 1MHz
Total gate charge	Qg	—	4.5	—	nC	V_{DD} = 100V
Gate to source charge	Qgs	—	0.8	—	nC	V_{GS} = 10V
Gate to drain charge	Qgd	—	1.6	—	nC	I_D = 1 A
Turn-on delay time	$t_{d(on)}$	—	7	—	ns	V_{GS} = 10V, I_D = 0.5A
Rise time	t_r	—	6	—	ns	R_L = 60Ω
Turn-off delay time	$t_{d(off)}$	—	21	—	ns	
Fall time	t_f	—	10	—	ns	
Body–drain diode forward voltage	V_{DF}	—	1.0	1.5	V	IF = 1 A, V_{GS} = 0 Note3
Body–drain diode reverse recovery time	t_{rr}	—	60	—	ns	IF = 1 A, V_{GS} = 0 diF/ dt =100A/µs

Notes: 3. Pulse test

Package Dimensions

As of July, 2002

Unit: mm



Hitachi Code	TO-92 Mod
JEDEC	—
JEITA	Conforms
Mass (reference value)	0.35 g

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