

2SK3447

Silicon N Channel Power MOS FET
Power Switching

HITACHI

ADE-208-1567D (Z)

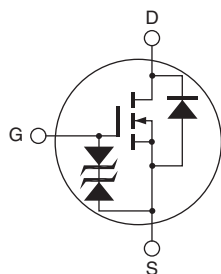
5th. Edition
Nov. 2002

Features

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

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	P _{ch} ^{Note2}	0.9	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	−55 to +150	°C

Notes: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1 \%$
2. Value at Ta = 25°C

Electrical Characteristics

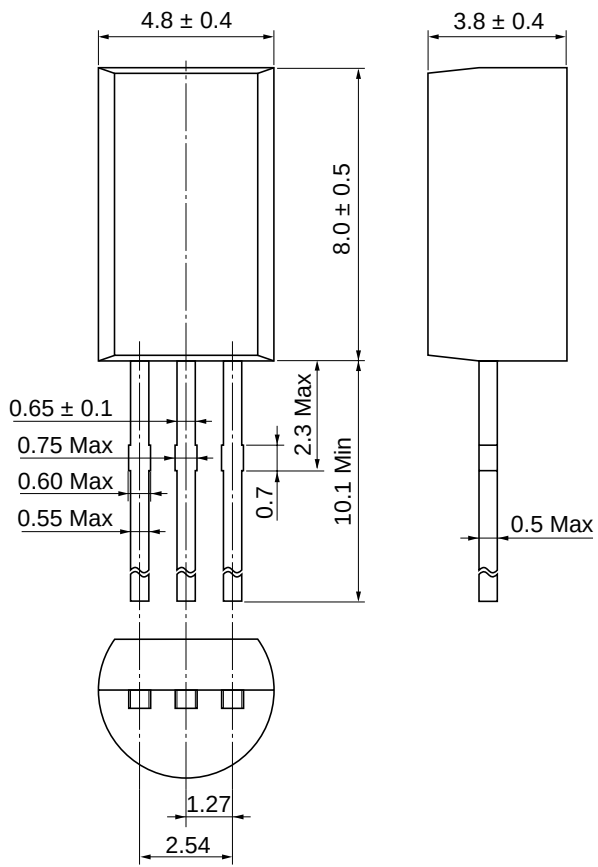
(T_a = 25°C)

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	C _{iss}	—	85	—	pF	V _{DS} = 10V
Output capacitance	C _{oss}	—	36	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	18	—	pF	f = 1MHz
Total gate charge	Q _g	—	4.5	—	nC	V _{DD} = 100V
Gate to source charge	Q _{gs}	—	0.8	—	nC	V _{GS} = 10V
Gate to drain charge	Q _{gd}	—	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	I _F = 1 A, V _{GS} = 0 ^{Note3}
Body–drain diode reverse recovery time	t _{rr}	—	60	—	ns	I _F = 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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