

2SK3228

Silicon N Channel MOS FET
High Speed Power Switching

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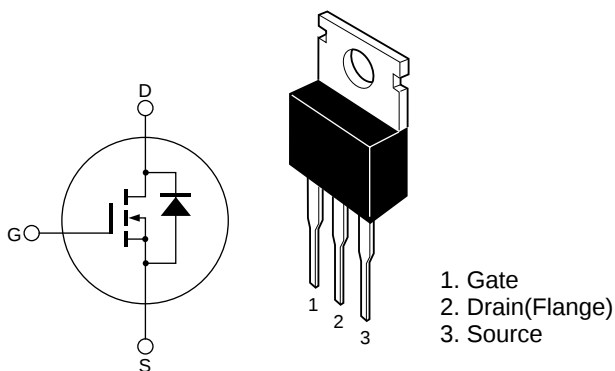
ADE-208-765A(Z)
Target specification
2nd. Edition
December 1998

Features

- Low on-resistance
 $R_{DS(on)} = 6m\Omega$ typ.
- Low drive current
- 4V gate drive device can be driven from 5V source

Outline

TO-220AB



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	80	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	75	A
Drain peak current	I _{D(pulse)} ^{*1}	300	A
Body-drain diode reverse drain current	I _{DR}	75	A
Avalanche current	I _{AP} ^{*3}	50	A
Avalanche energy	E _{AR} ^{*3}	181	mJ
Channel dissipation	Pch ^{*2}	100	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Note: 1. PW ≤ 10μs, duty cycle ≤ 1 %
2. Value at Tc = 25°C
3. Value at Tch = 25°C, Rg ≥ 50Ω

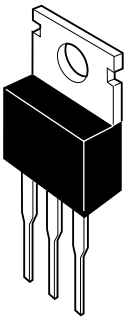
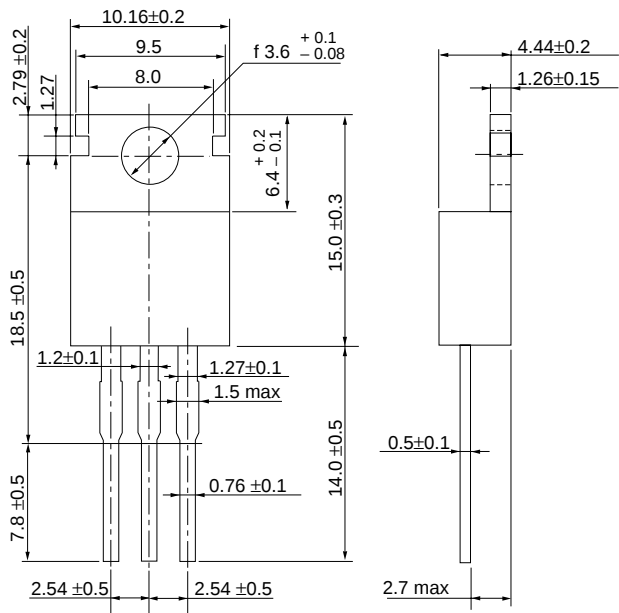
Electrical Characteristics ($T_a = 25^\circ\text{C}$)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	80	—	—	V	$I_D = 10\text{mA}$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 0.1	μA	$V_{GS} = \pm 20\text{V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	10	μA	$V_{DS} = 80\text{V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.0	—	2.5	V	$I_D = 1\text{mA}$, $V_{DS} = 10\text{V}^{*1}$
Static drain to source on state resistance	$R_{DS(on)}$	—	6.0	7.5	$\text{m}\Omega$	$I_D = 40\text{A}$, $V_{GS} = 10\text{V}^{*1}$
		—	8.0	12	$\text{m}\Omega$	$I_D = 40\text{A}$, $V_{GS} = 4\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	55	90	—	S	$I_D = 40\text{A}$, $V_{DS} = 10\text{V}^{*1}$
Input capacitance	C_{iss}	—	9700	—	pF	$V_{DS} = 10\text{V}$
Output capacitance	C_{oss}	—	1250	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	290	—	pF	$f = 1\text{MHz}$
Total gate charge	Q_g	—	150	—	nC	$V_{DD} = 25\text{V}$
Gate to source charge	Q_{gs}	—	30	—	nC	$V_{GS} = 25\text{V}$
Gate to drain charge	Q_{gd}	—	30	—	nC	$I_D = 75\text{A}$
Turn-on delay time	$t_{d(on)}$	—	80	—	ns	$V_{GS} = 10\text{V}$, $I_D = 40\text{A}$ $R_L = 0.75\Omega$
Rise time	t_r	—	300	—	ns	
Turn-off delay time	$t_{d(off)}$	—	770	—	ns	
Fall time	t_f	—	370	—	ns	
Body-drain diode forward voltage	V_{DF}	—	1.05	—	V	$I_F = 75\text{A}$, $V_{GS} = 0$
Body-drain diode reverse recovery time	t_{rr}	—	90	—	ns	$I_F = 75\text{A}$, $V_{GS} = 0$ $diF/dt = 50\text{A}/\mu\text{s}$

Note: 1. Pulse test

Package Dimensions

Unit: mm



Hitachi Code	TO-220AB
EIAJ	SC-46
JEDEC	—

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