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# 2SK2928

Silicon N Channel MOS FET  
High Speed Power Switching

## HITACHI

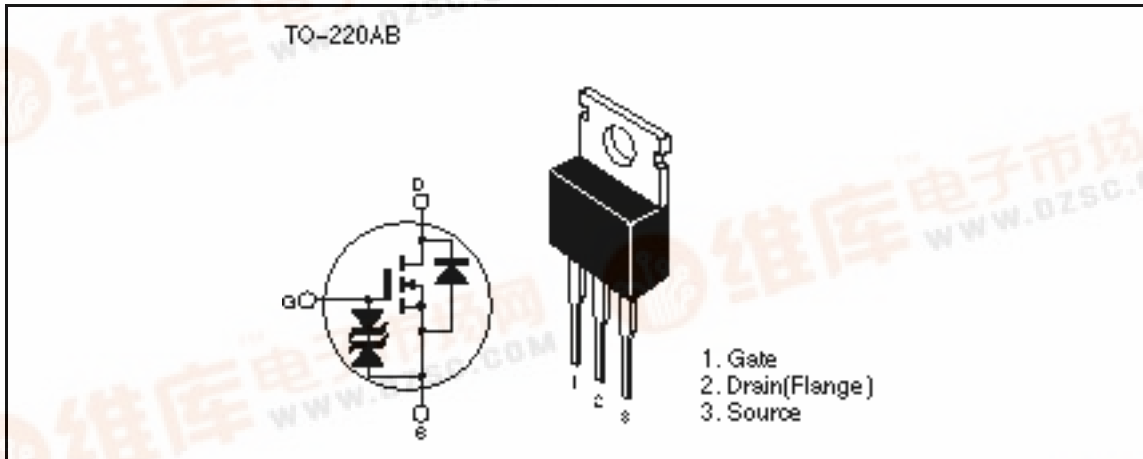
ADE-208-551  
Target Specification 1st. Edition

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### Features

- Low on-resistance  
 $R_{DS} = 0.040$  typ.
- High speed switching
- 4V gate drive device can be driven from 5V source

### Outline



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### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	60	V
Gate to source voltage	$V_{GSS}$	±20	V
Drain current	$I_D$	15	A
Drain peak current	$I_{D(pulse)}^{*1}$	60	A
Body to drain diode reverse drain current	$I_{DR}$	15	A
Avalanche current	$I_{AP}^{*3}$	15	A
Avalanche energy	$E_{AR}^{*3}$	19	mJ
Channel dissipation	$P_{ch}^{*2}$	40	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  
3. Value at Tch = 25°C, Rg = 50

## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10\text{mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 20$	—	—	V	$I_G = \pm 100\mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 16\text{V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	10	$\mu\text{A}$	$V_{DS} = 60\text{V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	2.5	V	$I_D = 1\text{mA}$ , $V_{DS} = 10\text{V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.040	0.052		$I_D = 8\text{A}$ , $V_{GS} = 10\text{V}^{*1}$
	$R_{DS(on)}$	—	0.060	0.105		$I_D = 8\text{A}$ , $V_{GS} = 4\text{V}^{*1}$
Forward transfer admittance	$ y_{fs} $	10	16	—	S	$I_D = 8\text{A}$ , $V_{DS} = 10\text{V}^{*1}$
Input capacitance	$C_{iss}$	—	500	—	pF	$V_{DS} = 10\text{V}$
Output capacitance	$C_{oss}$	—	260	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	110	—	pF	$f = 1\text{MHz}$
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$I_D = 8\text{A}$ , $V_{GS} = 10\text{V}$
Rise time	$t_r$	—	80	—	ns	$R_L = 3.75$
Turn-off delay time	$t_{d(off)}$	—	100	—	ns	
Fall time	$t_f$	—	110	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	0.9	—	V	$I_F = 15\text{A}$ , $V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	50	—	ns	$I_F = 15\text{A}$ , $V_{GS} = 0$ $di_F/dt = 50\text{A}/\mu\text{s}$

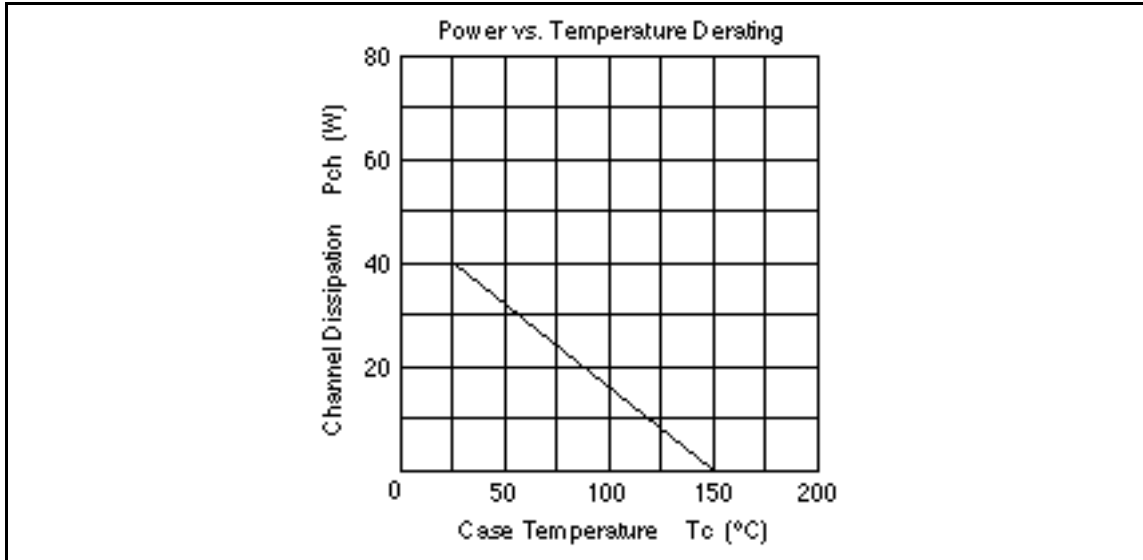
Note: 1. Pulse test

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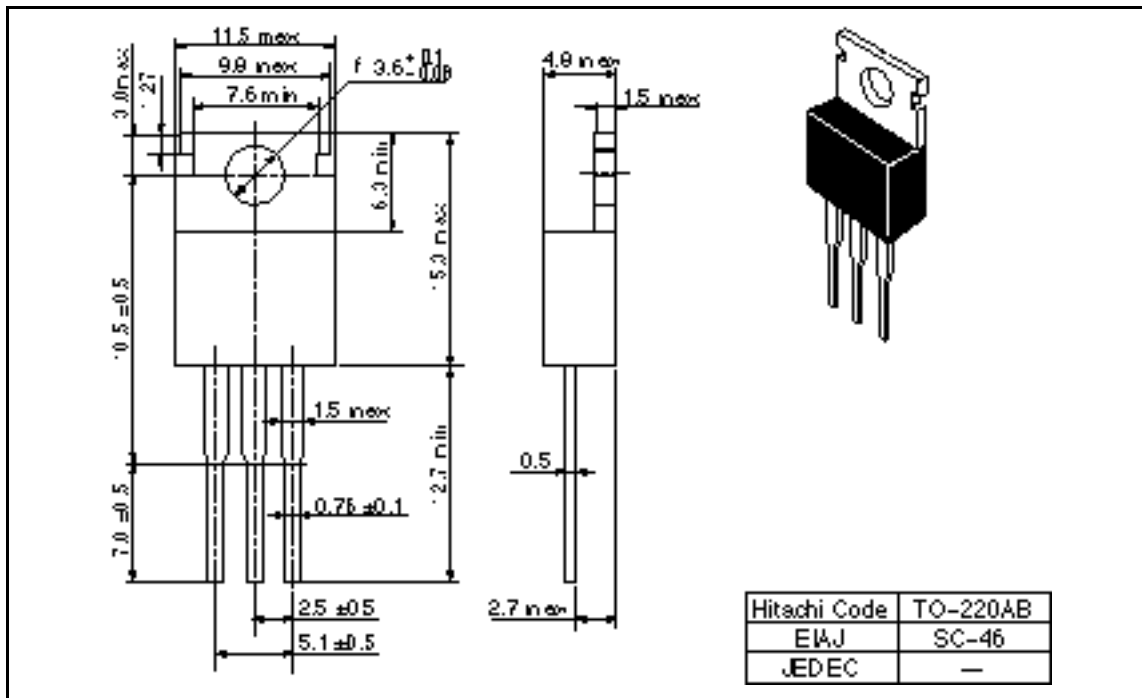
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### Main Characteristics



Package Dimensions

Unit: mm



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