
2SK2931

Silicon N Channel MOS FET
High Speed Power Switching

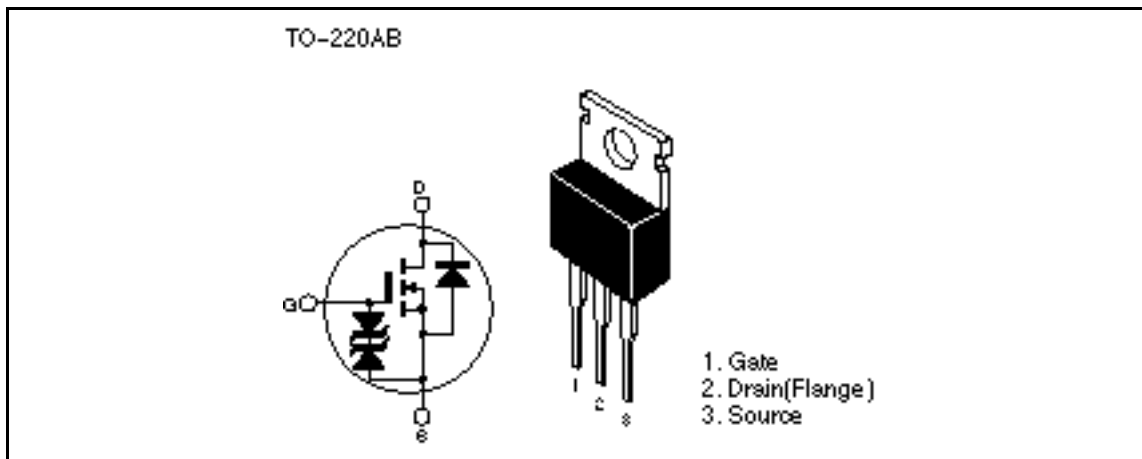
HITACHI

ADE-208-554
Target Specification 1st. Edition

Features

- Low on-resistance
 $R_{DS} = 0.010$ typ.
- High speed switching
- 4V gate drive device can be driven from 5V source

Outline



2SK2931

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	45	A
Drain peak current	$I_{D(pulse)}^{*1}$	180	A
Body to drain diode reverse drain current	I_{DR}	45	A
Avalanche current	I_{AP}^{*3}	45	A
Avalanche energy	E_{AR}^{*3}	173	mJ
Channel dissipation	P_{ch}^{*2}	75	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

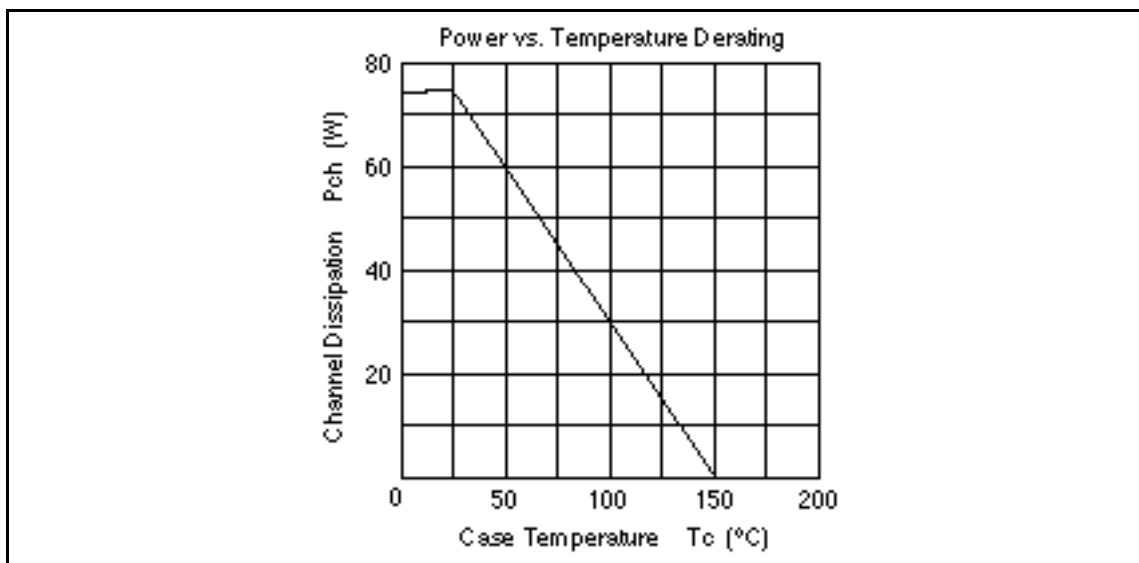
Notes: 1. PW 10 μ s, duty cycle 1 %
2. Value at Tc = 25°C
3. Value at Tch = 25°C, Rg 50

Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	60	—	—	V	$I_D = 10mA, V_{GS} = 0$
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}	—	—	10	μA	$V_{DS} = 60 V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.5	—	2.5	V	$I_D = 1mA, V_{DS} = 10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.010	0.013		$I_D = 20A, V_{GS} = 10V^{*1}$
	$R_{DS(on)}$	—	0.015	0.025		$I_D = 20A, V_{GS} = 4V^{*1}$
Forward transfer admittance	$ y_{fs} $	24	40	—	S	$I_D = 20A, V_{DS} = 10V^{*1}$
Input capacitance	Ciss	—	2200	—	pF	$V_{DS} = 10V$
Output capacitance	Coss	—	1050	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	320	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	25	—	ns	$I_D = 20A, V_{GS} = 10V$
Rise time	t_r	—	200	—	ns	$R_L = 1.5$
Turn-off delay time	$t_{d(off)}$	—	320	—	ns	
Fall time	t_f	—	240	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.95	—	V	$I_F = 45A, V_{GS} = 0$
Body to drain diode reverse recovery time	t_{rr}	—	60	—	ns	$I_F = 45A, V_{GS} = 0$ $diF/dt = 50A/μs$

Note: 1. Pulse test

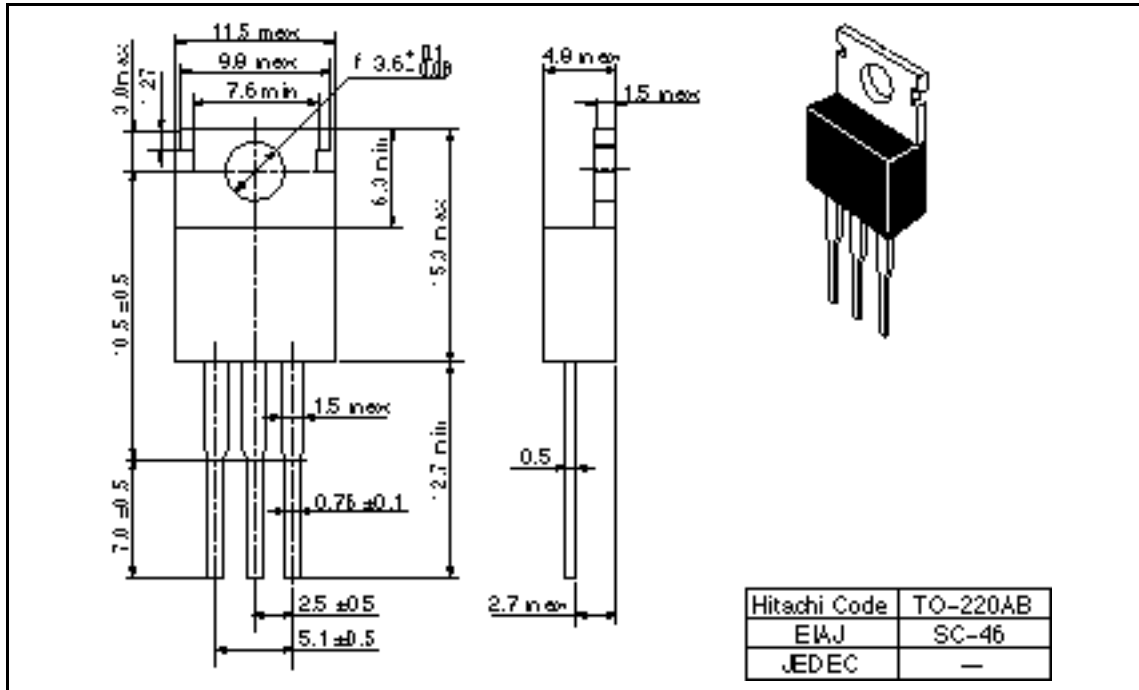
Main Characteristics



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Package Dimensions

Unit: mm



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