2SK2933

Silicon N Channel MOS FET
High Speed Power Switching

HITACHI

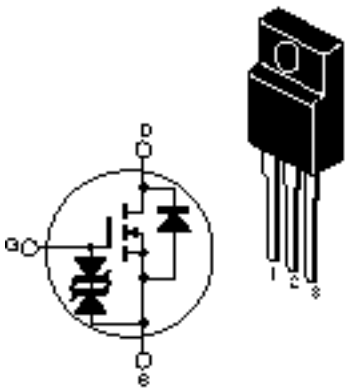
ADE-208-556
Target Specification 1st. Edition

Features

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

Outline

TO-220CFM



1. Gate
2. Drain
3. Source

Hitachi semiconductor

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	Pch*[2]	25	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

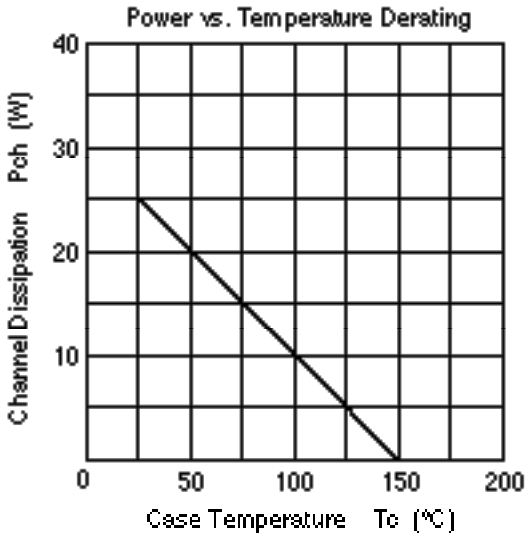
Notes: 1. PW ≤ 10μs, duty cycle ≤ 1 %
2. Value at Tc = 25°C
3. Value at Tch = 25°C, Rg 50Ω

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 voltege 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	$R_{DS(on)}$	—	0.040	0.052	Ω	I_D = 8A, V_{GS} = 10V*[1]
	$R_{DS(on)}$	—	0.060	0.105	Ω	I_D = 8A, V_{GS} = 4V*[1]
Forward transfer admittance	$\|y_{fs}\|$	10	16	—	S	I_D = 8A, V_{DS} = 10V*[1]
Input capacitance	Ciss	—	500	—	pF	V_{DS} = 10V
Output capacitance	Coss	—	260	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	110	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	I_D = 8A, V_{GS} = 10V
Rise time	t_r	—	80	—	ns	R_L = 3.75Ω
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 = 15A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	50	—	ns	I_F = 15A, V_{GS} = 0 diF/ dt = 50A/µs

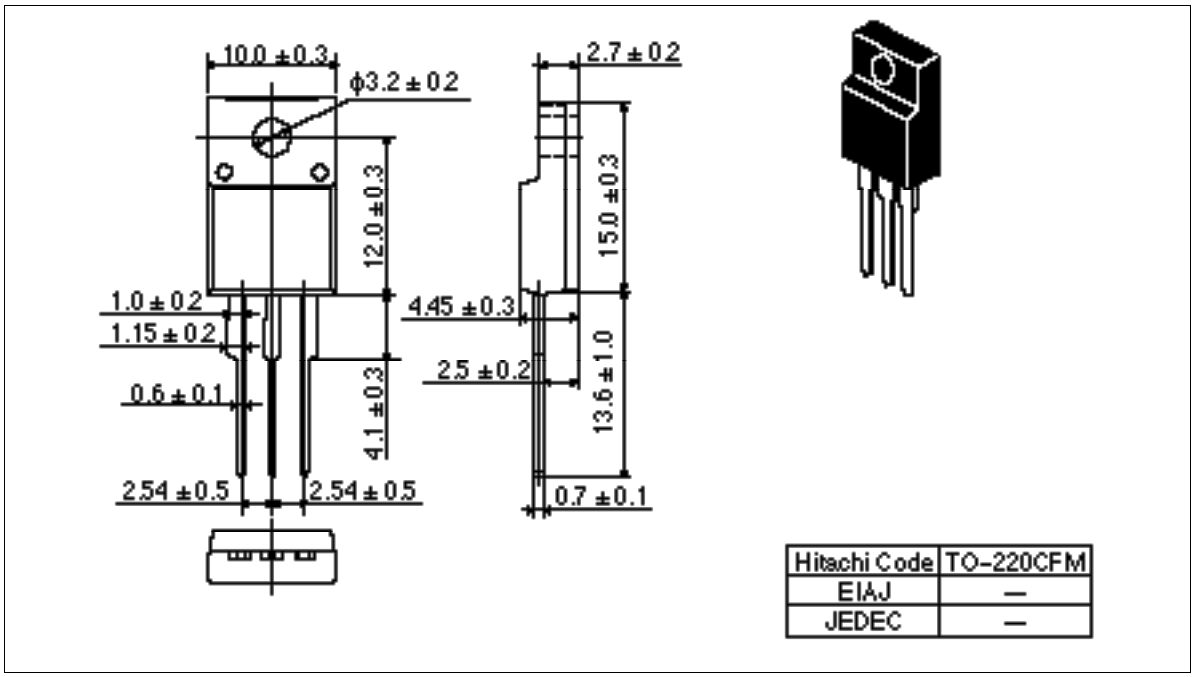
Note: 1. Pulse test

Main Characteristics



Package Dimentions

Unit: mm



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HITACHI

Hitachi, Ltd.
Semiconductor & IC Div.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100, Japan
Tel: Tokyo (03) 3270-2111
Fax: (03) 3270-5109

For further information write to:

Hitachi America, Ltd.
Semiconductor & IC Div.
2000 Sierra Point Parkway
Brisbane, CA. 94005-1835
U.S.A.
Tel: 415-589-8300
Fax: 415-583-4207

Hitachi Europe GmbH
Electronic Components Group
Continental Europe
Dornacher Straße 3
D-85622 Feldkirchen
München
Tel: 089-9 91 80-0
Fax: 089-9 29 30 00

Hitachi Europe Ltd.
Electronic Components Div.
Northern Europe Headquarters
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA
United Kingdom
Tel: 0628-585000
Fax: 0628-778322

Hitachi Asia Pte. Ltd.
45 Collyer Quay #20-00
Hitachi Tower
Singapore 0104
Tel: 535-2100
Fax: 535-1533

Hitachi Asia (Hong Kong) Ltd.
Unit 706, North Tower,
World Finance Centre,
Harbour City, Canton Road
Tsim Sha Tsui, Kowloon
Hong Kong
Tel: 27359218
Fax: 27306071