2SK2408

Silicon N-Channel MOS FET

HITACHI

Application

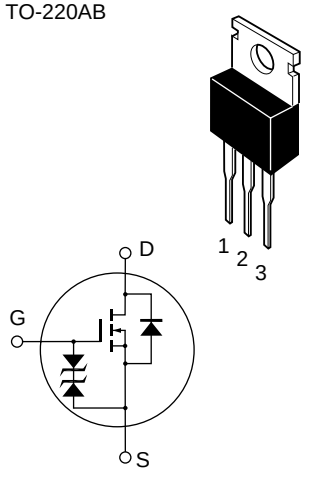
High speed power switching

Features

- Low on-resistance
- Built-in fast recovery diode (t_{rr} = 120 ns typ)
- High speed switching
- Low drive current
- Suitable for switching regulator, Motor control

Outline

TO-220AB



1. Gate
2. Drain (Flange)
3. Source

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Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	500	V
Gate to source voltage	V_{GSS}	±30	V
Drain current	I_D	7	A
Drain peak current	$I_{D(pulse)}$*[1]	28	A
Body to drain diode reverse drain current	I_{DR}	7	A
Channel dissipation	Pch*[2]	60	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

Notes 1. PW ≤ 10 µs, duty cycle ≤ 1 %
2. Value at Tc = 25 °C

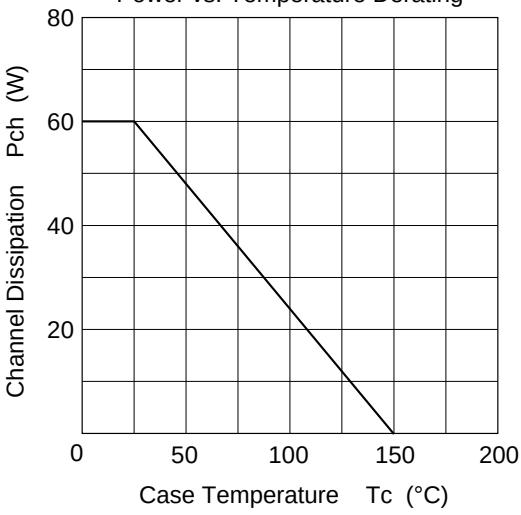
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	I_D = 10 mA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±10	µA	V_{GS} = ±25 V, V_{DS} = 0
Zero gate voltage drain current	I_{DSS}	—	—	250	µA	V_{DS} = 400 V, V_{GS} = 0
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	I_D = 1 mA, V_{DS} = 10 V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.7	0.9	Ω	I_D = 4A V_{GS} = 10 V*[1]
Forward transfer admittance	$\|y_{fs}\|$	3.5	6.0	—	S	I_D = 4 A V_{DS} = 10 V*[1]
Input capacitance	Ciss	—	1100	—	pF	V_{DS} = 10 V
Output capacitance	Coss	—	310	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	50	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	I_D = 4 A
Rise time	t_r	—	55	—	ns	V_{GS} = 10 V
Turn-off delay time	$t_{d(off)}$	—	100	—	ns	R_L = 7.5 Ω
Fall time	t_f	—	48	—	ns	
Body to drain diode forward voltage	V_{DF}	—	0.9	—	V	I_F = 7 A, V_{GS} = 0
Body to drain diode reverse recovery time	t_{rr}	—	120	—	ns	I_F = 7 A, V_{GS} = 0, di_F / dt = 100 A / µs

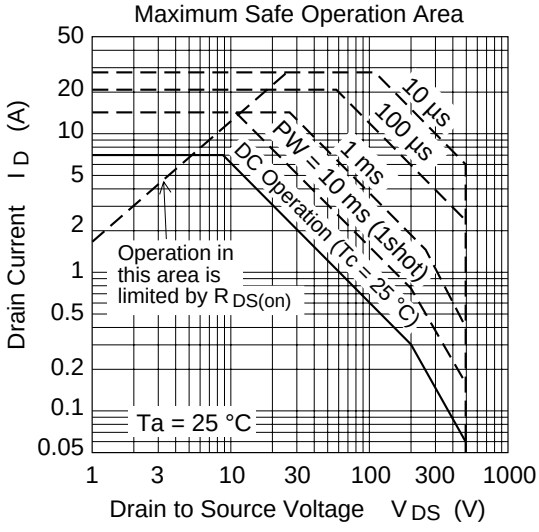
Note 1. Pulse Test

See characteristic curves of 2SK1516

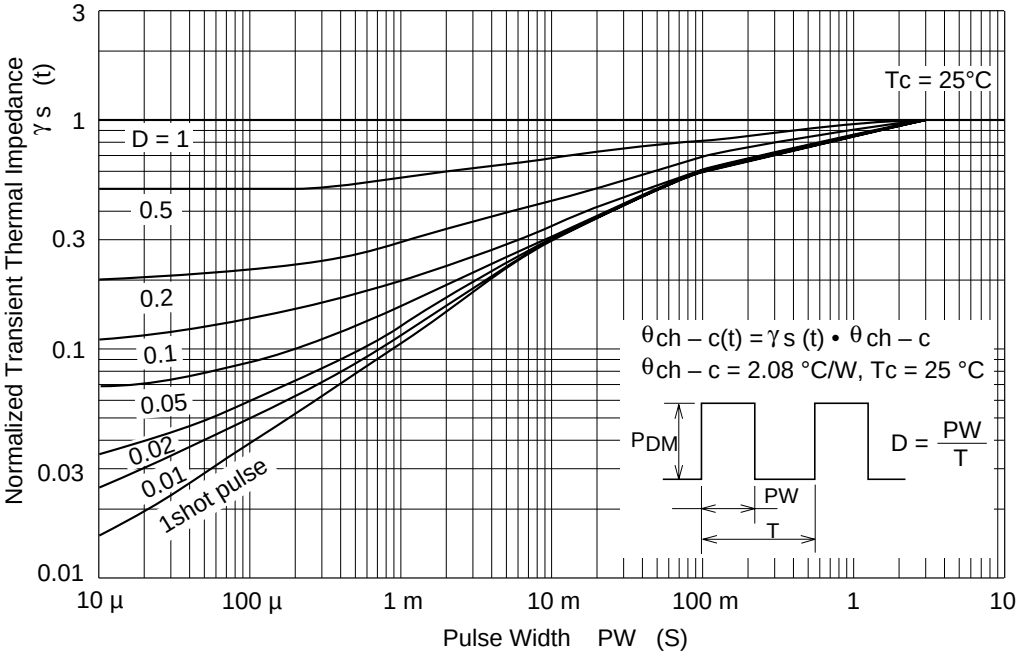
Power vs. Temperature Derating



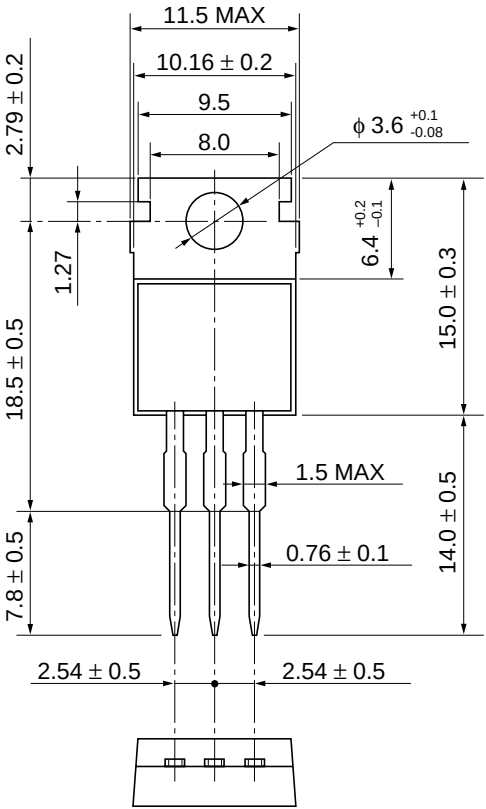
Maximum Safe Operation Area

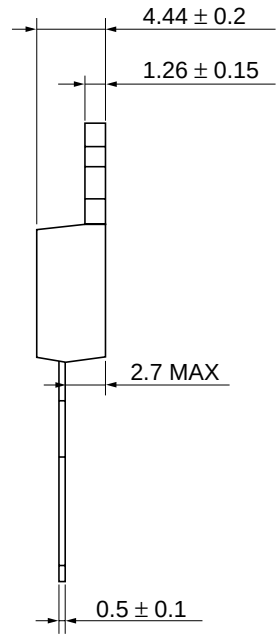


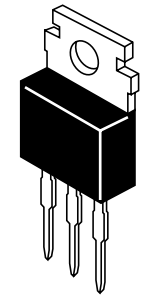
Normalized Transient Thermal Impedance vs. Pulse Width



Unit: mm







Hitachi Code	TO-220AB
JEDEC	Conforms
EIAJ	Conforms
Weight (reference value)	1.8 g

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HITACHI

Hitachi, Ltd.
Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

URL
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For further information write to:

Hitachi Semiconductor
(America) Inc.
179 East Tasman Drive,
San Jose,CA 95134
Tel: <1> (408) 433-1990
Fax: <1>(408) 433-0223

Hitachi Europe GmbH
Electronic components Group
Dornacher Straße 3
D-85622 Feldkirchen, Munich
Germany
Tel: <49> (89) 9 9180-0
Fax: <49> (89) 9 29 30 00

Hitachi Europe Ltd.
Electronic Components Group.
Whitebrook Park
Lower Cookham Road
Maidenhead
Berkshire SL6 8YA, United Kingdom
Tel: <44> (1628) 585000
Fax: <44> (1628) 778322

Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building. No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX