

# 2SK3378

Silicon N Channel MOS FET  
High Speed Switching

# HITACHI

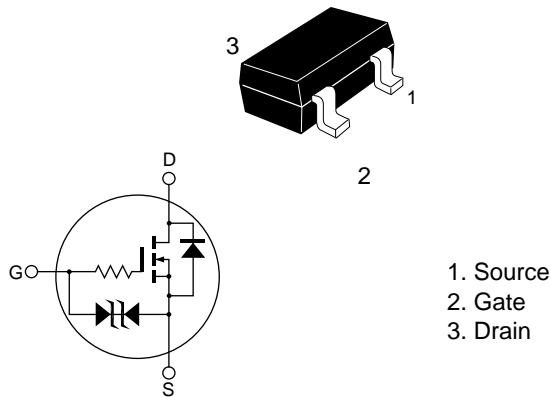
ADE-208-805 (Z)  
1st.Edition.  
June 1999

## Features

- Low on-resistance  
 $R_{DS} = 2.7 \Omega$  typ. ( $V_{GS} = 10 \text{ V}$ ,  $I_D = 50 \text{ mA}$ )  
 $R_{DS} = 4.7 \Omega$  typ. ( $V_{GS} = 4 \text{ V}$ ,  $I_D = 20 \text{ mA}$ )
- 4 V gate drive device.
- Small package (CMPAK)

## Outline

CMPAK



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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	30	V
Gate to source voltage	$V_{GSS}$	±20	V
Drain current	$I_D$	100	mA
Drain peak current	$I_{D(pulse)}$ <sup>Note 1</sup>	400	mA
Body-drain diode reverse drain current	$I_{DR}$	100	mA
Channel dissipation	Pch <sup>Note 2</sup>	300	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

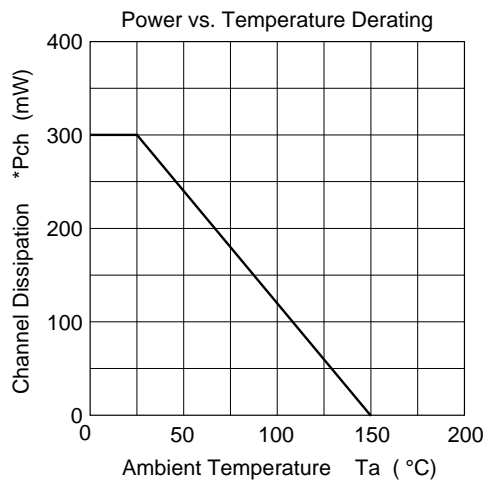
Note: 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1\%$   
 2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

## Electrical Characteristics (Ta = 25°C)

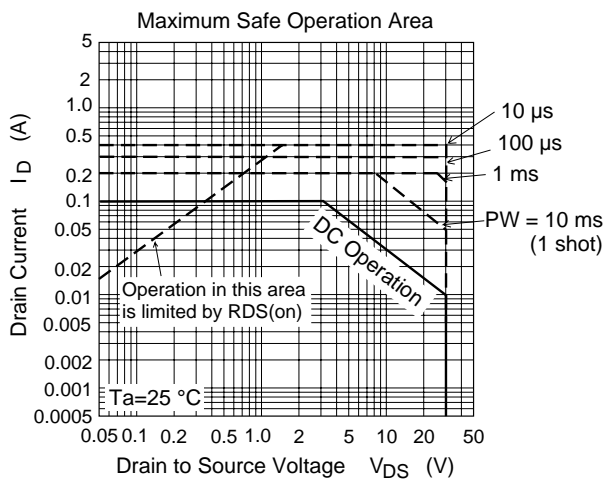
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 100 \mu A, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±5	μA	$V_{GS} = \pm 16 V, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	1	μA	$V_{DS} = 30 V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.3	—	2.3	V	$I_D = 10 \mu A, V_{DS} = 5 V$
Static drain to source on state resistance	$R_{DS(on)}$	—	2.7	3.5	Ω	$I_D = 50 mA, V_{GS} = 10 V$ <sup>Note 3</sup>
	$R_{DS(on)}$	—	4.7	7.0	Ω	$I_D = 20 mA, V_{GS} = 4 V$ <sup>Note 3</sup>
Forward transfer admittance	$ y_{fs} $	55	85	—	mS	$I_D = 50 mA, V_{DS} = 10 V$ <sup>Note 3</sup>
Input capacitance	Ciss	—	1.6	—	pF	$V_{DS} = 10 V$
Output capacitance	Coss	—	7	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	0.5	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	100	—	ns	$I_D = 50 mA, V_{GS} = 10 V$
Rise time	$t_r$	—	330	—	ns	$R_L = 200 \Omega$
Turn-off delay time	$t_{d(off)}$	—	1150	—	ns	
Fall time	$t_f$	—	940	—	ns	

Note: 3. Pulse test  
 4. Marking is EN  
 See characteristics curves of 2SK3288

## Main Characteristics



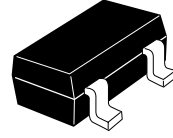
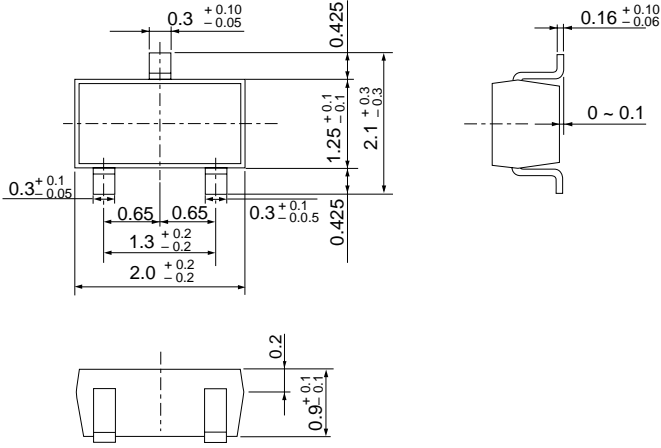
\*Value on the alumina ceramic board. (12.5x20x0.7mm)



Value on the alumina ceramic board. (12.5x20x0.7mm)

## Package Dimensions

Unit: mm



Hitachi Code	CMPAK
EIAJ	SC-70
JEDEC	-

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## 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      North America      : <http://semiconductor.hitachi.com/>  
             Europe                : <http://www.hitachi-eu.com/hel/ecg>  
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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

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