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# 2SK1328, 2SK1329

Silicon N-Channel MOS FET

# HITACHI

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## Application

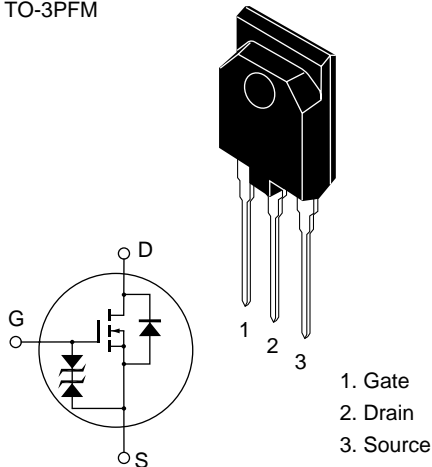
High speed power switching

## Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter

## Outline

TO-3PFM



2SK1328, 2SK1329

Absolute Maximum Ratings (Ta = 25°C)

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1328	$V_{DSS}$	450	V
	2SK1329		500	
Gate to source voltage		$V_{GSS}$	±30	V
Drain current		$I_D$	12	A
Drain peak current		$I_{D(pulse)}^{*1}$	48	A
Body to drain diode reverse drain current		$I_{DR}$	12	A
Channel dissipation		$Pch^{*2}$	60	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55 to +150	°C

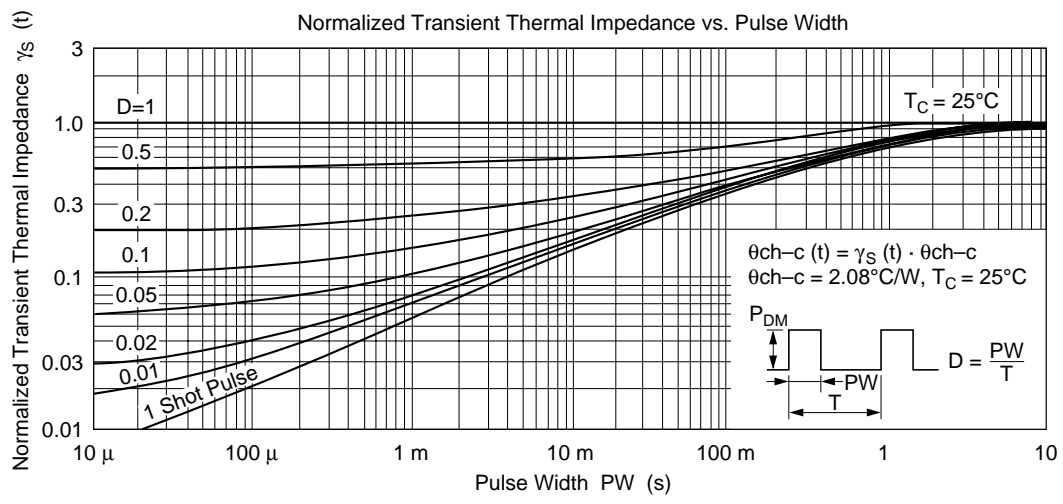
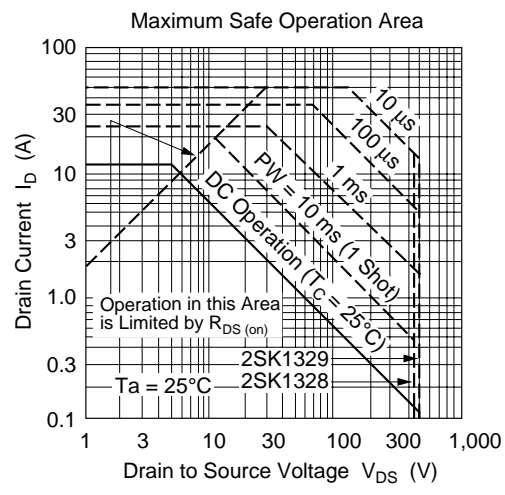
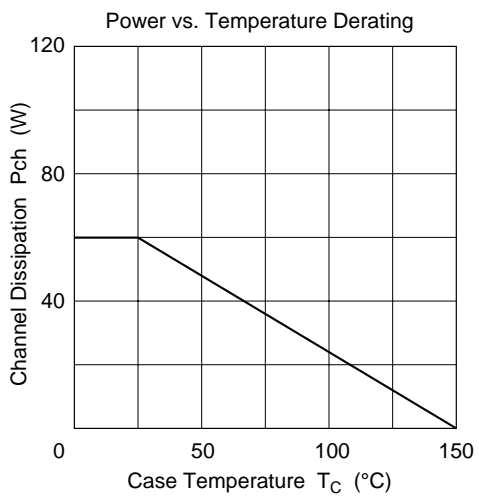
Notes: 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1\%$   
2. Value at T<sub>c</sub> = 25°C

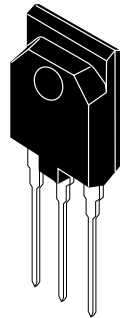
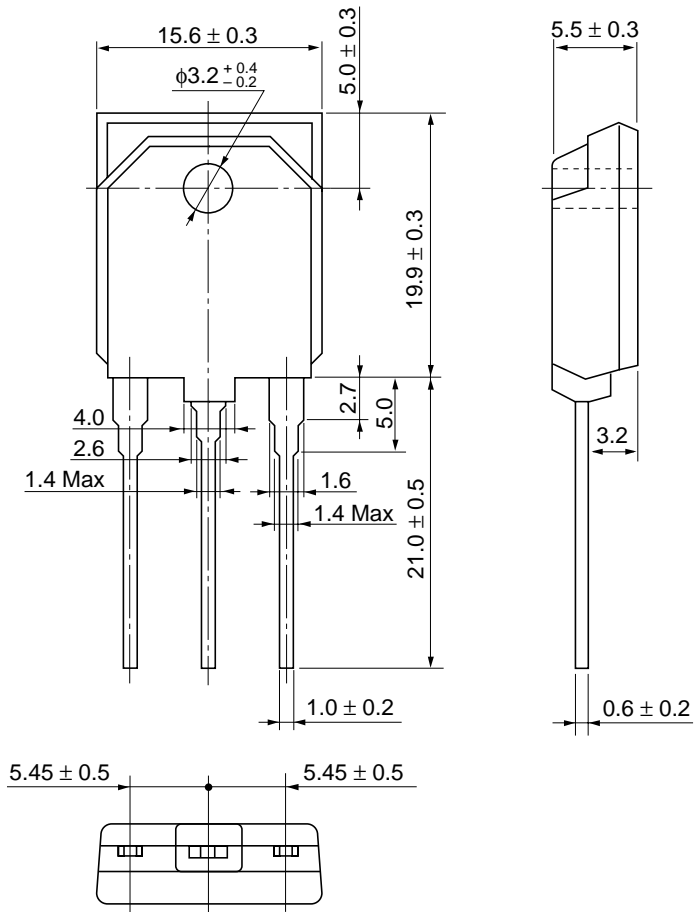
**Electrical Characteristics** (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1328 $V_{(BR)DSS}$ 2SK1329	450 500	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 30$	—	—	V	$I_G = \pm 100 \mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 25 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	2SK1328 $I_{DSS}$ 2SK1329	—	—	250	$\mu\text{A}$	$V_{DS} = 360 \text{ V}$ , $V_{GS} = 0$ $V_{DS} = 400 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1 \text{ mA}$ , $V_{DS} = 10 \text{ V}$
Static Drain to source on state resistance	2SK1328 $R_{DS(on)}$ 2SK1329	— —	0.40 0.45	0.55 0.60	$\Omega$	$I_D = 6 \text{ A}$ , $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	6.0	10	—	S	$I_D = 6 \text{ A}$ , $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	$C_{iss}$	—	1450	—	pF	$V_{DS} = 10 \text{ V}$ , $V_{GS} = 0$ , $f = 1 \text{ MHz}$
Output capacitance	$C_{oss}$	—	410	—	pF	
Reverse transfer capacitance	$C_{rss}$	—	55	—	pF	
Turn-on delay time	$t_{d(on)}$	—	20	—	ns	$I_D = 6 \text{ A}$ , $V_{GS} = 10 \text{ V}$ , $R_L = 5 \Omega$
Rise time	$t_r$	—	70	—	ns	
Turn-off delay time	$t_{d(off)}$	—	120	—	ns	
Fall time	$t_f$	—	60	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	1.0	—	V	$I_F = 12 \text{ A}$ , $V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	450	—	ns	$I_F = 12 \text{ A}$ , $V_{GS} = 0$ , $di_F/dt = 100 \text{ A}/\mu\text{s}$

Note: 1. Pulse test

See characteristic curves of 2SK1165, 2SK1166.





Hitachi Code	TO-3PFB
JEDEC	—
EIAJ	—
Weight (reference value)	5.6 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	NorthAmerica	: <a href="http://semiconductor.hitachi.com/">http://semiconductor.hitachi.com/</a>
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	Japan	: <a href="http://www.hitachi.co.jp/Sicd/indx.htm">http://www.hitachi.co.jp/Sicd/indx.htm</a>

## 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
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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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