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# 2SK1328, 2SK1329

Silicon N-Channel MOS FET

# HITACHI

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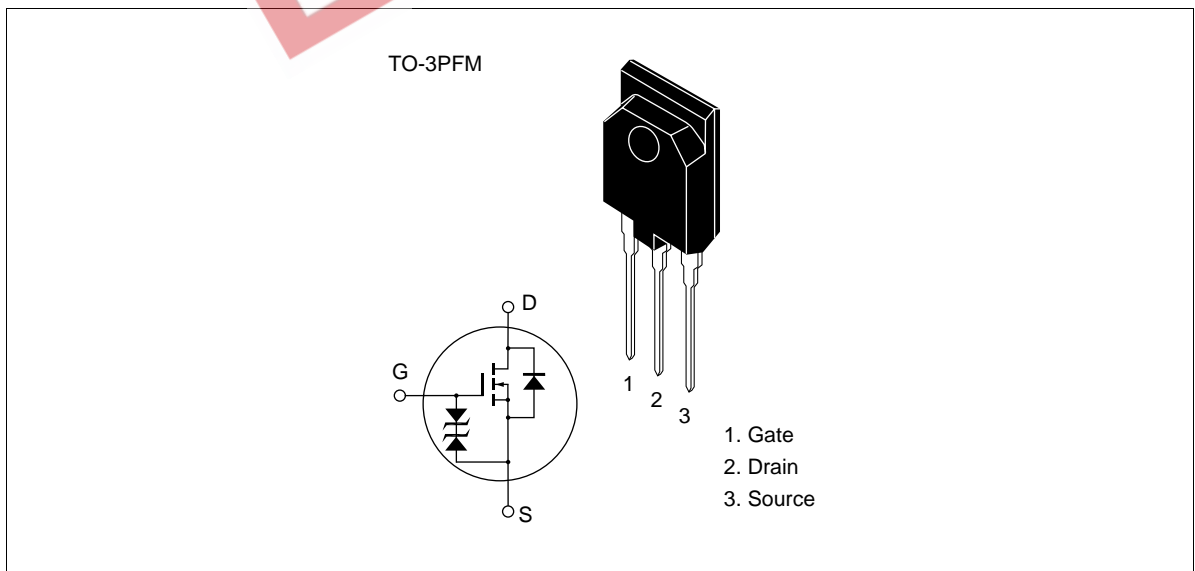
## Application

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



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### 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  $T_c = 25^\circ C$

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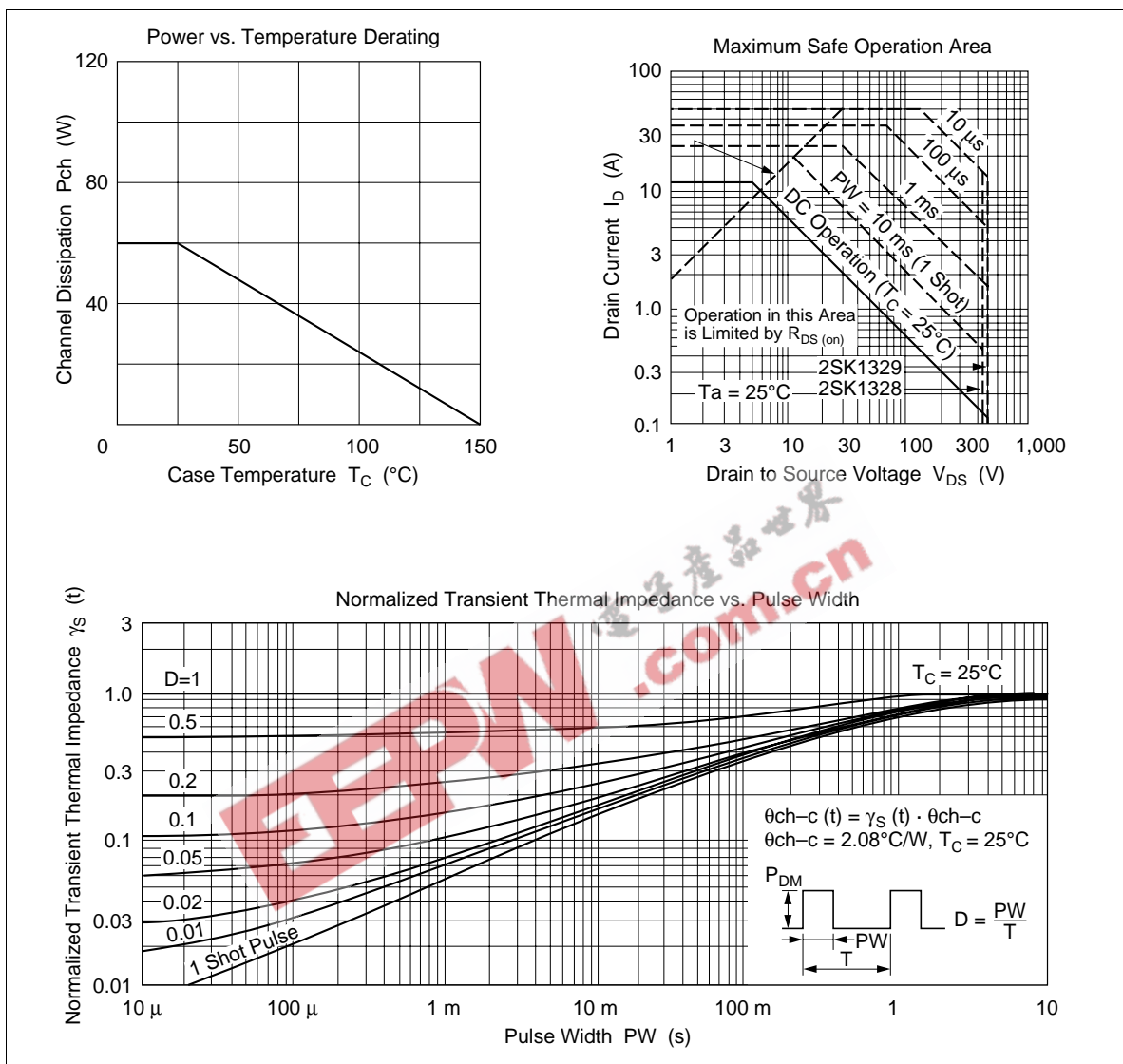
### Electrical Characteristics (T<sub>a</sub> = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1328 $V_{(BR)DSS}$ 2SK1329	450	—	—	V	$I_D = 10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \mu\text{A}, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	2SK1328 $I_{DSS}$ 2SK1329	—	—	250	μA	$V_{DS} = 360 \text{ V}, V_{GS} = 0$ $V_{DS} = 400 \text{ V}, V_{GS} = 0$
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	0.55	Ω	$I_D = 6 \text{ A}, V_{GS} = 10 \text{ V}^{*1}$ — 0.45 0.60
Forward transfer admittance	y <sub>fs</sub>	6.0	10	—	S	$I_D = 6 \text{ A}, V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	C <sub>iss</sub>	—	1450	—	pF	$V_{DS} = 10 \text{ V}, V_{GS} = 0,$
Output capacitance	C <sub>oss</sub>	—	410	—	pF	$f = 1 \text{ MHz}$
Reverse transfer capacitance	C <sub>rss</sub>	—	55	—	pF	
Turn-on delay time	t <sub>d(on)</sub>	—	20	—	ns	$I_D = 6 \text{ A}, V_{GS} = 10 \text{ V},$
Rise time	t <sub>r</sub>	—	70	—	ns	$R_L = 5 \Omega$
Turn-off delay time	t <sub>d(off)</sub>	—	120	—	ns	
Fall time	t <sub>f</sub>	—	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 <sub>rr</sub>	—	450	—	ns	$I_F = 12 \text{ A}, V_{GS} = 0,$ $di_F/dt = 100 \text{ A}/\mu\text{s}$

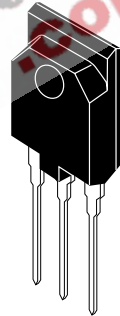
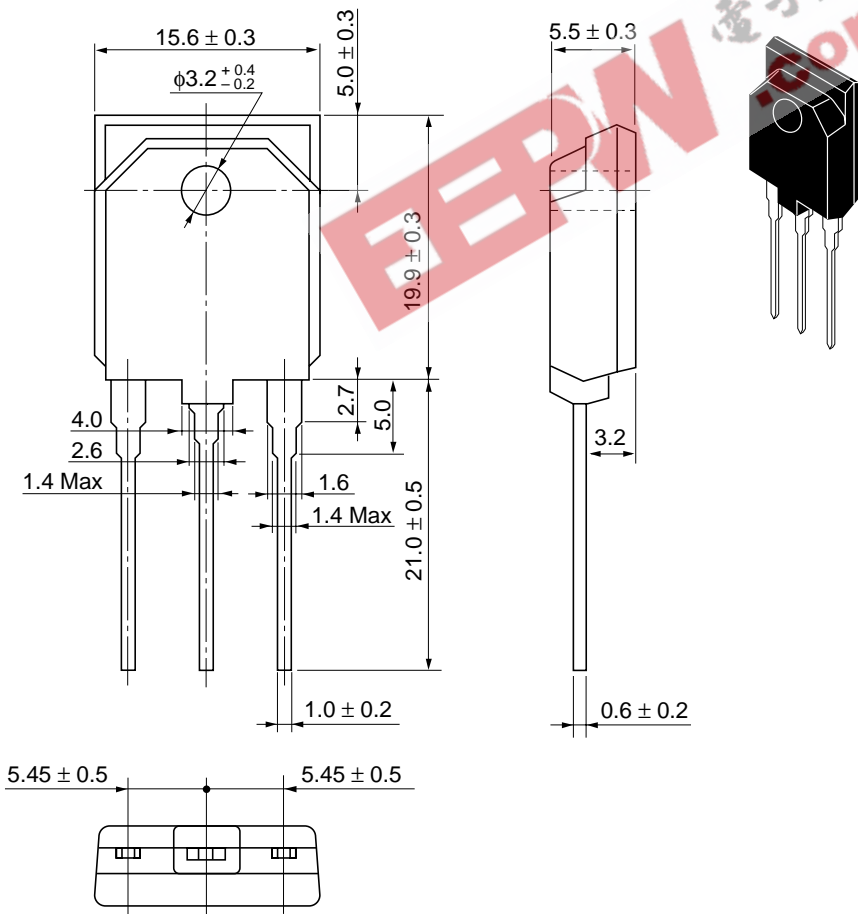
Note: 1. Pulse test

See characteristic curves of 2SK1165, 2SK1166.

## 2SK1328, 2SK1329



Unit: mm



Hitachi Code	TO-3PFM
JEDEC	—
EIAJ	—
Weight (reference value)	5.6 g

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