
2SK1328, 2SK1329

Silicon N-Channel MOS FET

HITACHI

ADE-208-1270 (Z)
1st. Edition
Mar. 2001

Application

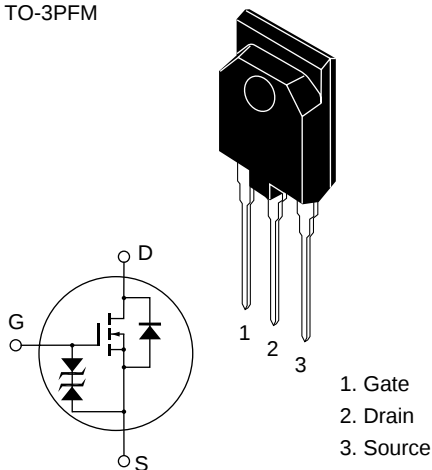
High speed power switching

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		P_{ch}^{*2}	60	W
Channel temperature		Tch	150	°C
Storage temperature		Tstg	−55 to +150	°C

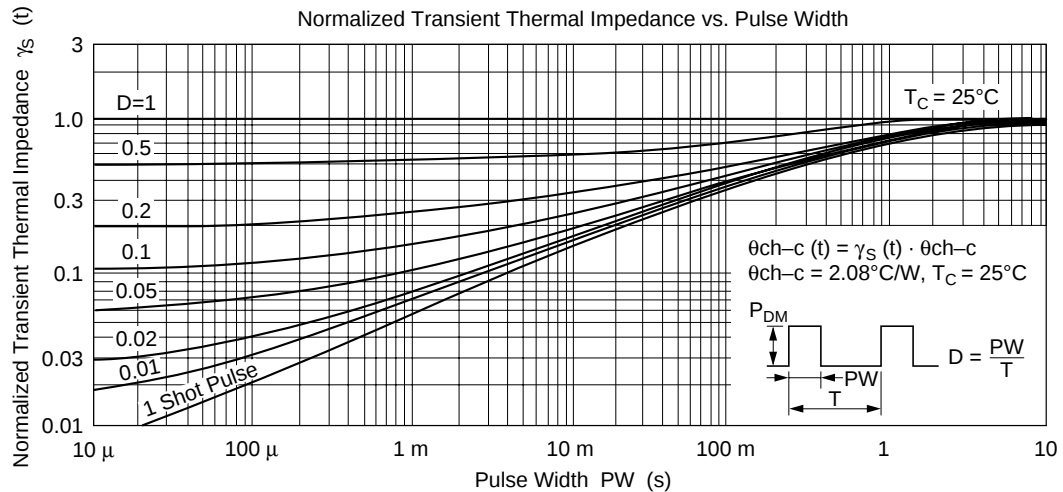
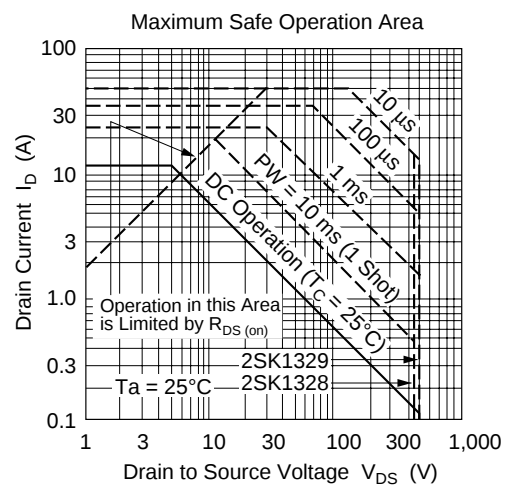
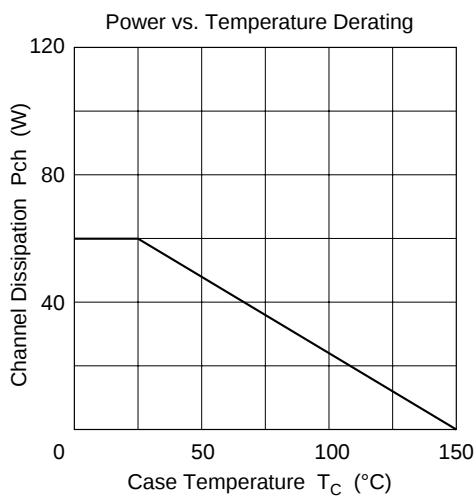
Notes: 1. PW 10 μs, duty cycle 1%
2. Value at Tc = 25°C

Electrical Characteristics (Ta = 25°C)

Item		Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1328 2SK1329	$V_{(BR)DSS}$	450 500	—	—	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 2SK1329	I_{DSS}	—	—	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 2SK1329	$R_{DS(on)}$	— —	0.40 0.45	0.55 0.60		$I_D = 6 \text{ A}$, $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance		yfs	6.0	10	—	S	$I_D = 6 \text{ A}$, $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance		Ciss	—	1450	—	pF	$V_{DS} = 10 \text{ V}$, $V_{GS} = 0$,
Output capacitance		Coss	—	410	—	pF	f = 1 MHz
Reverse transfer capacitance		Crss	—	55	—	pF	
Turn-on delay time		$t_{d(on)}$	—	20	—	ns	$I_D = 6 \text{ A}$, $V_{GS} = 10 \text{ V}$,
Rise time		t_r	—	70	—	ns	$R_L = 5$
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

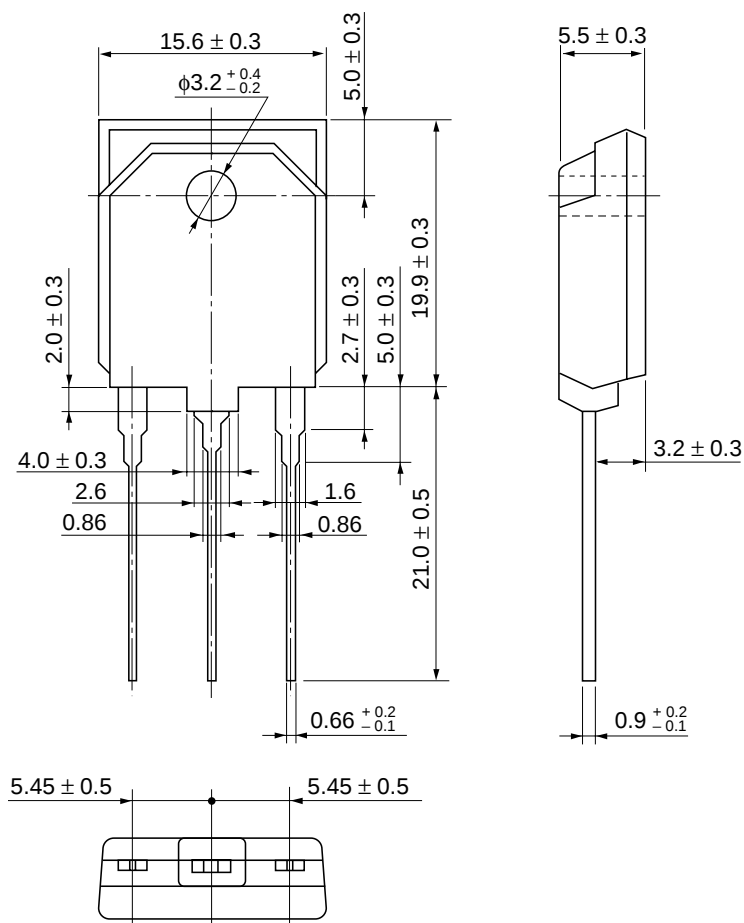
See characteristic curves of 2SK1165, 2SK1166.



Package Dimensions

As of January, 2001

Unit: mm



Hitachi Code	TO-3PFM
JEDEC	—
EIAJ	—
Mass (reference value)	5.2 g

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