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# 2SK1566, 2SK1567

Silicon N-Channel MOS FET

# HITACHI

ADE-208-1293 (Z)  
1st. Edition  
Mar. 2001

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## Application

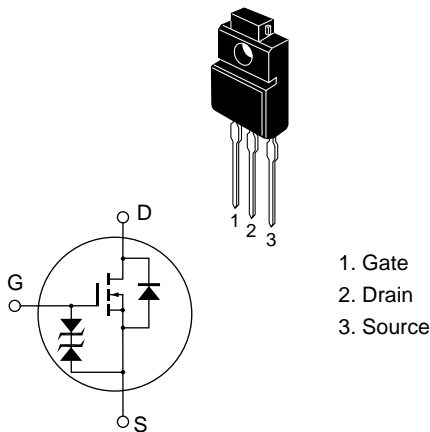
High speed power switching

## Features

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

## Outline

TO-220FM



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## 2SK1566, 2SK1567

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

Item		Symbol	Ratings	Unit
Drain to source voltage	2SK1566	$V_{DSS}$	450	V
	2SK1567		500	
Gate to source voltage		$V_{GSS}$	±30	V
Drain current		$I_D$	7	A
Drain peak current		$I_{D(pulse)}$ <sup>*1</sup>	28	A
Body to drain diode reverse drain current		$I_{DR}$	7	A
Channel dissipation		$P_{ch}$ <sup>*2</sup>	35	W
Channel temperature		$T_{ch}$	150	°C
Storage temperature		$T_{stg}$	-55 to +150	°C

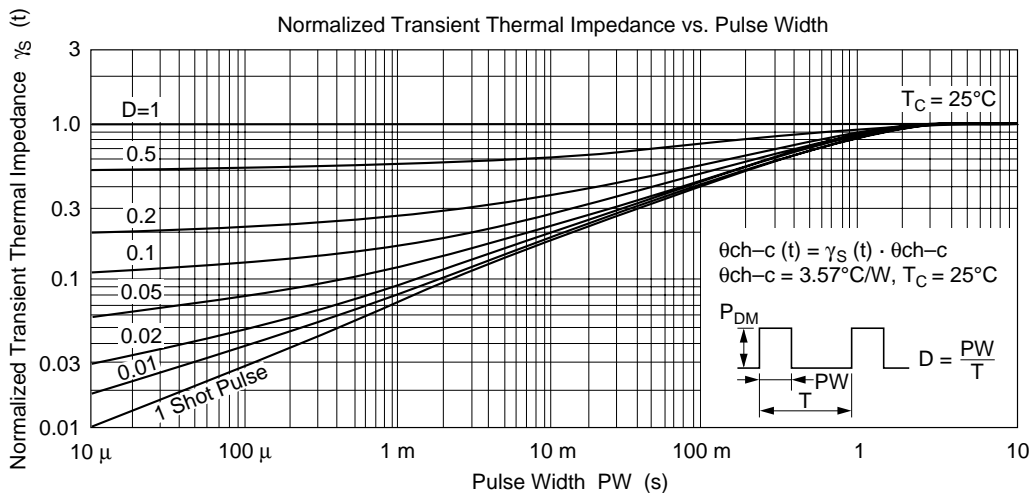
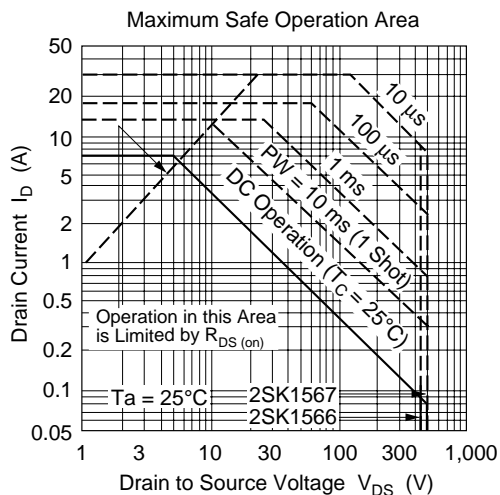
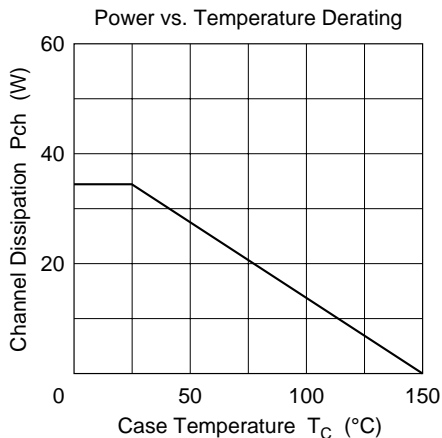
Note 1. PW 10 μs, duty cycle 1%  
2. Value at  $T_c = 25^\circ\text{C}$

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

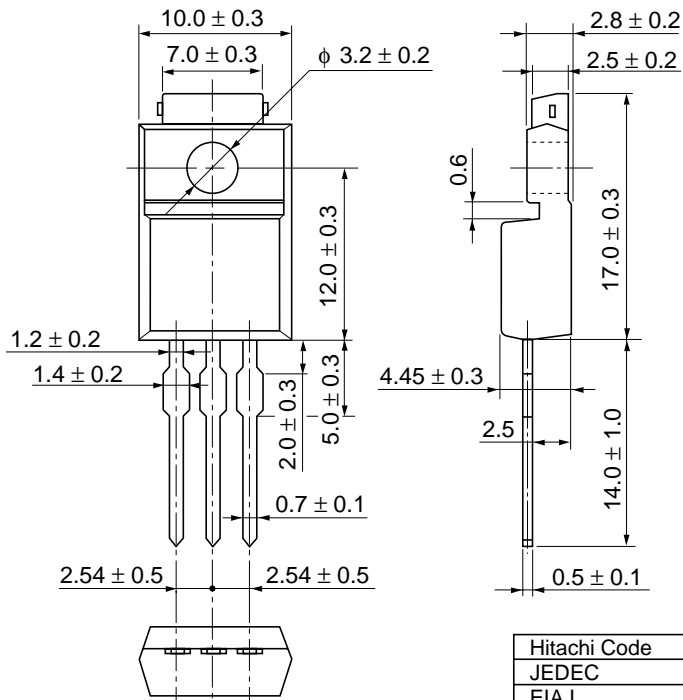
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	2SK1566 $V_{(BR)DSS}$ 2SK1567	450 500	—	—	V	$I_D = 10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = \pm 100 \mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±10	μA	$V_{GS} = \pm 25 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	2SK1566 $I_{DSS}$ 2SK1567	—	—	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	2SK1566 $R_{DS(on)}$ 2SK1567	—	0.6 0.7	0.8 0.9		$I_D = 4 \text{ A}$ , $V_{GS} = 10 \text{ V}^{*1}$
Forward transfer admittance	yfs	4.0	6.5	—	S	$I_D = 4 \text{ A}$ , $V_{DS} = 10 \text{ V}^{*1}$
Input capacitance	Ciss	—	1050	—	pF	$V_{DS} = 10 \text{ V}$ , $V_{GS} = 0$ ,
Output capacitance	Coss	—	280	—	pF	f = 1 MHz
Reverse transfer capacitance	Crss	—	40	—	pF	
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	$I_D = 4 \text{ A}$ , $V_{GS} = 10 \text{ V}$ ,
Rise time	$t_r$	—	55	—	ns	$R_L = 7.5$
Turn-off delay time	$t_{d(off)}$	—	95	—	ns	
Fall time	$t_f$	—	40	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	0.95	—	V	$I_F = 7 \text{ A}$ , $V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	320	—	ns	$I_F = 7 \text{ A}$ , $V_{GS} = 0$ , $di_F/dt = 100 \text{ A}/\mu\text{s}$

Note 1. Pulse test

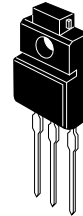
See characteristic curves of 2SK1157, 2SK1158.



Package Dimensions



As of January, 2001  
Unit: mm



Hitachi Code	TO-220FM
JEDEC	—
EIAJ	Conforms
Mass (reference value)	1.8 g

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