

# 2SK2569

Silicon N-Channel MOS FET

# HITACHI

ADE-208-384  
1st. Edition

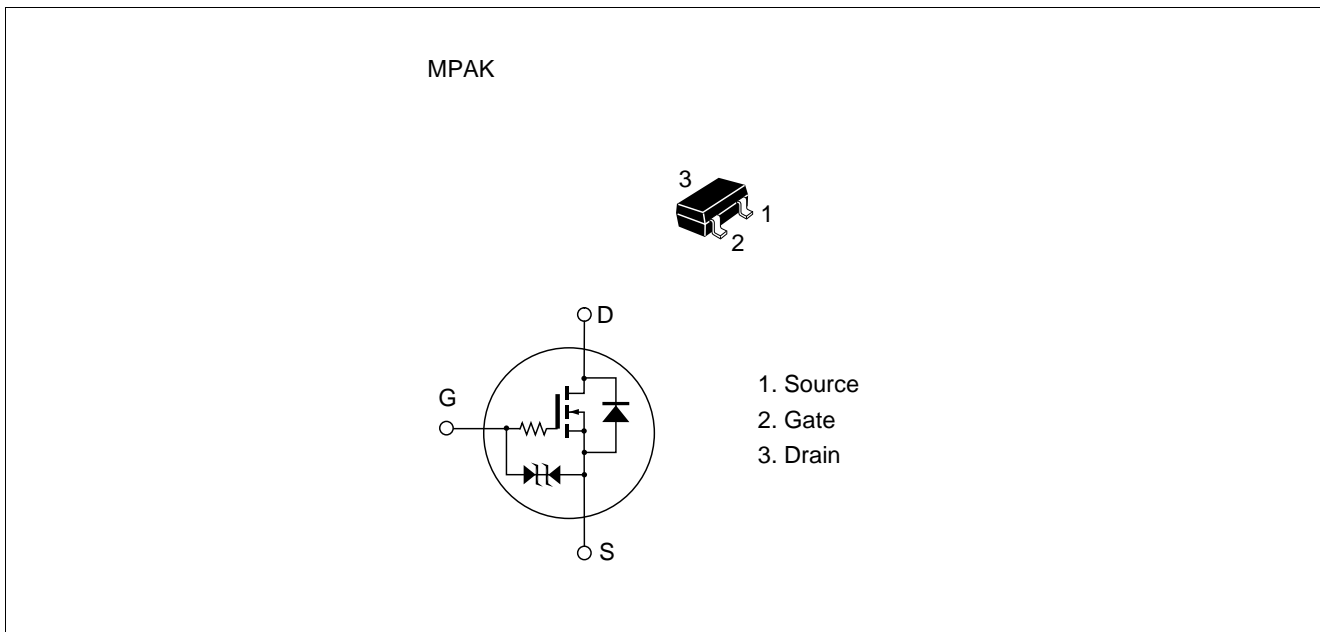
## Application

Low frequency power switching

## Features

- Low on-resistance.
- $R_{DS(on)} = 2.6 \text{ max.}$  (at  $V_{GS} = 4 \text{ V}$ ,  $I_D = 100\text{mA}$ )
- 2.5V gate drive device.
- Small package (MPAK).

## Outline



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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	50	V
Gate to source voltage	$V_{GSS}$	±20	V
Drain current	$I_D$	0.2	A
Drain peak current	$I_{D(pulse)}^{*1}$	0.4	A
Channel dissipation	Pch <sup>*2</sup>	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

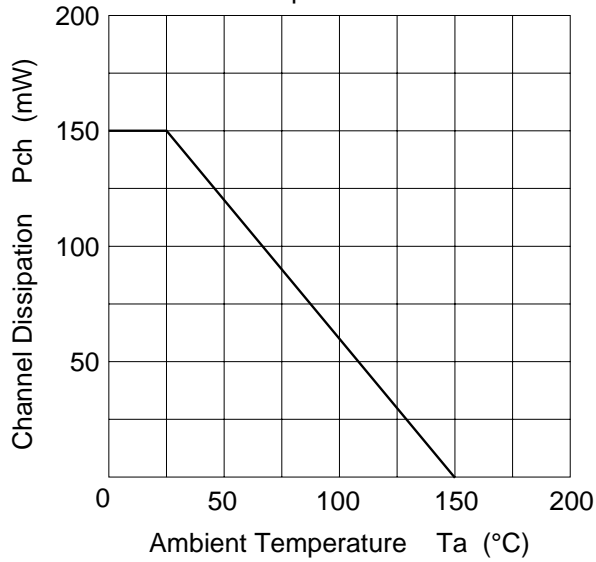
Notes 1.  $PW \leq 10 \mu s$ , duty cycle  $\leq 1 \%$

## Electrical Characteristics (Ta = 25°C)

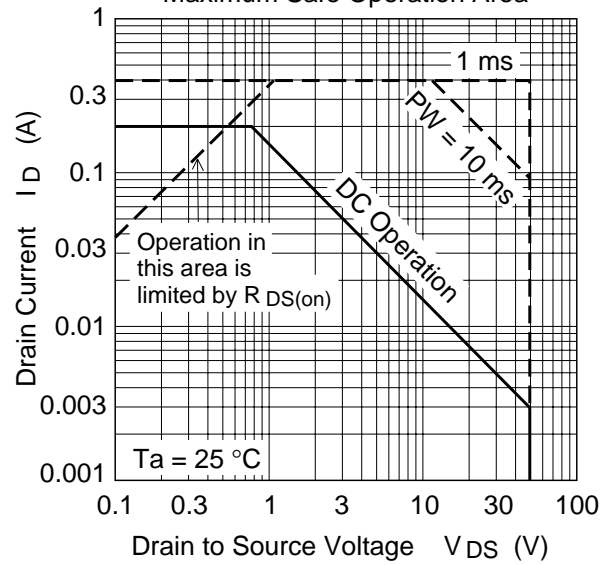
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	50	—	—	V	$I_D = 100 \mu A$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	1.0	μA	$V_{DS} = 40 V$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±2.0	μA	$V_{GS} = \pm 16 V$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	0.5	—	1.5	V	$I_D = 10 \mu A$ , $V_{DS} = 5 V$
Static drain to source on state resistance	$R_{DS(on)1}$	—	2.0	2.6	Ω	$I_D = 100 mA$ $V_{GS} = 4 V^{*1}$
Static drain to source on state resistance	$R_{DS(on)2}$	—	3.1	5.0	Ω	$I_D = 40 mA$ $V_{GS} = 2.5 V^{*1}$
Foward transfer admittance	$ y_{fs} $	0.13	0.23	—	S	$I_D = 100 mA$ $V_{DS} = 10 V$
Input capacitance	Ciss	—	14.0	—	pF	$V_{DS} = 10 V$
Output capacitance	Coss	—	17.2	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	1.73	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	40	—	μs	$V_{GS} = 10 V$ , $I_D = 100 mA$
Rise time	$t_r$	—	86	—	μs	$R_L = 300 \Omega$
Turn-off delay time	$t_{d(off)}$	—	1120	—	μs	
Fall time	$t_f$	—	430	—	μs	

Notes 1. Pulse Test  
2. Marking is "ZN—"

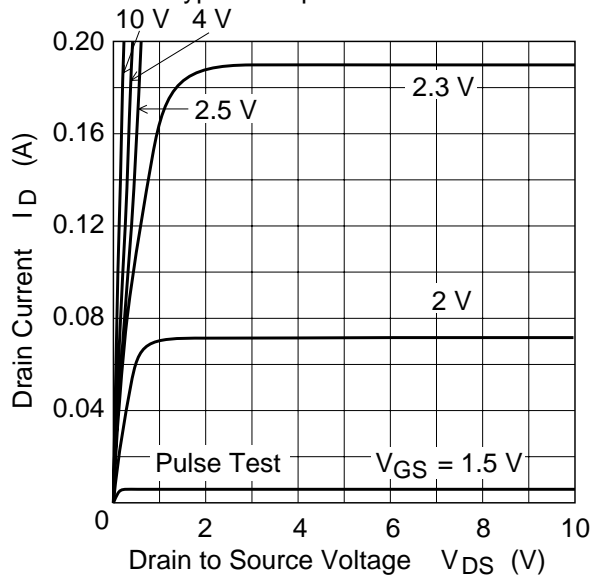
Maximum Channel Dissipation Curve



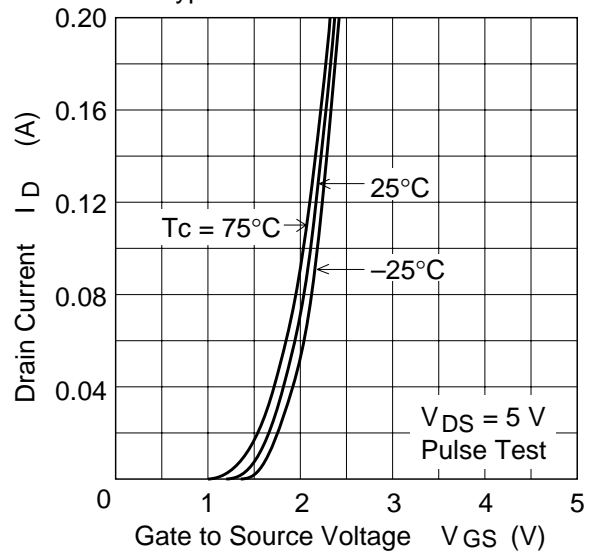
Maximum Safe Operation Area

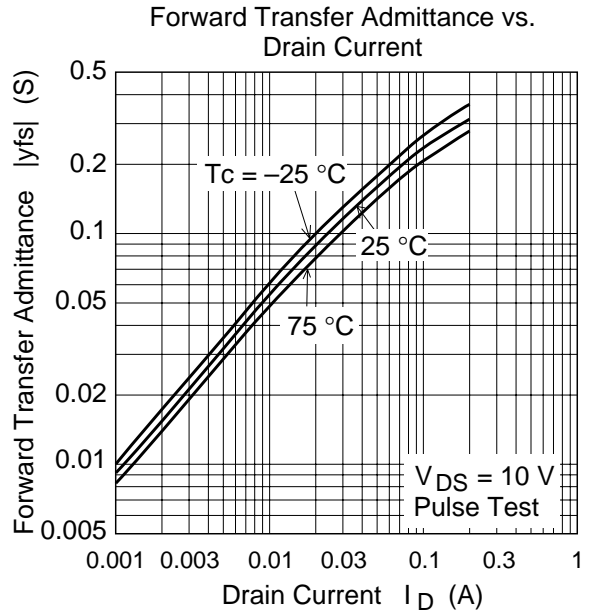
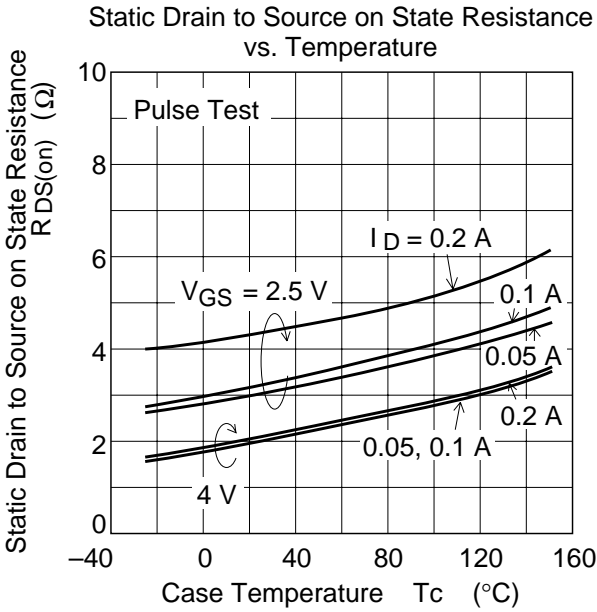
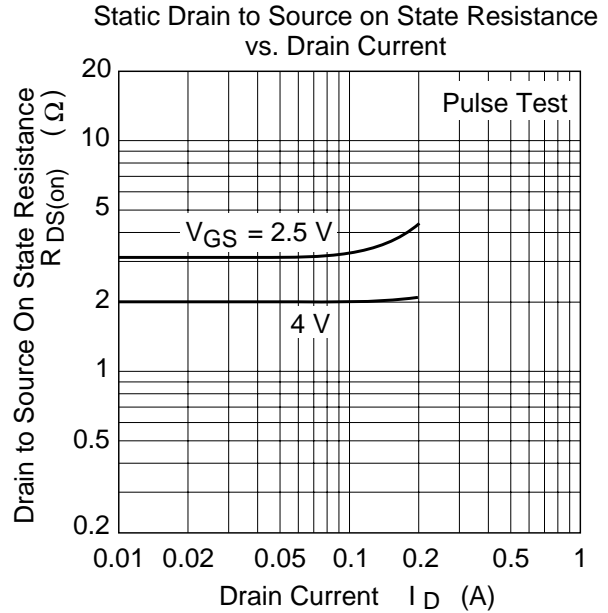
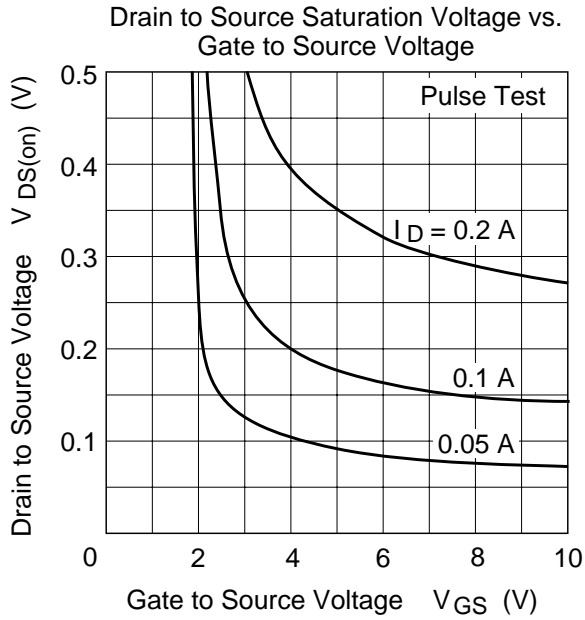


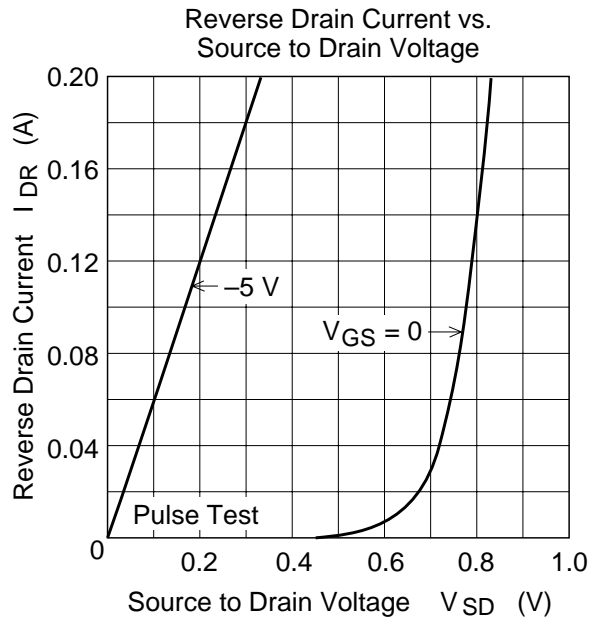
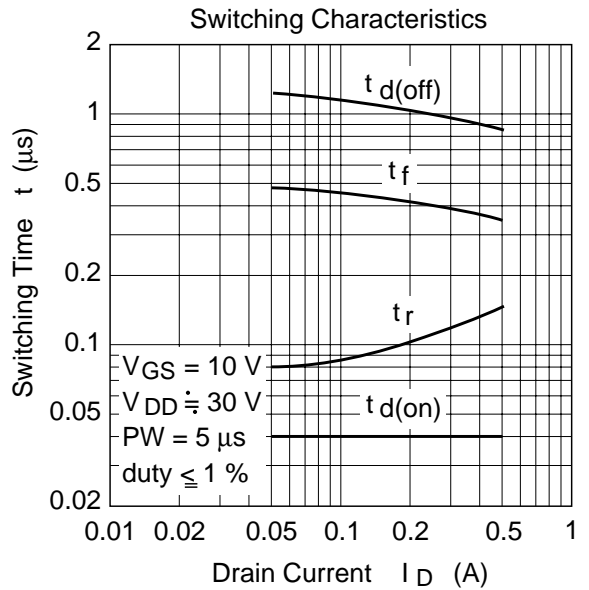
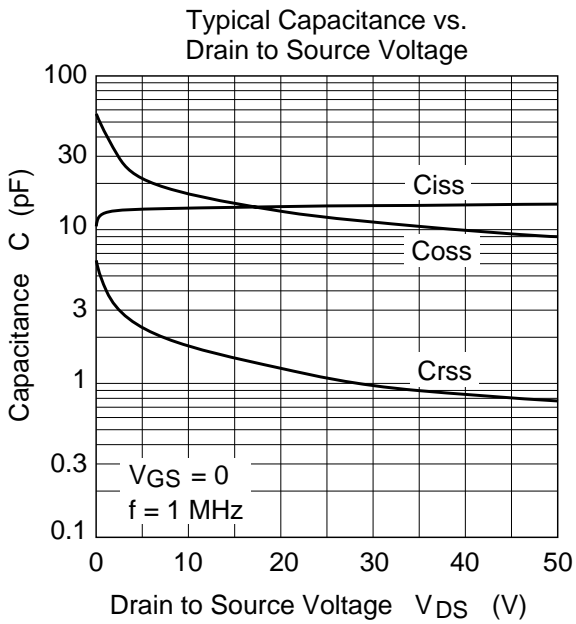
Typical Output Characteristics



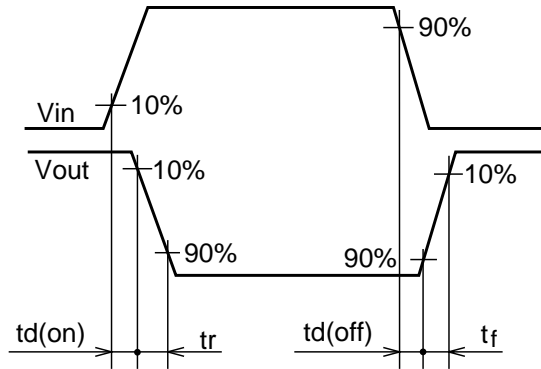
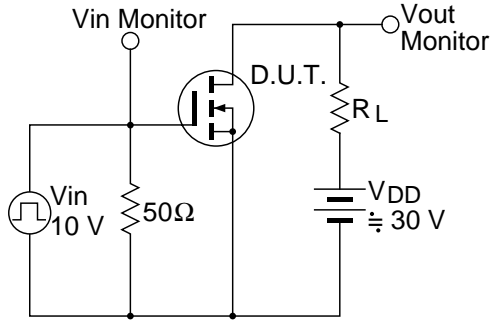
Typical Transfer Characteristics



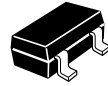
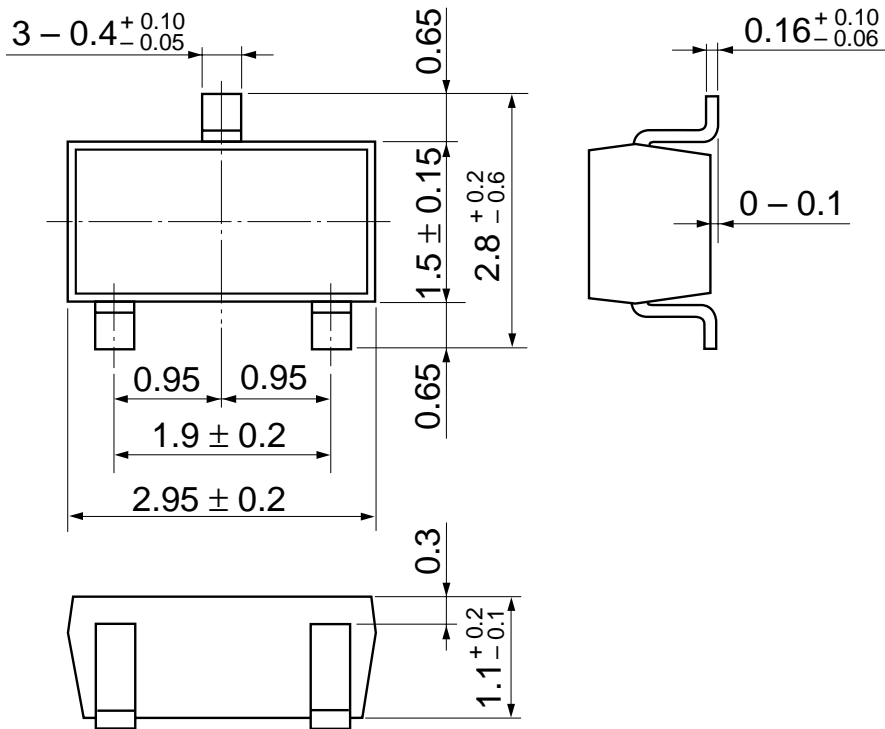




Avalanche Test Circuit and Waveform



Unit: mm



Hitachi Code	MPAK
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.011 g

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