

# 2SK3076(L),2SK3076(S)

Silicon N Channel MOS FET  
High Speed Power Switching

# HITACHI

ADE-208-656 (Z)

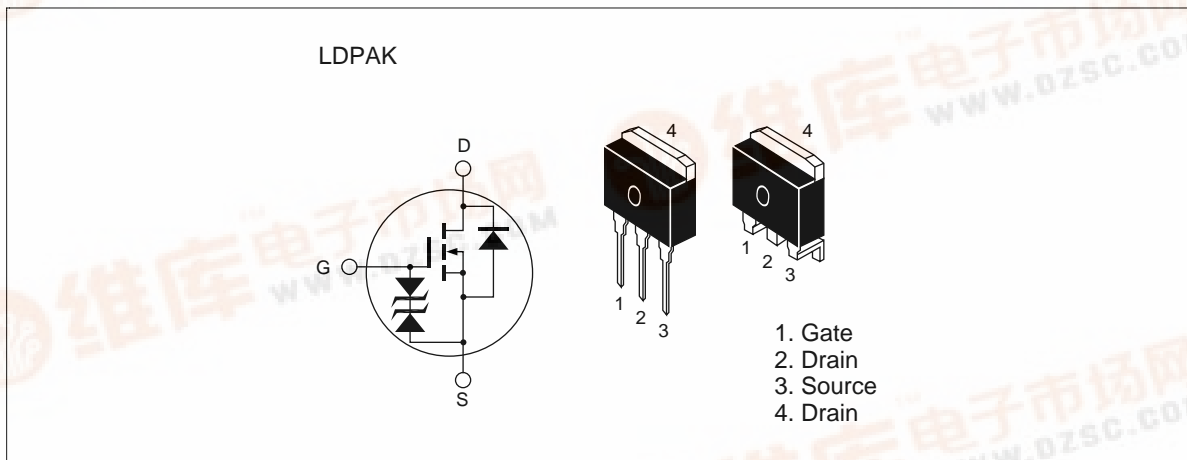
1st. Edition

Jun 1998

## Features

- Low on-resistance
- High speed switching
- Low drive current.
- Built-in fast recovery diode (trr=120 ns)

## Outline



## 2SK3076(L),2SK3076(S)

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

Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	500	V
Gate to source voltage	$V_{GSS}$	±30	V
Drain current	$I_D$	7	A
Drain peak current	$I_{D(pulse)}$ <sup>Note1</sup>	28	A
Body-drain diode reverse drain current	$I_{DR}$	7	A
Channel dissipation	Pch <sup>Note2</sup>	60	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

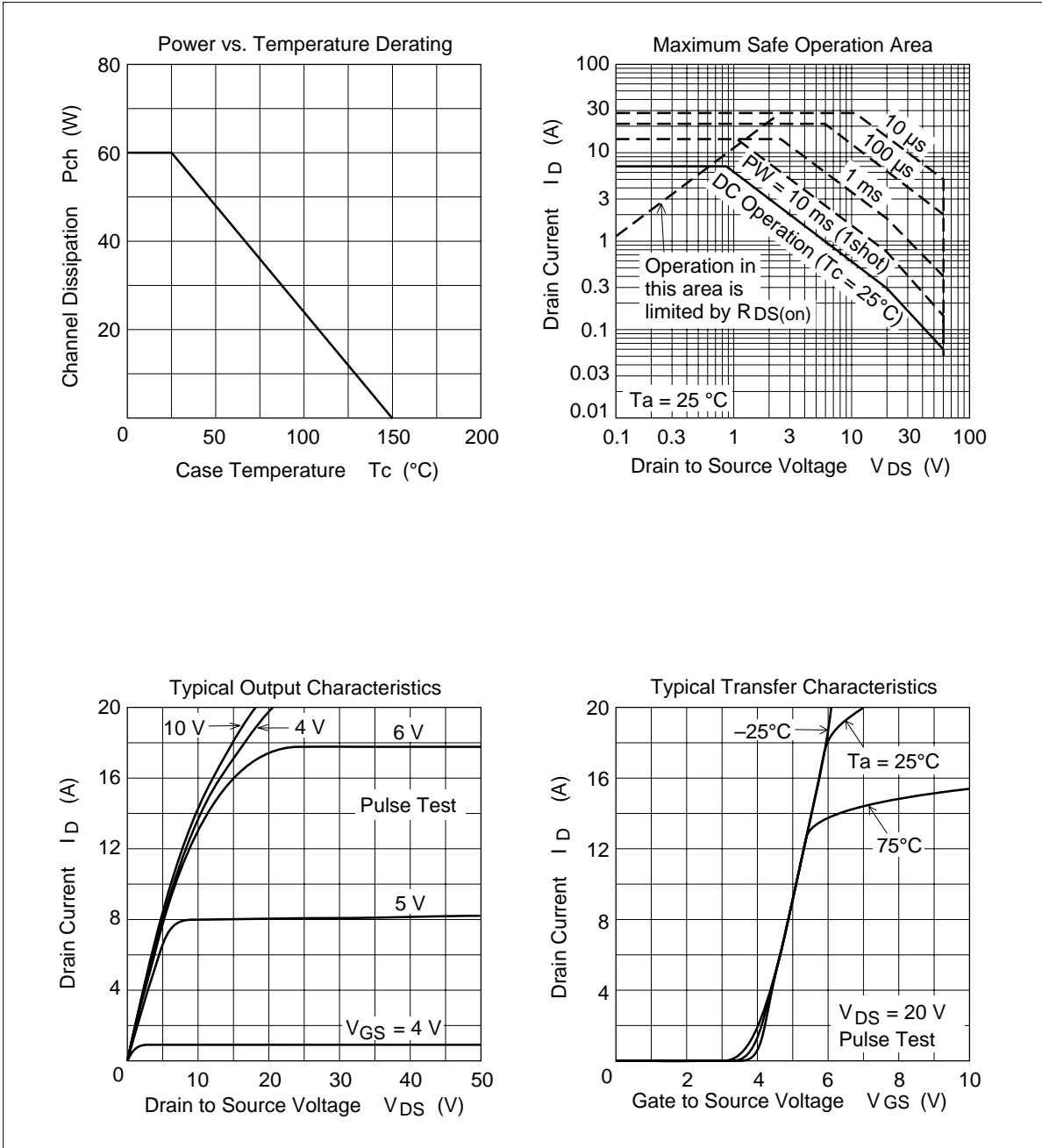
Note: 1. PW ≤ 10μs, duty cycle ≤ 1 %  
 2. Value at Tc = 25°C

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

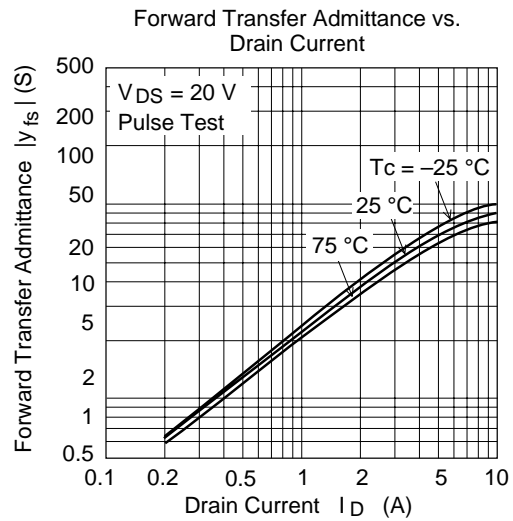
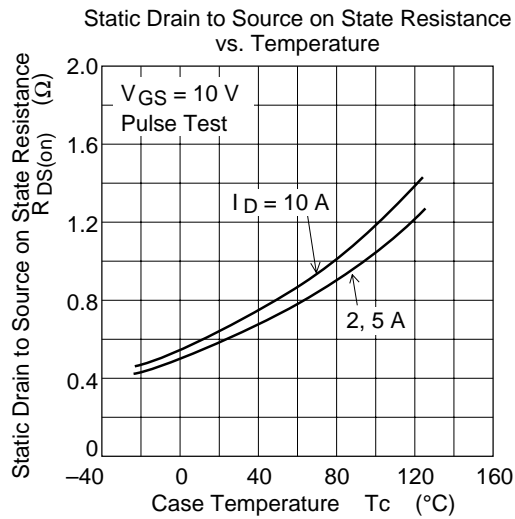
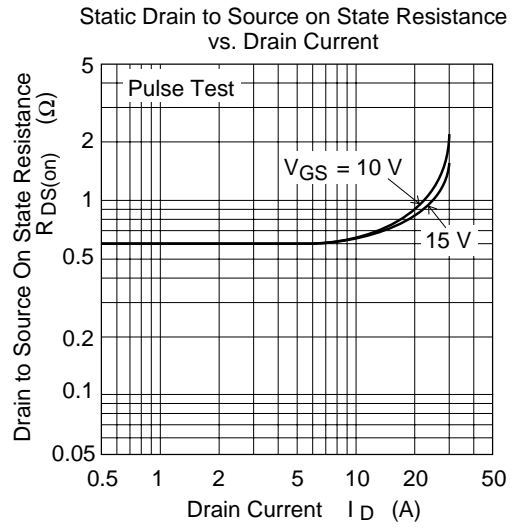
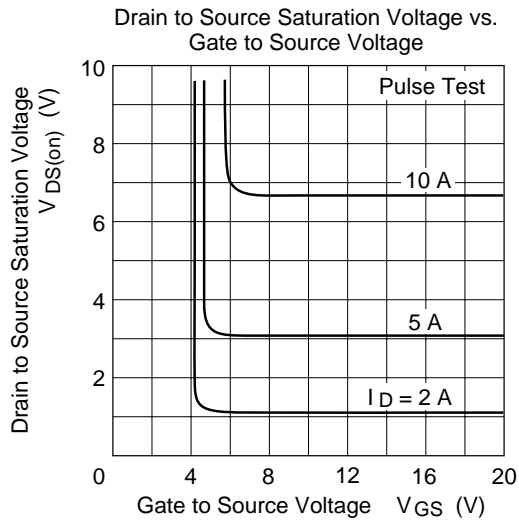
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	500	—	—	V	$I_D = 10mA, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±30	—	—	V	$I_G = ±100μA, V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±10	μA	$V_{GS} = ±25V, V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	250	μA	$V_{DS} = 400V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	2.0	—	3.0	V	$I_D = 1mA, V_{DS} = 10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.7	0.9	Ω	$I_D = 4A, V_{GS} = 10V$ <sup>Note4</sup>
Forward transfer admittance	$ y_{fs} $	3.5	6.0	—	S	$I_D = 4A, V_{DS} = 10V$ <sup>Note4</sup>
Input capacitance	Ciss	—	1100	—	pF	$V_{DS} = 10V$
Output capacitance	Coss	—	310	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	50	—	pF	f = 1MHz
Turn-on delay time	$t_{d(on)}$	—	15	—	ns	$I_D = 4A, V_{GS} = 10V$
Rise time	$t_r$	—	55	—	ns	$R_L = 7.5Ω$
Turn-off delay time	$t_{d(off)}$	—	100	—	ns	
Fall time	$t_f$	—	48	—	ns	
Body-drain diode forward voltage	$V_{DF}$	—	0.9	—	V	$I_F = 7A, V_{GS} = 0$
Body-drain diode reverse recovery time	$t_{rr}$	—	120	—	ns	$I_F = 7A, V_{GS} = 0$ diF/ dt = 100A/μs

Note: 4. Pulse test

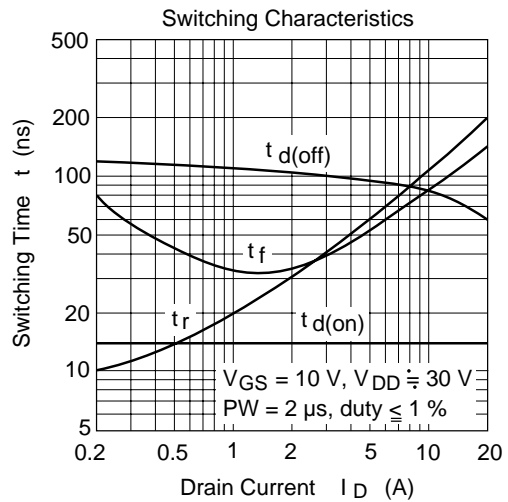
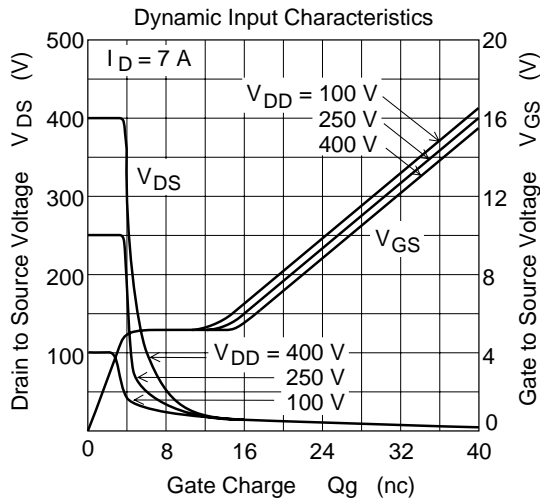
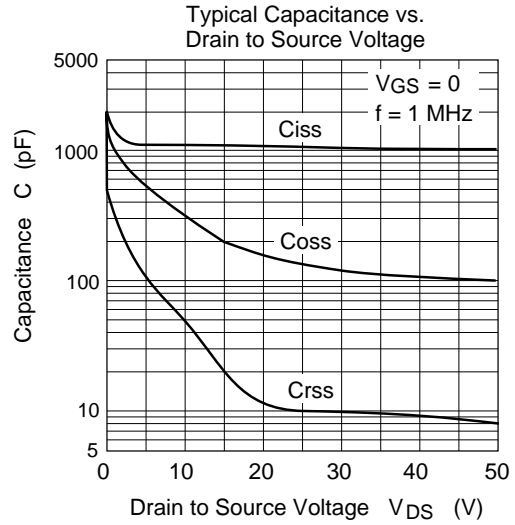
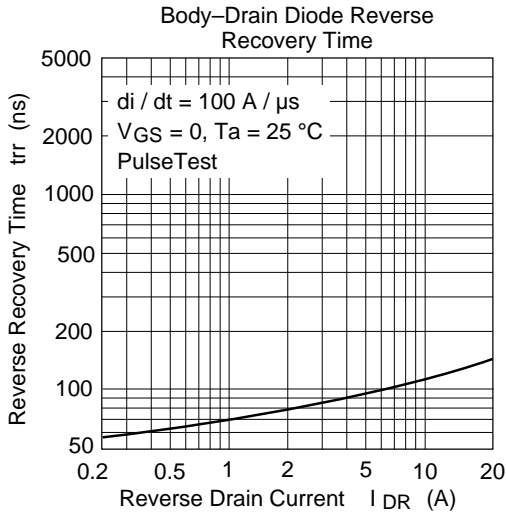
Main Characteristics



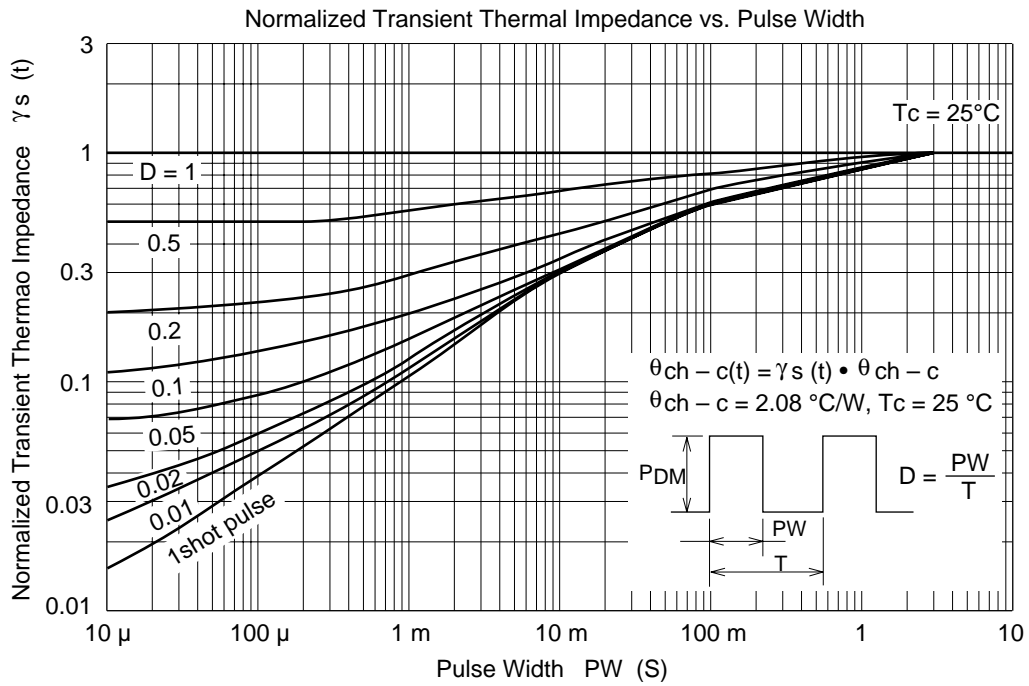
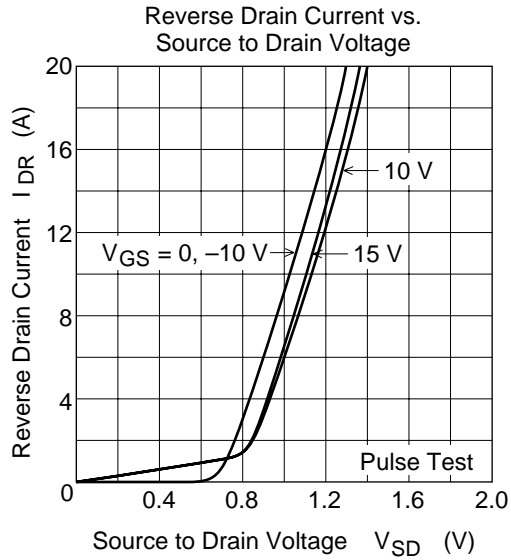
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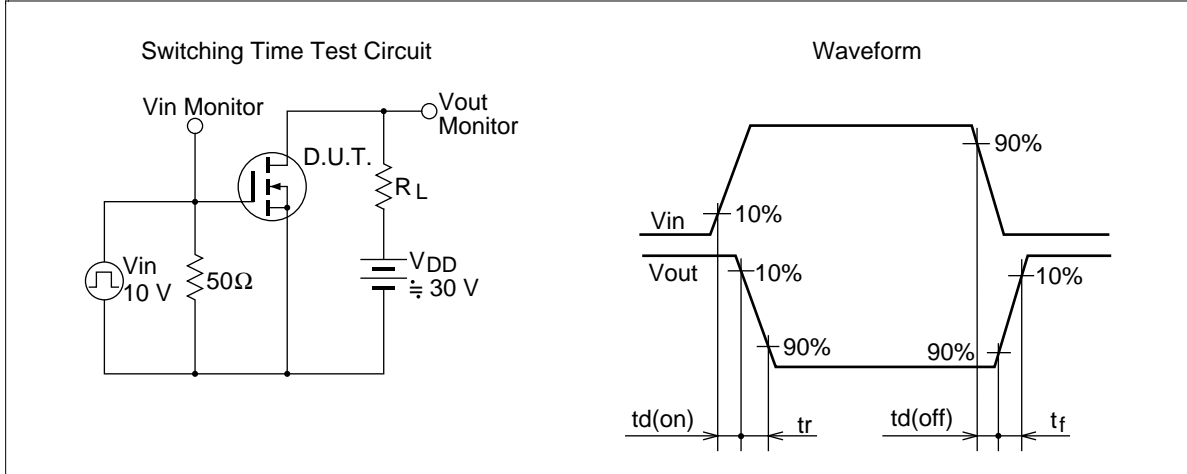
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