

2SK3000

Silicon N Channel MOS FET
Low Frequency Power Switching

HITACHI

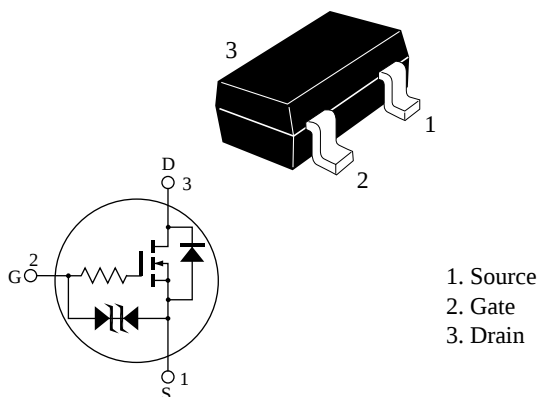
ADE-208-585A (Z)
2nd. Edition
Mar. 2001

Features

- Low on-resistance
 $R_{DS(on)} = 0.25\Omega$ typ. ($V_{GS} = 10\text{ V}$, $I_D = 450\text{ mA}$)
- 4V gate drive devices.
- Small package (MPAK)
- Expansive drain to source surge power capability

Outline

MPAK



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	40	V
Gate to source voltage	V _{GSS}	±10	V
Drain current	I _D	1.0	A
Drain peak current	I _{D(pulse)} ^{Note1}	4.0	A
Reverse drain current	I _{DR}	1.0	A
Channel dissipation	Pch ^{Note2}	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Note: 1. PW ≤ 10μs, duty cycle ≤ 1 %
2. When using the glass epoxy board (10 mm x 10 mm x 1 mm^t)

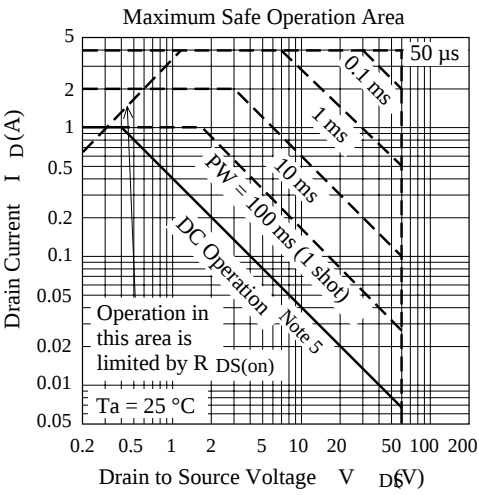
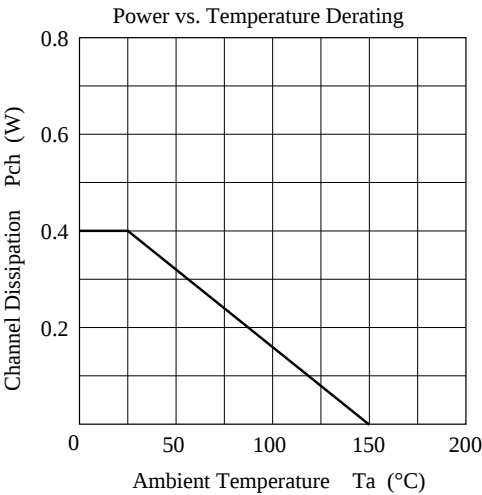
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	40	—	60	V	$I_D = 100\mu A$, $V_{GS} = 0$
Drain to source voltage	$V_{DS(SUS)}$	40	—	—	V	$L = 100\mu H$, $I_D = 3 A$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 10	—	—	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}	—	—	± 5	μA	$V_{GS} = \pm 6.5V$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.1	—	2.1	V	$I_D = 10\mu A$, $V_{DS} = 5V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.5	Ω	$I_D = 450 mA$ $V_{GS} = 4V$ ^{Note3}
Static drain to source on state resistance	$R_{DS(on)}$	—	0.25	0.3	Ω	$I_D = 450 mA$ $V_{GS} = 10V$ ^{Note3}
Forward transfer admittance	$ y_{fs} $	0.5	1.2	—	S	$I_D = 450 mA$ $V_{DS} = 10V$ ^{Note3}
Input capacitance	C_{iss}	—	14.0	—	pF	$V_{DS} = 10V$
Output capacitance	C_{oss}	—	68	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	3.0	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	0.12	—	μs	$V_{GS} = 4V$, $I_D = 450 mA$
Rise time	t_r	—	0.6	—	μs	$R_L = 22\Omega$
Turn-off delay time	$t_{d(off)}$	—	1.7	—	μs	
Fall time	t_f	—	1.4	—	μs	

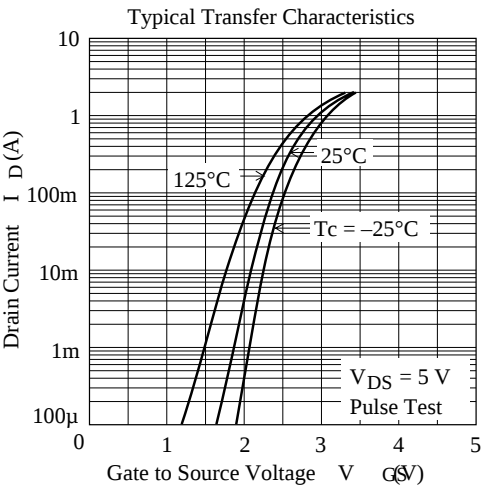
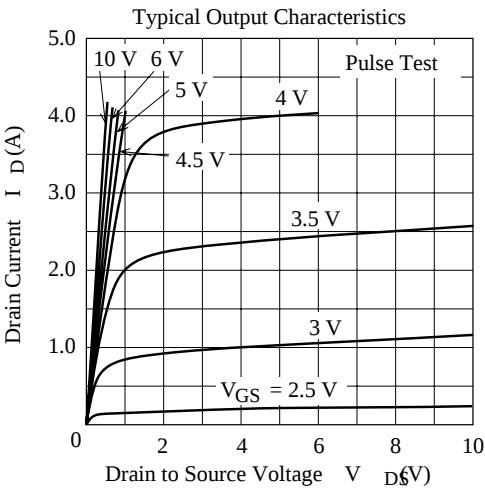
Note: 3. Pulse test

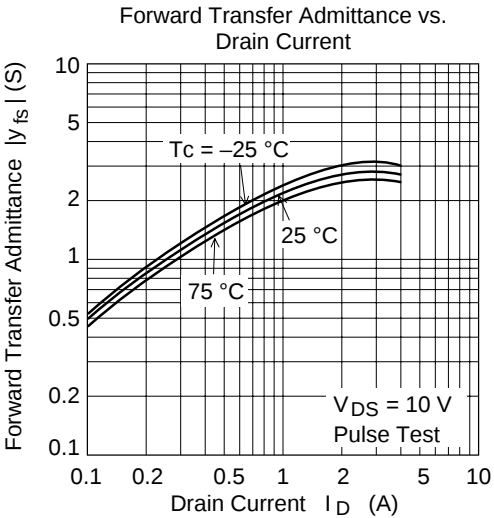
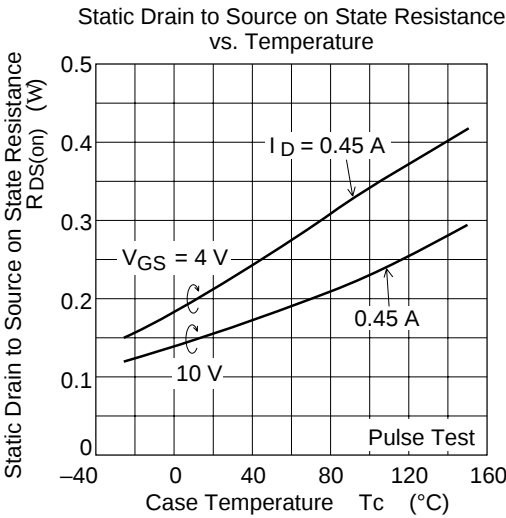
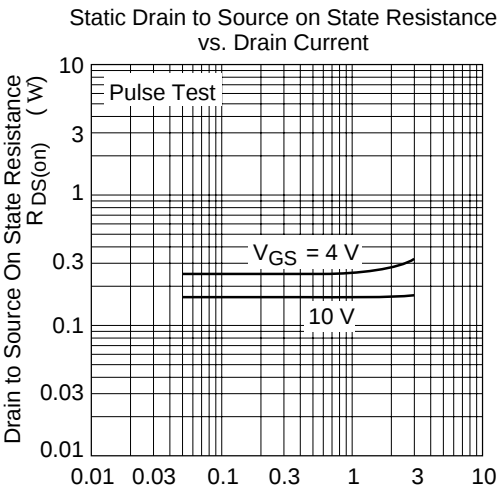
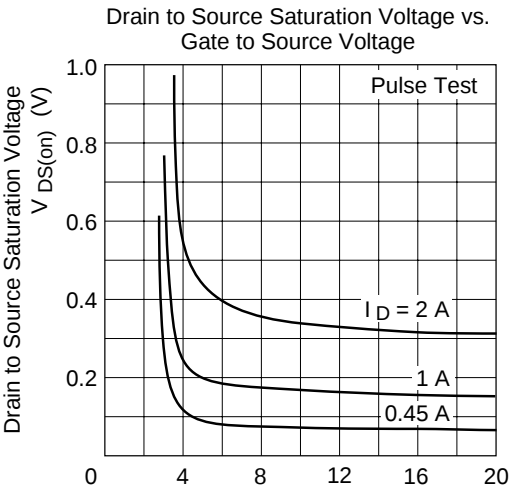
4. Marking is "ZY—".

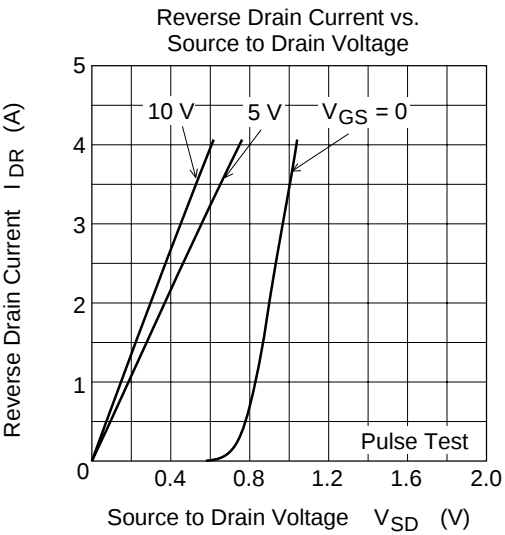
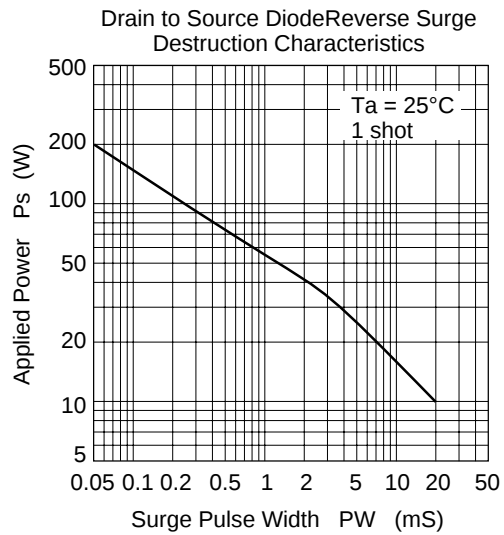
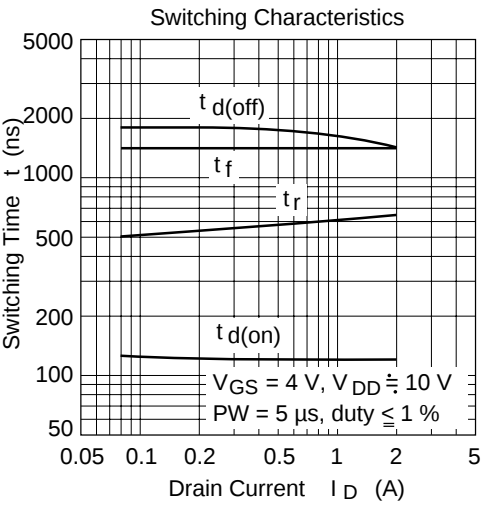
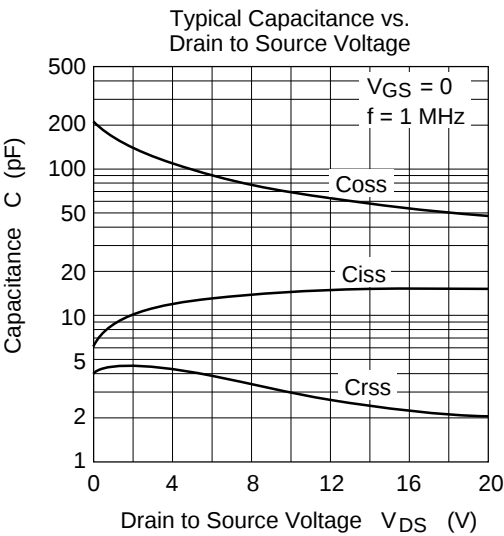
Main Characteristics

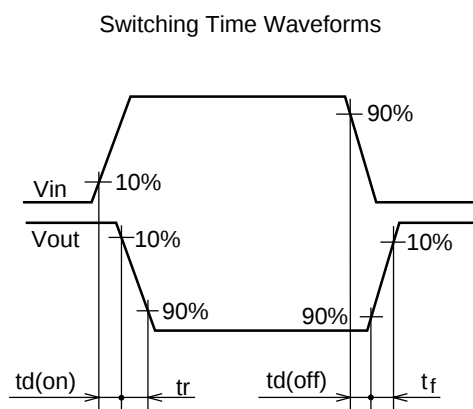
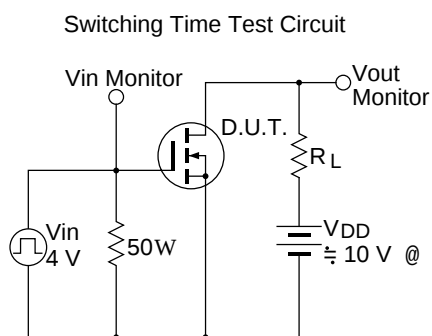
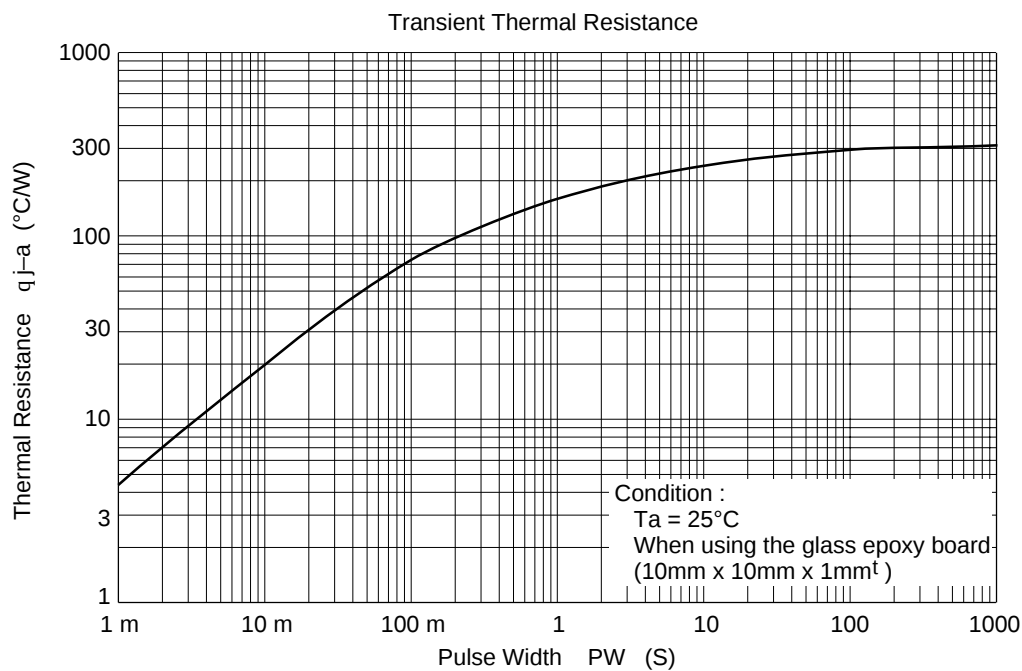


Note5 : When using the glass epoxy (10mm x 10mm x 1mm)



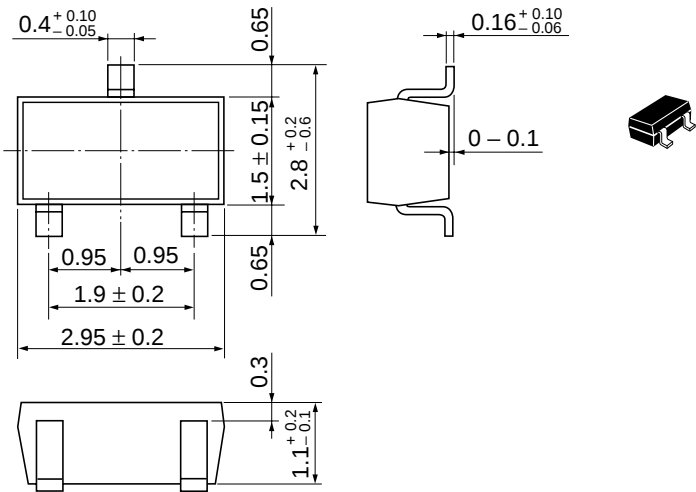






Package Dimensions

As of January, 2001
Unit: mm



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

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