

2SK3288

Silicon N Channel MOS FET
High Speed Switching

HITACHI

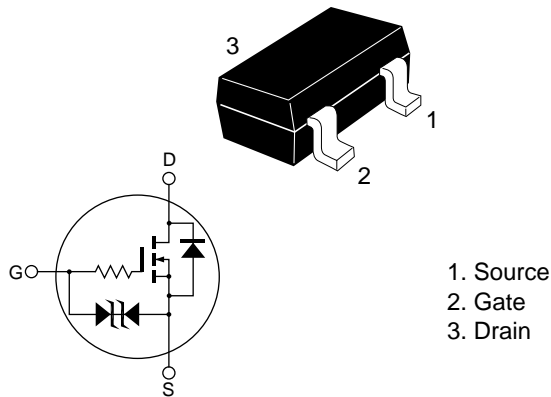
ADE-208-803 (Z)
1st.Edition.
June 1999

Features

- Low on-resistance
 $R_{DS} = 2.7 \Omega$ typ. ($V_{GS} = 10 \text{ V}$, $I_D = 50 \text{ mA}$)
 $R_{DS} = 4.7 \Omega$ typ. ($V_{GS} = 4 \text{ V}$, $I_D = 20 \text{ mA}$)
- 4 V gate drive device.
- Small package (MPAK)

Outline

MPAK



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	30	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	100	mA
Drain peak current	$I_{D(pulse)}$ ^{Note1}	400	mA
Body-drain diode reverse drain current	I_{DR}	100	mA
Channel dissipation	Pch ^{Note 2}	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

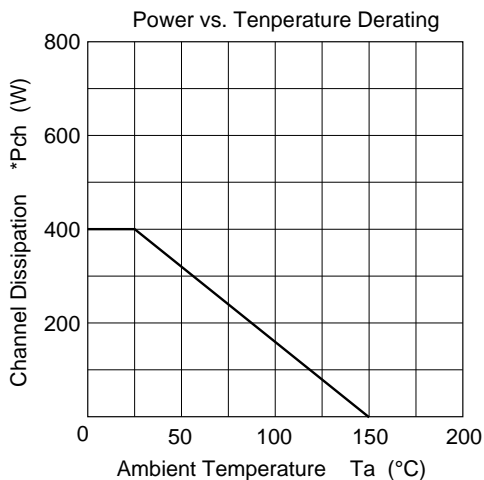
Note: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1\%$
 2. Value on the alumina ceramic board (12.5 x 20 x 0.7 mm)

Electrical Characteristics (Ta = 25°C)

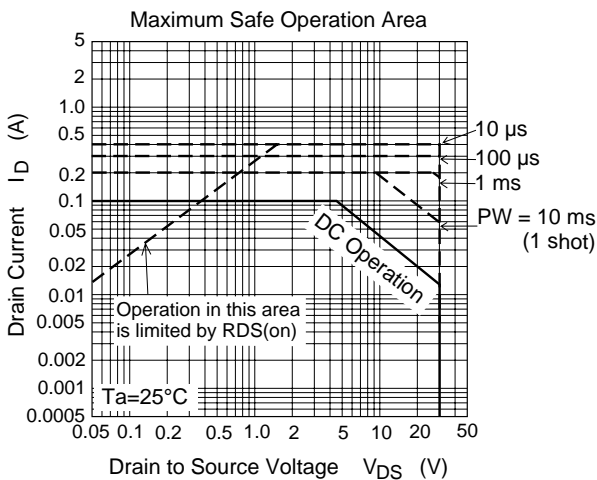
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	$I_D = 100 \mu A, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100 \mu A, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±5	μA	$V_{GS} = \pm 16 V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	1	μA	$V_{DS} = 30 V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	1.3	—	2.3	V	$I_D = 10 \mu A, V_{DS} = 5 V$
Static drain to source on state resistance	$R_{DS(on)}$	—	2.7	3.5	Ω	$I_D = 50 mA, V_{GS} = 10 V$ ^{Note 3}
	$R_{DS(on)}$	—	4.7	7.0	Ω	$I_D = 20 mA, V_{GS} = 4 V$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	55	85	—	mS	$I_D = 50 mA, V_{DS} = 10 V$ ^{Note 3}
Input capacitance	Ciss	—	3	—	pF	$V_{DS} = 10 V$
Output capacitance	Coss	—	8	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	1	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	100	—	ns	$I_D = 50 mA, V_{GS} = 10 V$
Rise time	t_r	—	300	—	ns	$R_L = 200 \Omega$
Turn-off delay time	$t_{d(off)}$	—	1100	—	ns	
Fall time	t_f	—	900	—	ns	

Note: 3. Pulse test
 4. Marking is EN

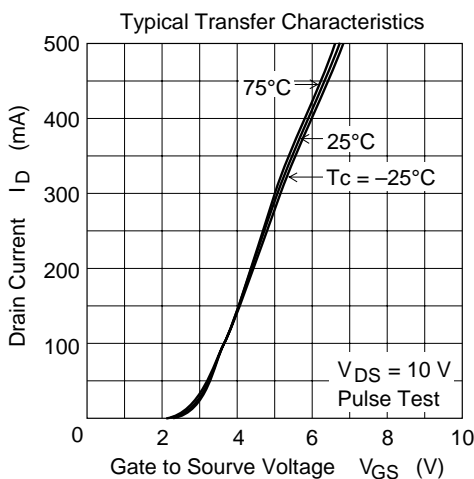
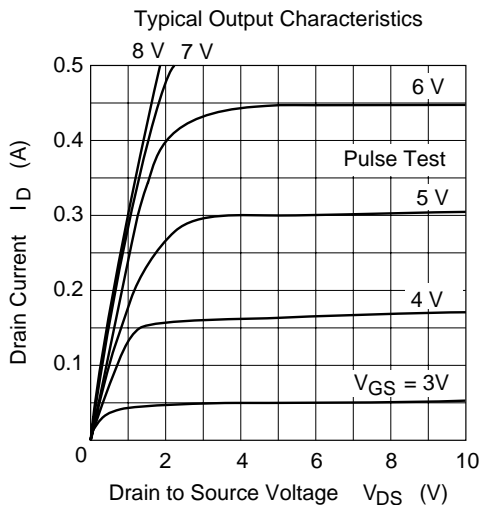
Main Characteristics

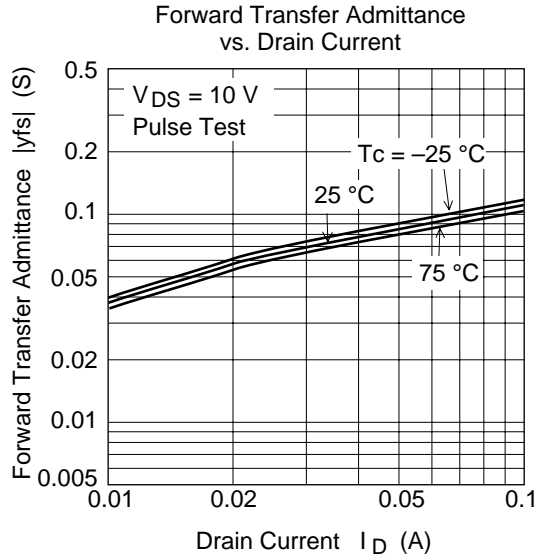
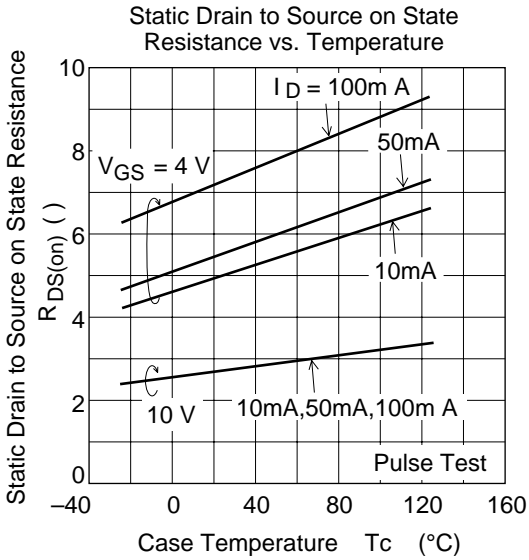
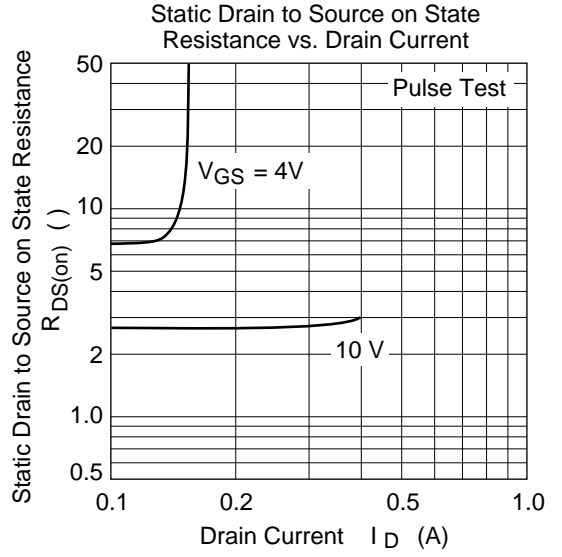
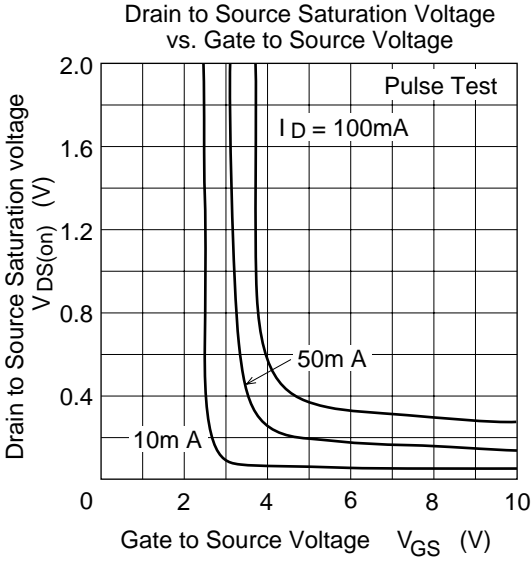


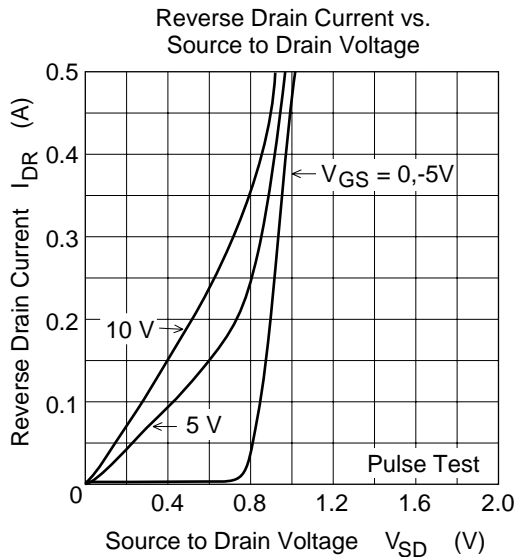
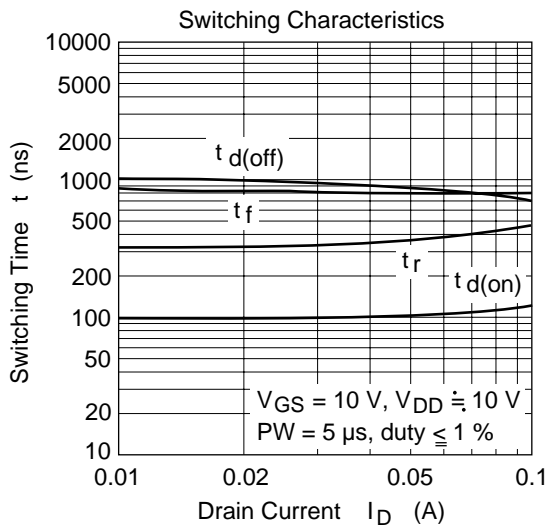
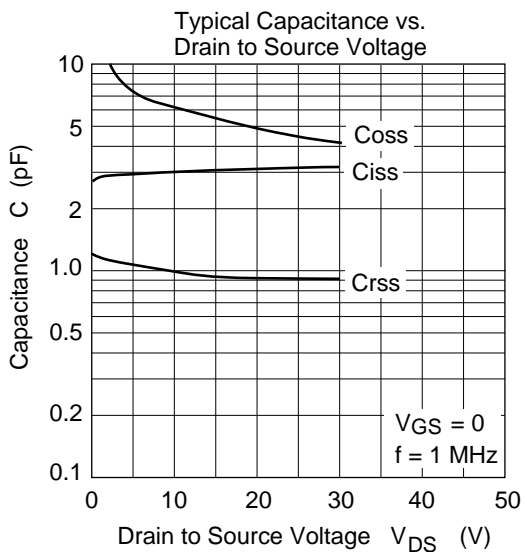
*Value on the alumina ceramic board. (12.5x20x0.7mm)



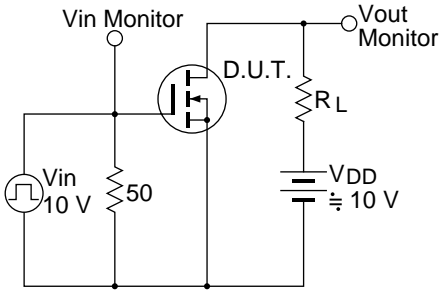
Value on the alumina ceramic board. (12.5x20x0.7mm)



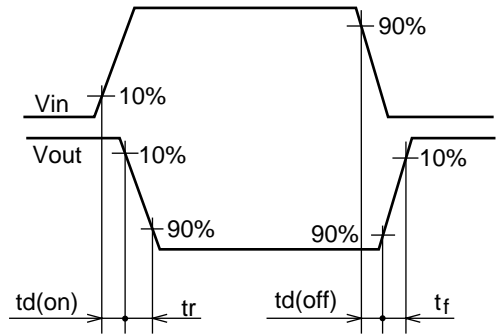




Switching Time Test Circuit

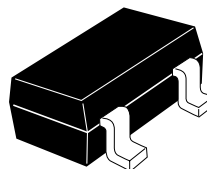
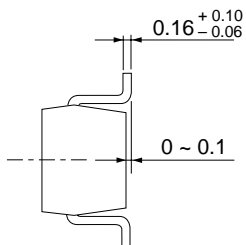
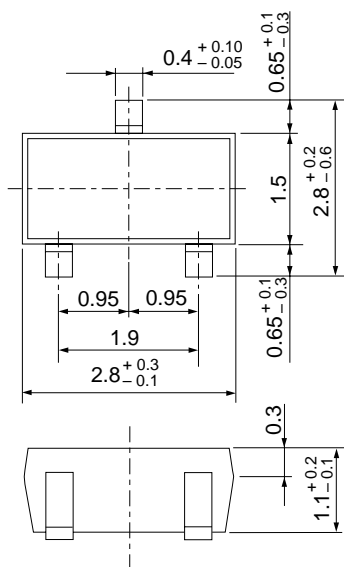


Waveforms



Package Dimensions

Unit: mm



Hitachi Code	MPAK
EIAJ	SC-59A
JEDEC	TO-236Mod

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