

2SJ586

Silicon P Channel MOS FET
High Speed Switching

HITACHI

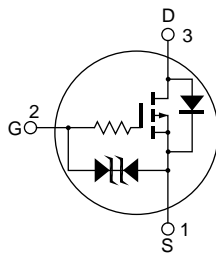
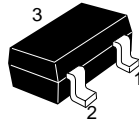
ADE-208-771A (Z)
2nd.Edition.
June 1999

Features

- Low on-resistance
 $R_{DS} = 4.1 \Omega$ typ. ($V_{GS} = -4 \text{ V}$, $I_D = -50 \text{ mA}$)
 $R_{DS} = 6.0 \Omega$ typ. ($V_{GS} = -2.5 \text{ V}$, $I_D = -50 \text{ mA}$)
- 2.5 V gate drive device.
- Small package (CMPAK)

Outline

CMPAK



1. Source
2. Gate
3. Drain

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	-20	V
Gate to source voltage	V_{GSS}	±10	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}	300	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 (12.5x 20 x0.7 mm)

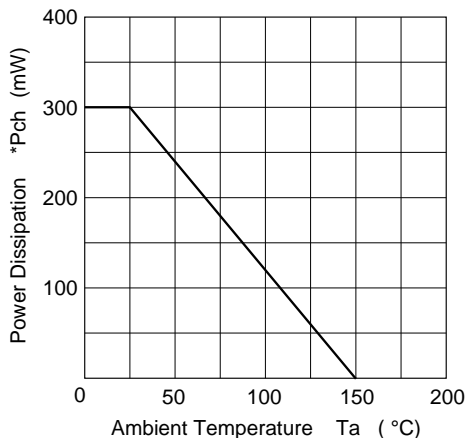
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-20	—	—	V	$I_D = -100 \mu A, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±10	—	—	V	$I_G = \pm 100 \mu A, V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	±5	μA	$V_{GS} = \pm 8 V, V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-1	μA	$V_{DS} = -20 V, V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.8	—	-1.8	V	$I_D = -10 \mu A, V_{DS} = -5 V$
Static drain to source on state resistance	$R_{DS(on)}$	—	4.1	5.0	Ω	$I_D = -50 mA, V_{GS} = -4 V$ ^{Note 3}
	$R_{DS(on)}$	—	6.0	8.5	Ω	$I_D = -50 mA, V_{GS} = -2.5 V$ ^{Note 3}
Forward transfer admittance	$ y_{fs} $	94	144	—	mS	$I_D = -50 mA, V_{DS} = -10 V$ ^{Note 3}
Input capacitance	Ciss	—	28	—	pF	$V_{DS} = -10 V$
Output capacitance	Coss	—	21	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	7	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	30	—	ns	$I_D = -50 mA, V_{GS} = -4 V$
Rise time	t_r	—	90	—	ns	$R_L = 200 \Omega$
Turn-off delay time	$t_{d(off)}$	—	87	—	ns	
Fall time	t_f	—	97	—	ns	

Note: 3. Pulse test
 4. Marking is CP

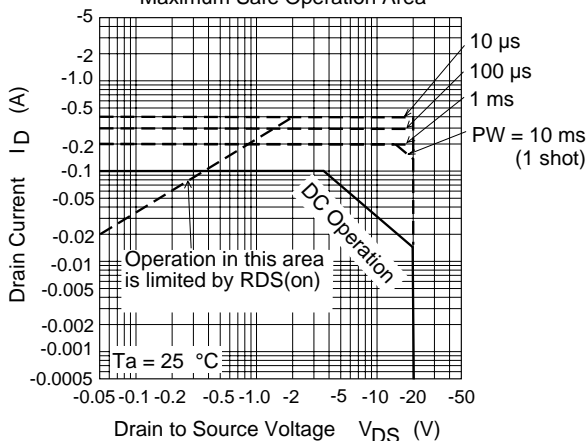
Main Characteristics

Power vs. Temperature Derating



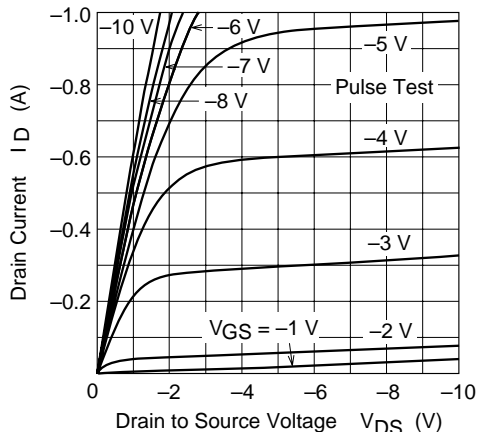
*Value on the alumina ceramic board.(12.5x20x0.7mm)

Maximum Safe Operation Area

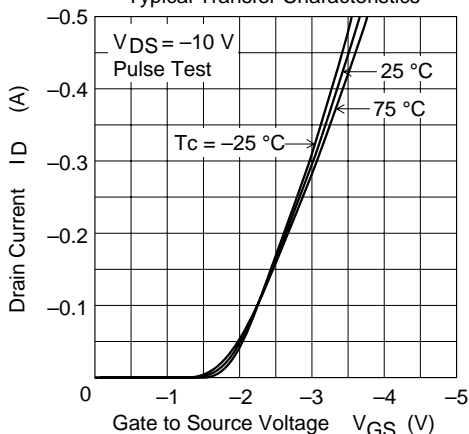


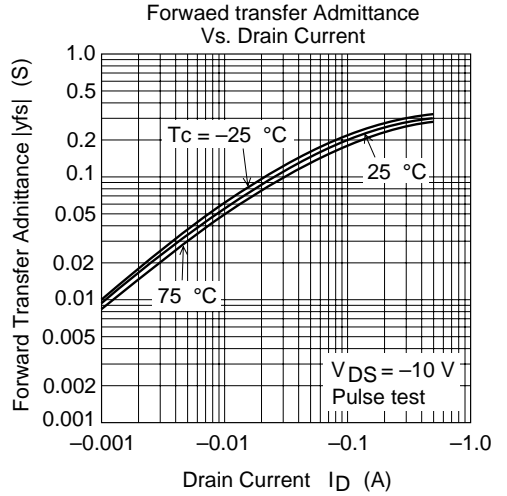
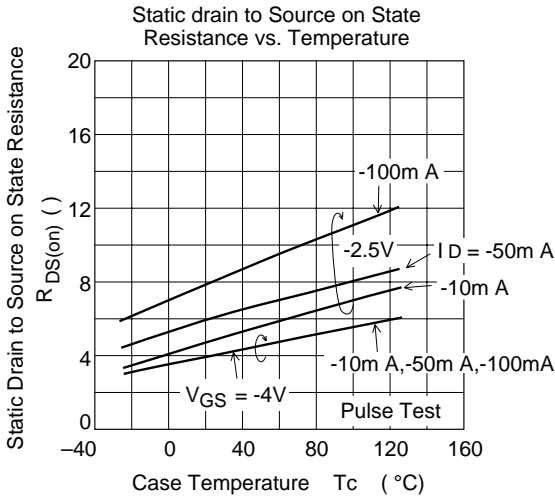
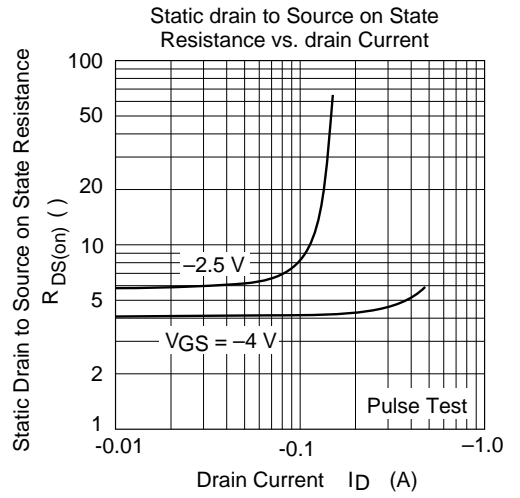
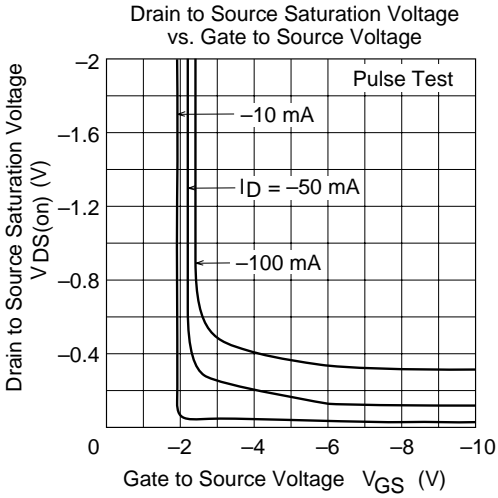
Value on the alumina ceramic board.(12.5x20x0.7mm)

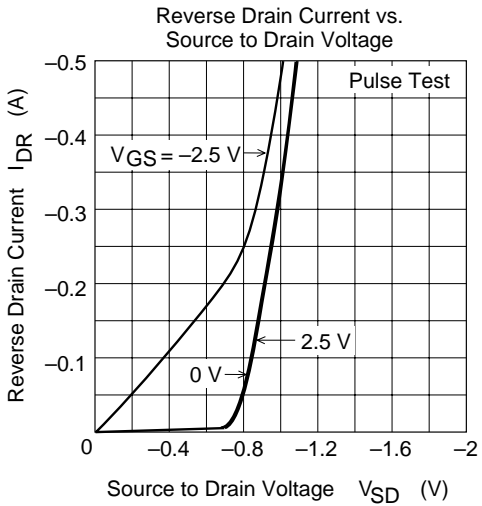
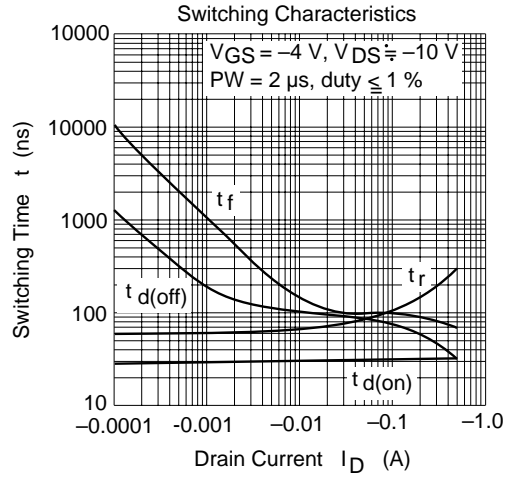
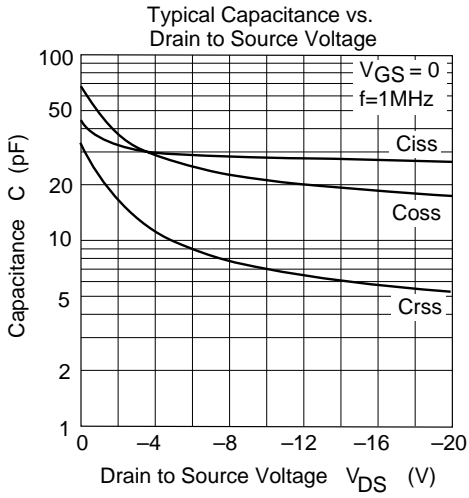
Typical Output Characteristics



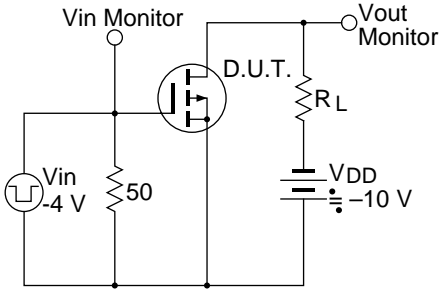
Typical Transfer Characteristics



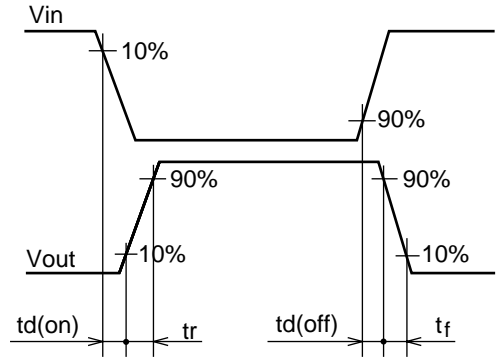




Switching Time Test Circuit

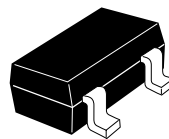
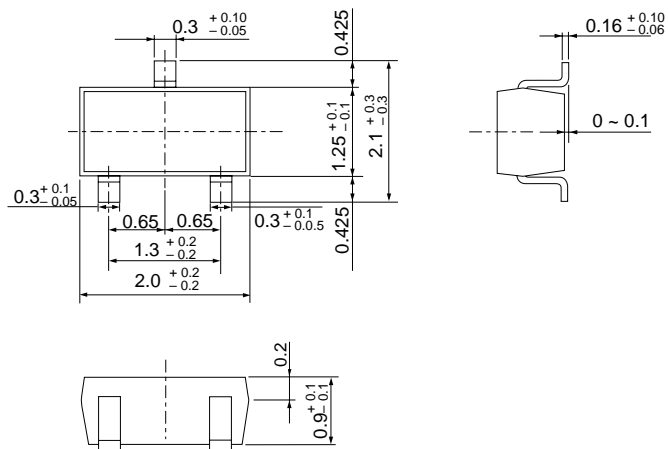


Waveforms



Package Dimensions

Unit: mm



Hitachi Code	CMPAK
EIAJ	SC-70
JEDEC	-

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