

# 2SJ486

Silicon P Channel MOS FET  
Low Frequency Power Switching

# HITACHI

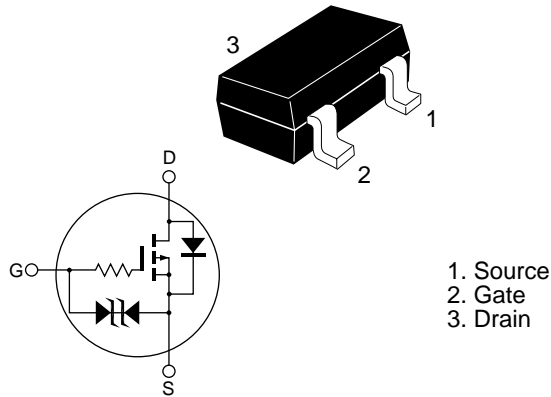
ADE-208-512A (Z)  
2nd. Edition  
Jul. 1997

## Features

- Low on-resistance  
 $R_{DS(on)} = 0.5 \Omega$  typ. (at  $V_{GS} = -4V$ ,  $I_D = -100$  mA)
- 2.5V gate drive devices.
- 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	$V_{GSS}$	±10	V
Drain current	$I_D$	-0.3	A
Drain peak current	$I_{D(pulse)}^{*1}$	-0.6	A
Channel dissipation	Pch	150	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

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

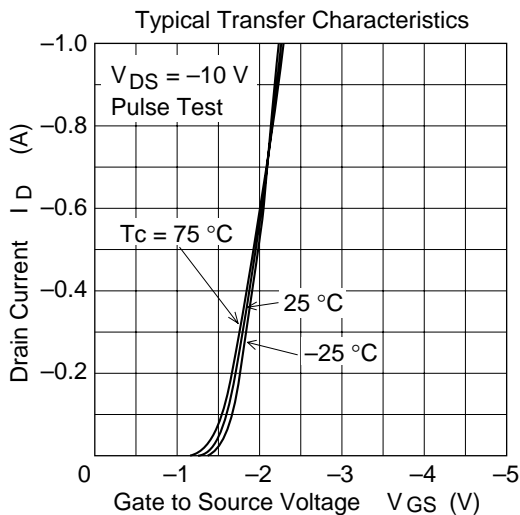
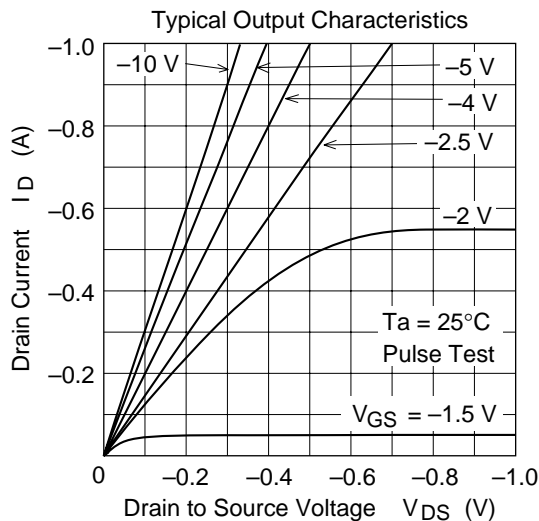
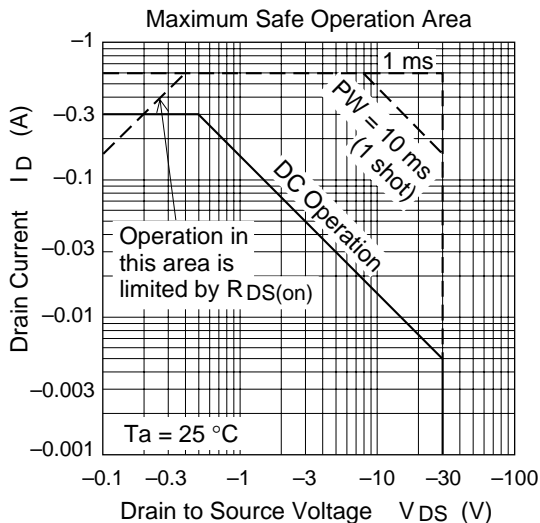
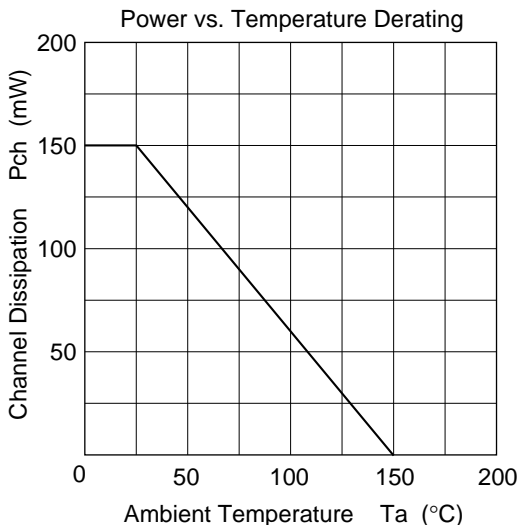
## Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10\mu A$ , $V_{GS} = 0$
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	$V_{DS} = -30 V$ , $V_{GS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	±5.0	μA	$V_{GS} = \pm 6.5V$ , $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-0.5	—	-1.5	V	$I_D = -10\mu A$ , $V_{DS} = -5V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.5	0.65	Ω	$I_D = -100mA$ $V_{GS} = -4V^{*1}$
	$R_{DS(on)}$	—	0.7	1.2	Ω	$I_D = -40mA$ $V_{GS} = -2.5V^{*1}$
Forward transfer admittance	$ y_{fs} $	0.4	0.65	—	S	$I_D = -100mA$ $V_{DS} = -10V^{*1}$
Input capacitance	$C_{iss}$	—	45	—	pF	$V_{DS} = -10V$
Output capacitance	$C_{oss}$	—	76	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	5.4	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	120	—	ns	$V_{GS} = -4V$
Rise time	$t_r$	—	340	—	ns	$I_D = -150mA$
Turn-off delay time	$t_{d(off)}$	—	850	—	ns	$R_L = 66.6\Omega$
Fall time	$t_f$	—	550	—	ns	

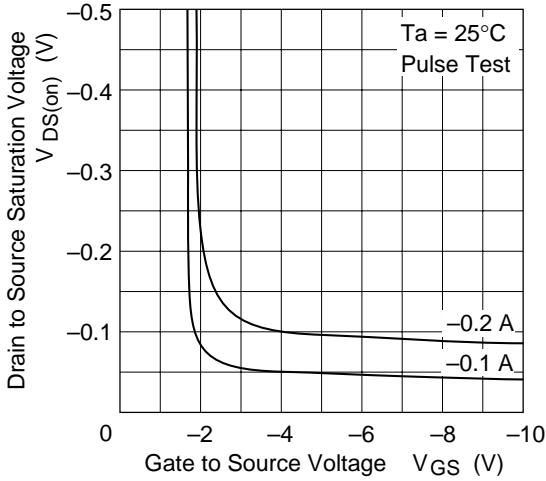
Notes: 1. Pulse test

2. Marking is "ZU-".

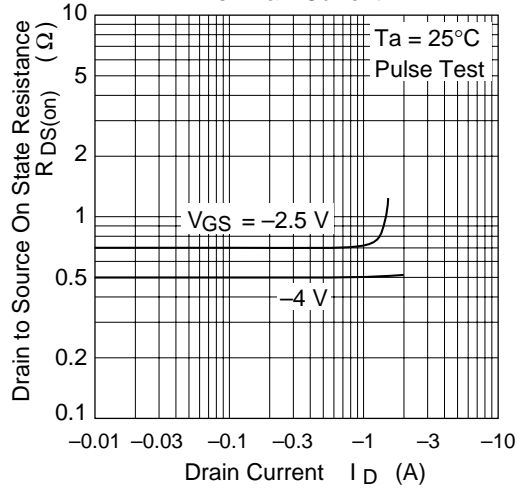
Main Characteristics



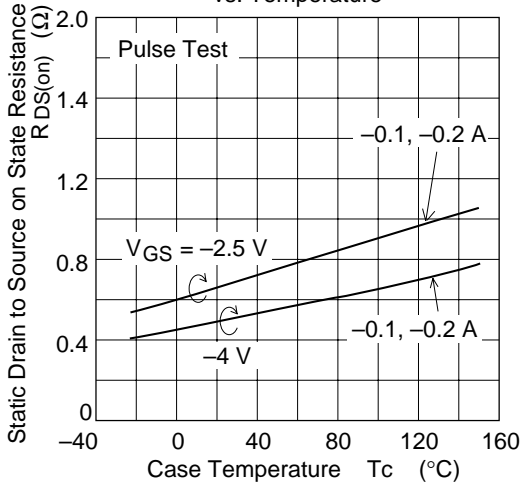
Drain to Source Saturation Voltage vs. Gate to Source Voltage



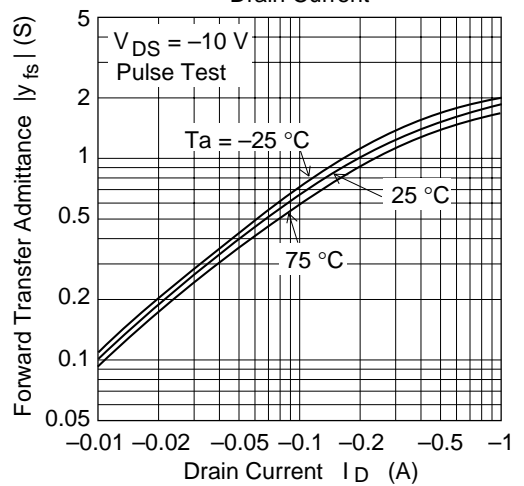
Static Drain to Source on State Resistance vs. Drain Current



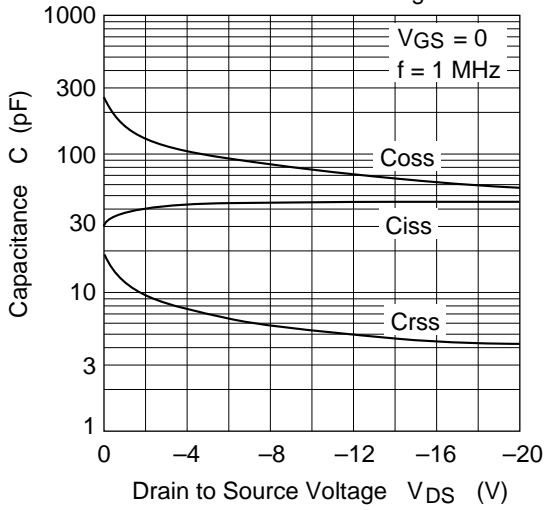
Static Drain to Source on State Resistance vs. Temperature



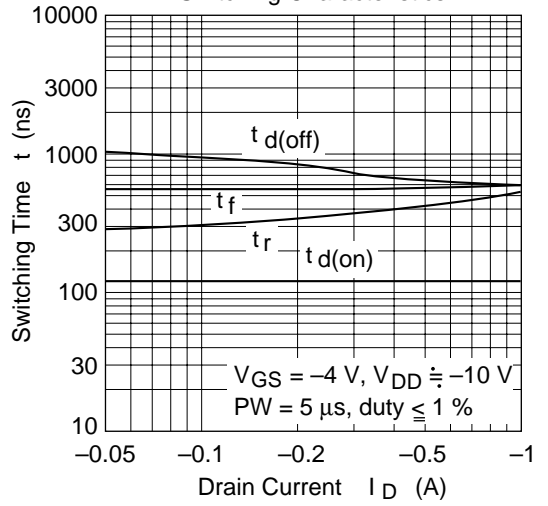
Forward Transfer Admittance vs. Drain Current



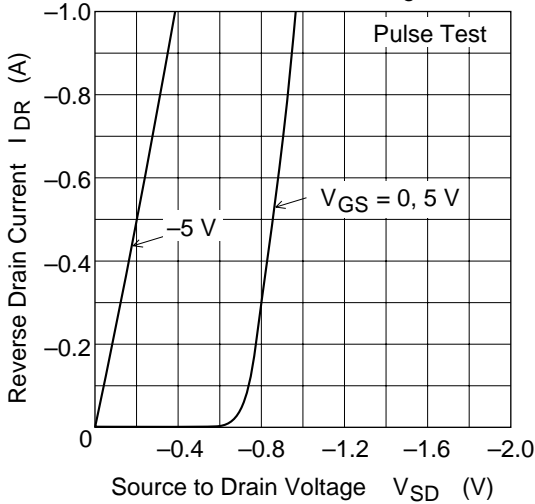
Typical Capacitance vs. Drain to Source Voltage



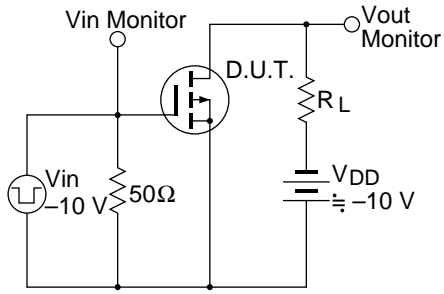
Switching Characteristics



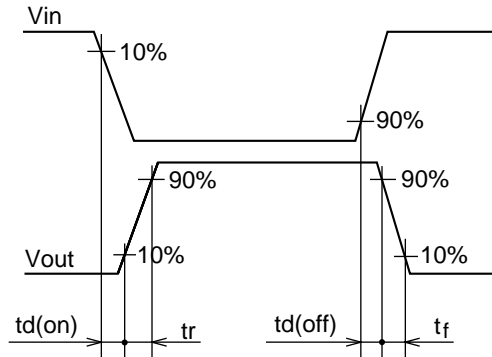
Reverse Drain Current vs. Source to Drain Voltage



Switching Time Test Circuit



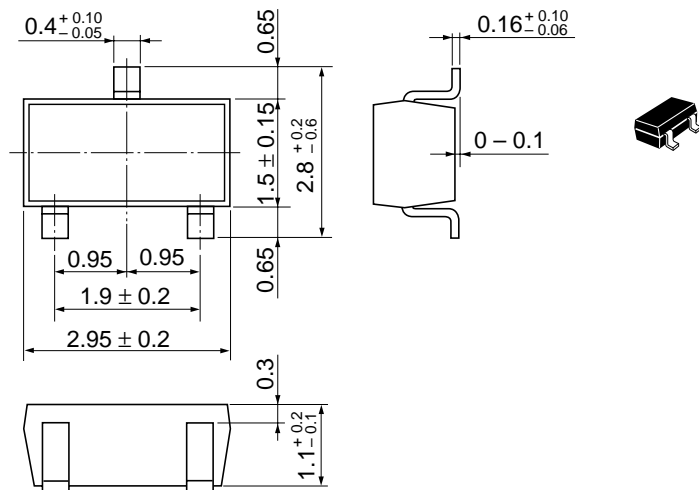
Waveform



## Package Dimensions

As of January, 2001

Unit: mm



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

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