2SK3290

Silicon N Channel MOS FET
High Speed Switching

HITACHI

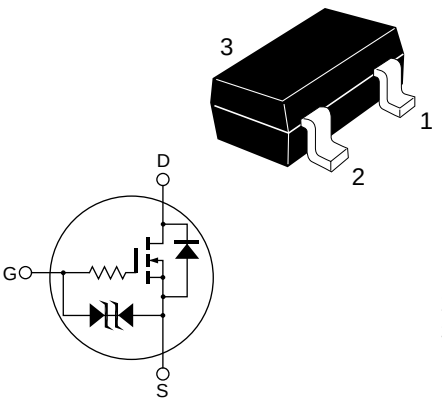
ADE-208-744 C (Z)
4th.Edition.
June 1999

Features

- Low on-resistance
  R_{DS} = 0.455 Ω typ. (V_{GS} = 10 V , I_D = 250 mA)
  R_{DS} = 0.9 Ω typ. (V_{GS} = 4 V , I_D = 100 mA)
- 4 V gate drive device.
- Small package (MPAK)

Outline

MPAK



1. Source
2. Gate
3. Drain

Hitachi semiconductor

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	500	mA
Drain peak current	$I_{D(pulse)}$ Note1	2	A
Body-drain diode reverse drain current	I_{DR}	500	mA
Channel dissipation	Pch Note 2	400	mW
Channel temperature	Tch	150	°C
Storage temperature	Tstg	–55 to +150	°C

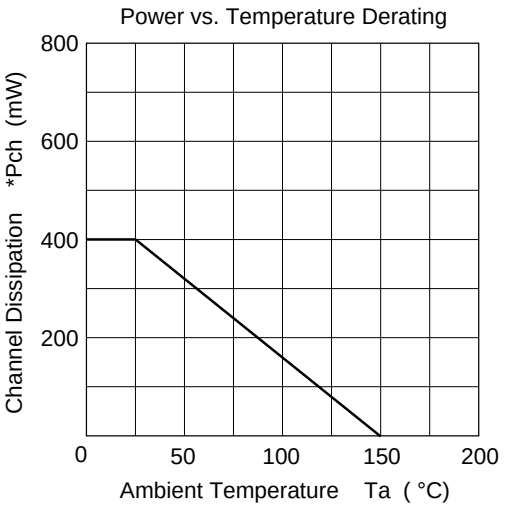
Note: 1. PW ≤ 10 µs, duty cycle ≤ 1%
2. Value on the alumina ceramic board (12.5x20x0.7mm)

Electrical Characteristics (Ta = 25°C)

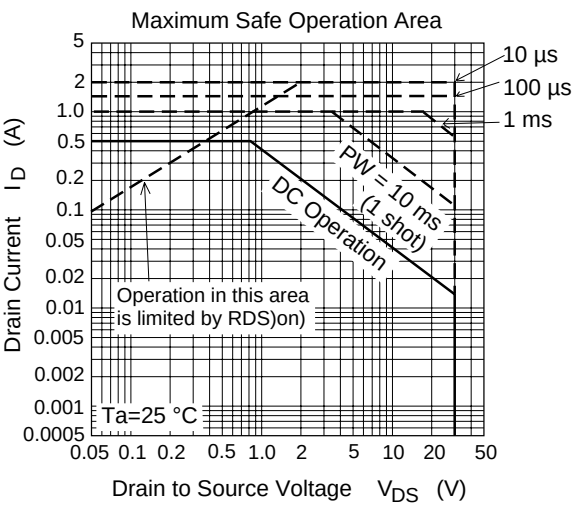
Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	30	—	—	V	I_D = 100 µA, V_{GS} = 0
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	I_G = ±100 µA, V_{DS} = 0
Gate to source leak current	I_{GSS}	—	—	±5	µA	V_{GS} = ±16 V, V_{DS} = 0
Zero gate voltege 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 = 10µA, V_{DS} = 5 V
Static drain to source on state resistance	$R_{DS(on)}$	—	0.455	0.525	Ω	I_D = 250 mA,V_{GS} = 10 V Note 3
	$R_{DS(on)}$	—	0.9	1.25	Ω	I_D = 100 mA,V_{GS} = 4 V Note 3
Forward transfer admittance	$\|y_{fs}\|$	350	540	—	mS	I_D = 250 mA, V_{DS} = 10 V Note 3
Input capacitance	Ciss	—	5	—	pF	V_{DS} = 10 V
Output capacitance	Coss	—	30	—	pF	V_{GS} = 0
Reverse transfer capacitance	Crss	—	2	—	pF	f = 1 MHz
Turn-on delay time	$t_{d(on)}$	—	240	—	ns	I_D = 250 mA, V_{GS} = 10 V
Rise time	t_r	—	1700	—	ns	R_L = 40Ω
Turn-off delay time	$t_{d(off)}$	—	850	—	ns	
Fall time	t_f	—	1300	—	ns	

Note: 3. Pulse test
4. Marking is BN

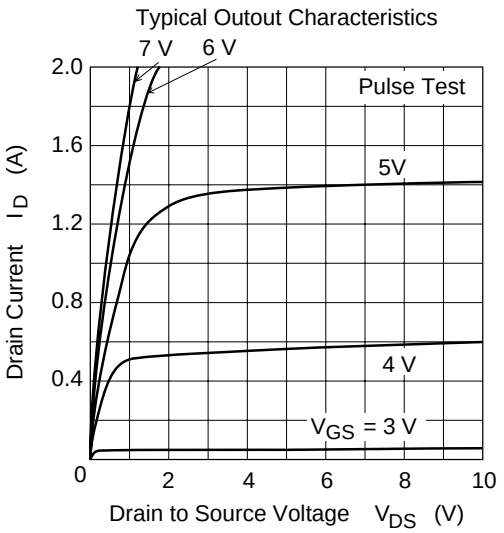
Main Characteristics

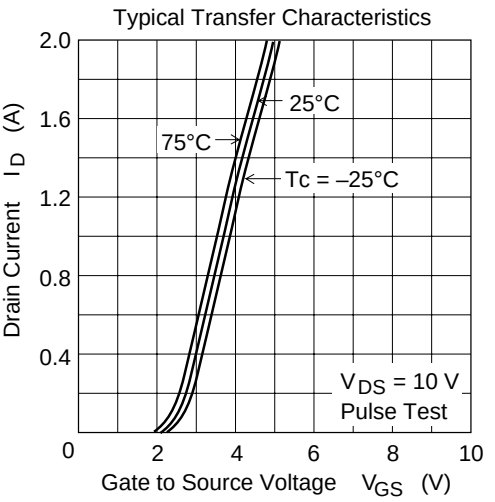


*Value on the alumina ceramic boad (12.5x20x0.7mm)

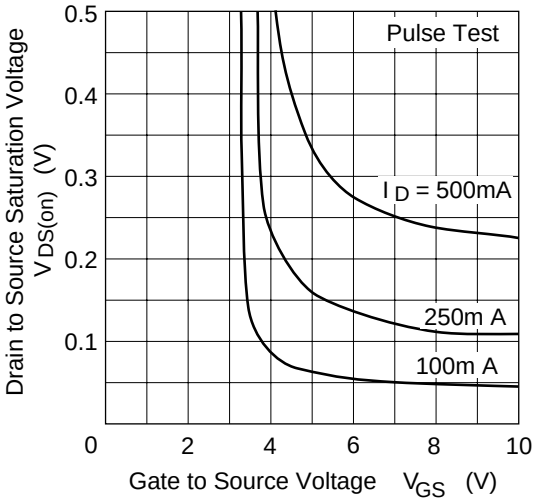


Value on the alumina ceramic boad.(12.5x20x0.7mm)

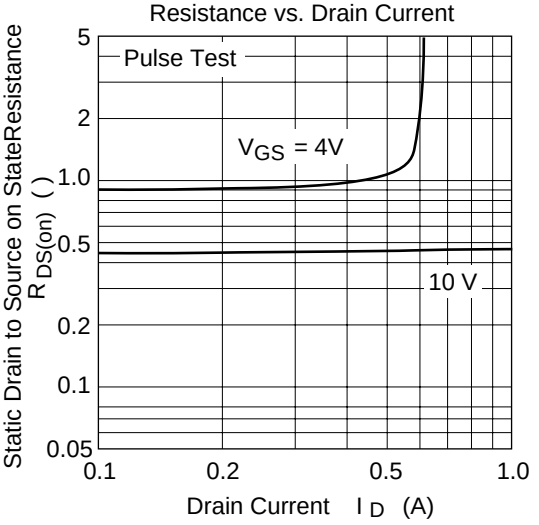




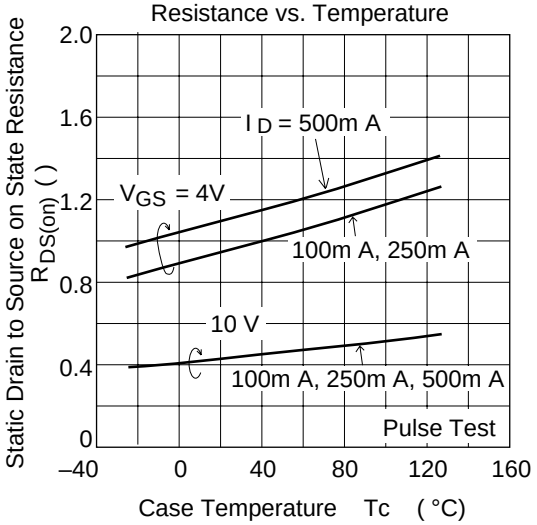
Drain to Source Saturation Voltage vs. Gate to Source Voltage



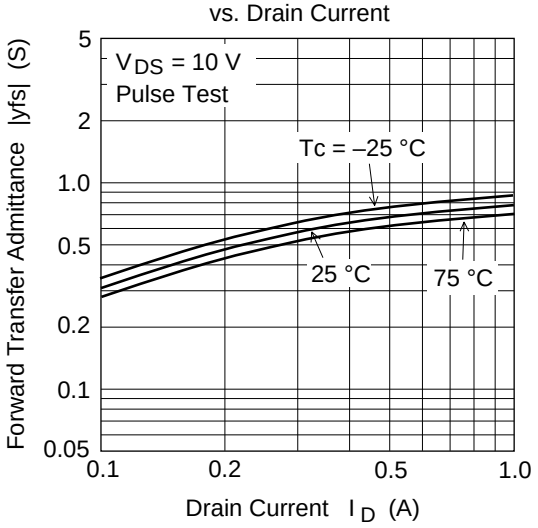
Static Drain to Source on State Resistance vs. Drain Current



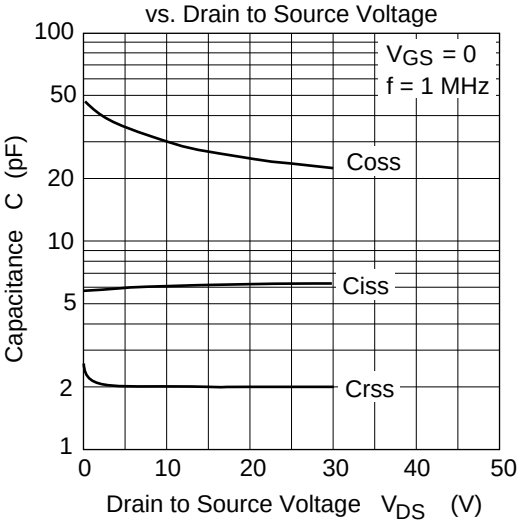
Static Drain to Source on State Resistance vs. Temperature



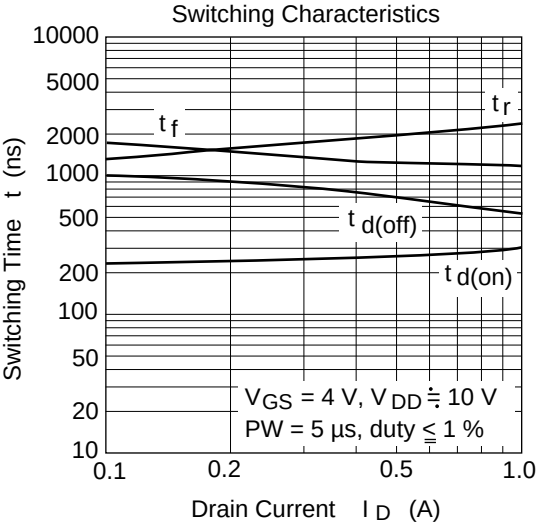
Forward Transfer Admittance vs. Drain Current



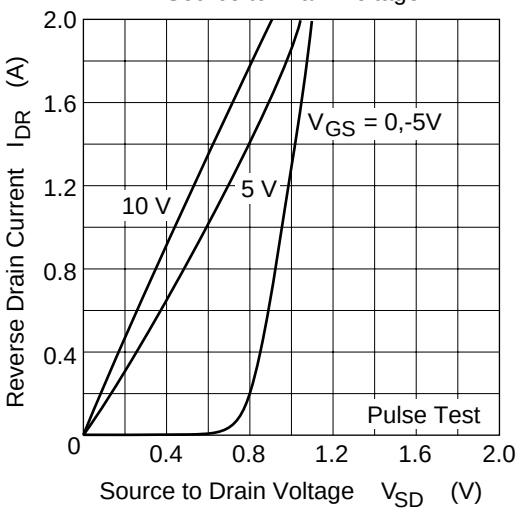
Typical Capacitance
vs. Drain to Source Voltage



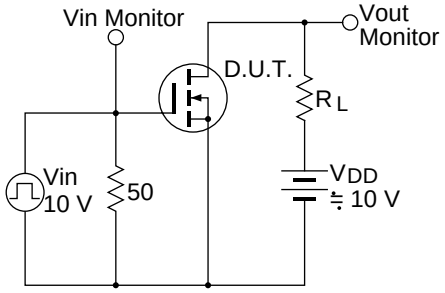
Switching Characteristics



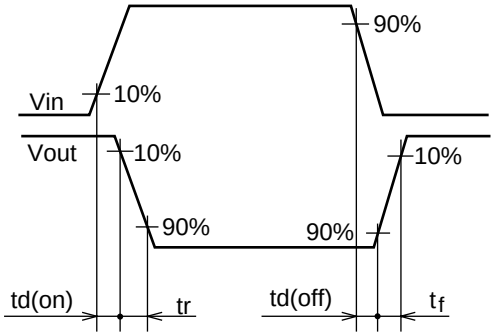
Reverse Drain Current vs.
Source to Drain Voltage



Switching Time Test Circuit

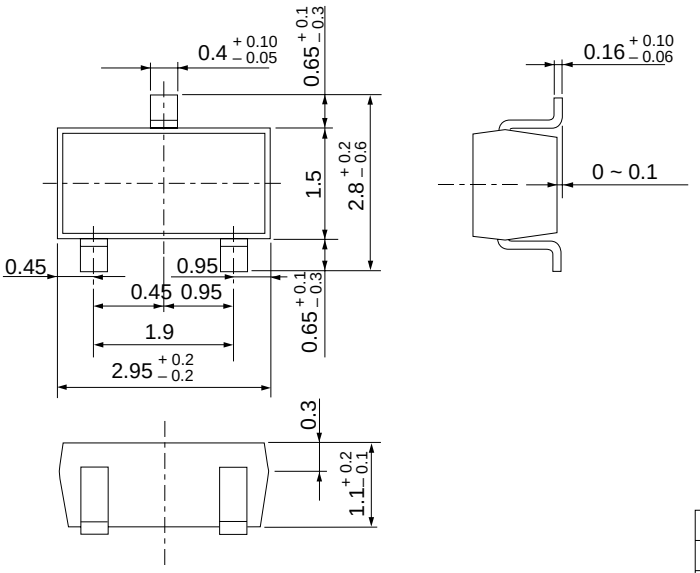


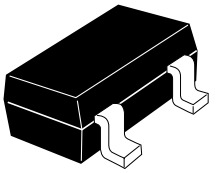
Waveforms



Package Dimensions

Unit: mm





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

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