
2SJ386

Silicon P-Channel MOS FET

HITACHI

Application

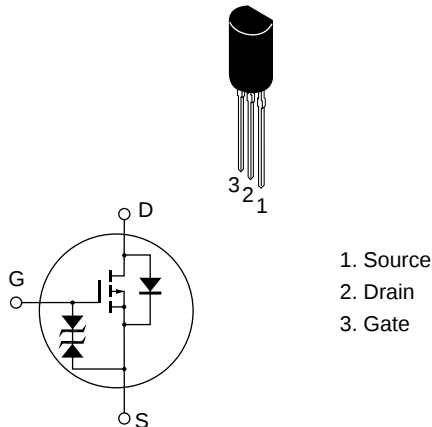
High speed power switching

Features

- Low on-resistance
- High speed switching
- Low drive current
- 4 V gate drive device can be driven from 5 V source
- Suitable for Switching regulator, DC - DC converter

Outline

TO-92 Mod



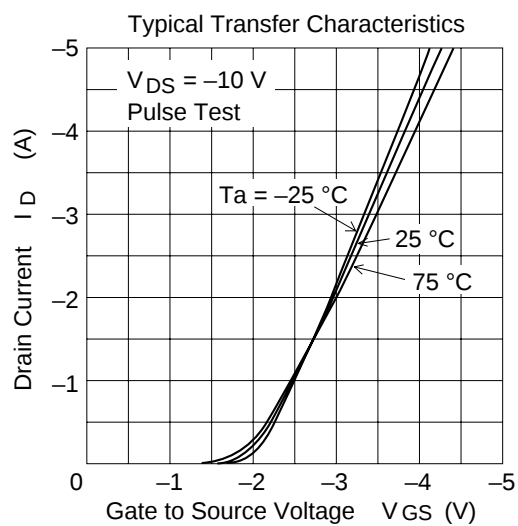
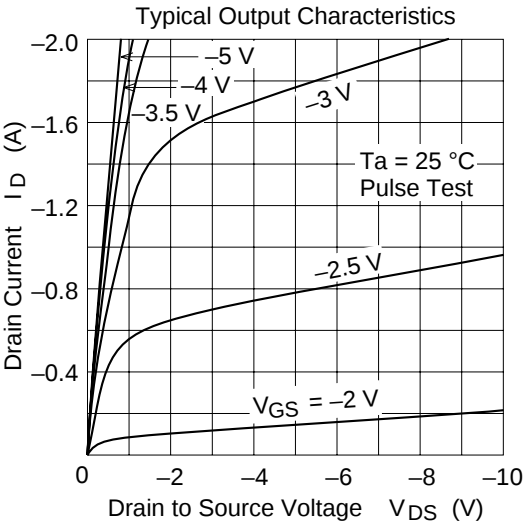
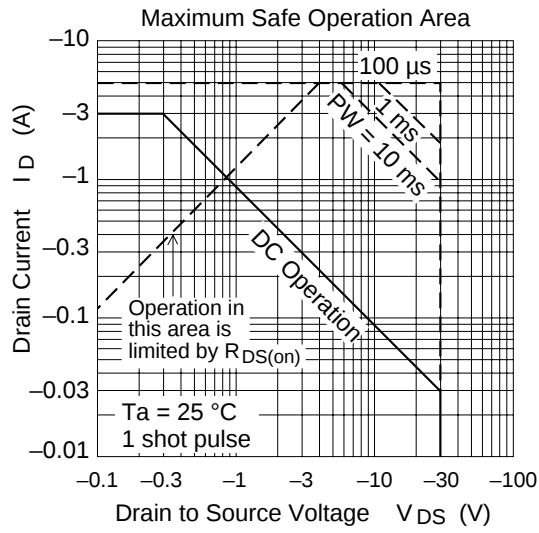
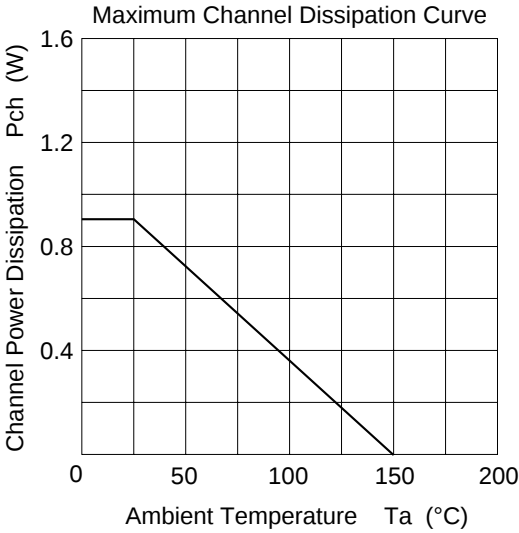
Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	-30	V
Gate to source voltage	V_{GSS}	± 20	V
Drain current	I_D	-3	A
Drain peak current	$I_{D(pulse)}^{*1}$	-5	A
Body to drain diode reverse drain current	I_{DR}	-3	A
Channel dissipation	Pch	0.9	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

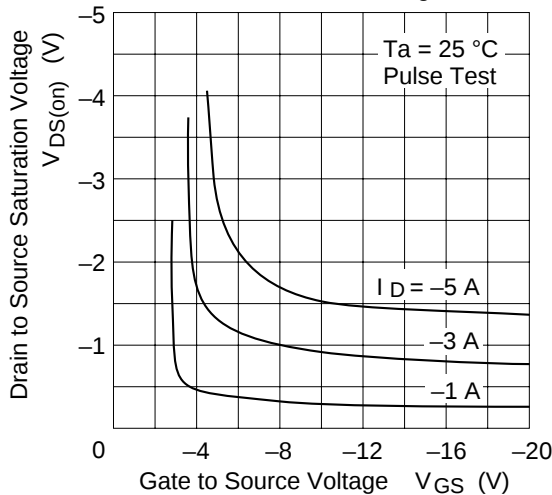
Note: 1. $PW \leq 10 \mu s$, duty cycle $\leq 1 \%$

Electrical Characteristics (Ta = 25°C)

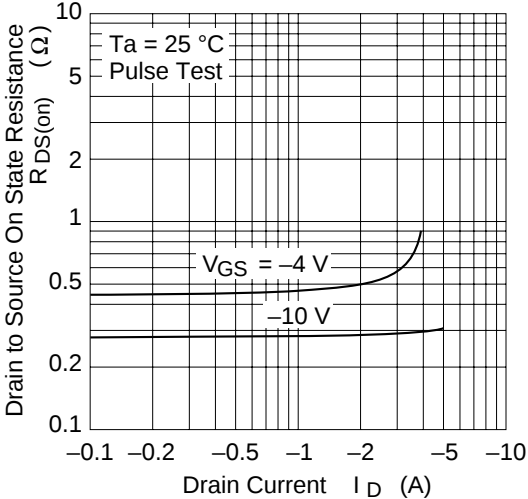
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10 \text{ mA}$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \mu A$, $V_{DS} = 0$
Gate to source leak current	I_{GSS}	—	—	± 10	μA	$V_{GS} = \pm 16 \text{ V}$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	-10	μA	$V_{DS} = -24 \text{ V}$, $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.5	V	$I_D = -1 \text{ mA}$, $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.3	0.4	Ω	$I_D = -2 \text{ A}$ $V_{GS} = -10 \text{ V}^{*1}$
		—	0.55	0.8	Ω	$I_D = -2 \text{ A}$ $V_{GS} = -4 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	1.0	1.7	—	S	$I_D = -1 \text{ A}$ $V_{DS} = -10 \text{ V}^{*1}$
Input capacitance	Ciss	—	177	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	Coss	—	120	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	Crss	—	59	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	8	—	ns	$I_D = -2 \text{ A}$
Rise time	t_r	—	28	—	ns	$V_{GS} = -10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	45	—	ns	$R_L = 15 \Omega$
Fall time	t_f	—	60	—	ns	



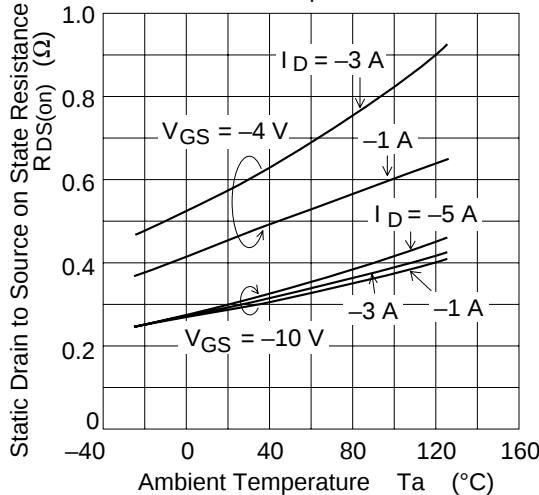
Drain to Source Saturation Voltage vs.
Gate to Source Voltage



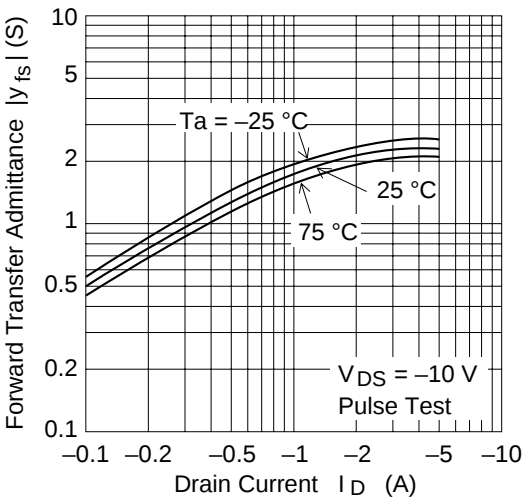
Static Drain to Source on State Resistance
vs. Drain Current



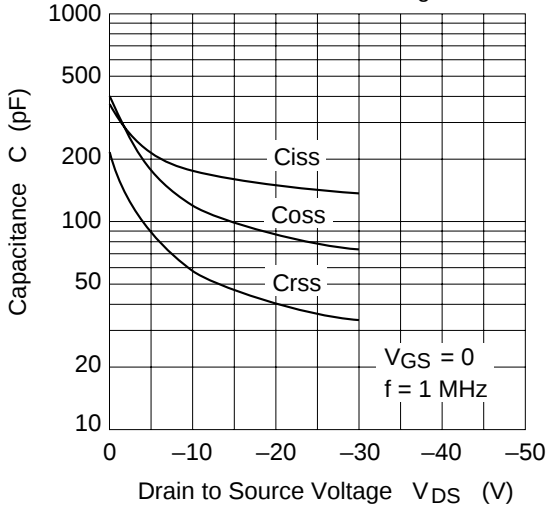
Static Drain to Source on State Resistance
vs. Temperature



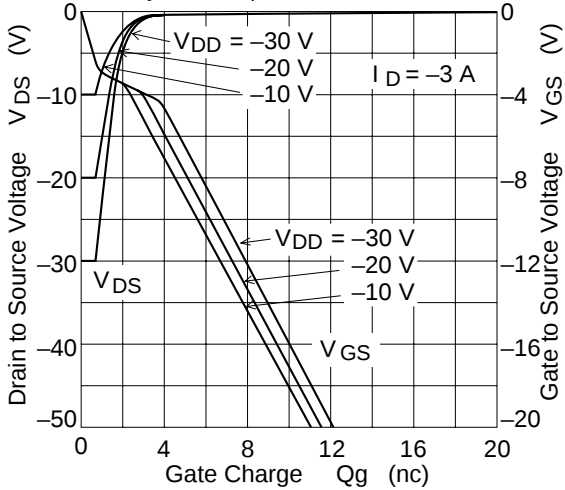
Forward Transfer Admittance vs.
Drain Current



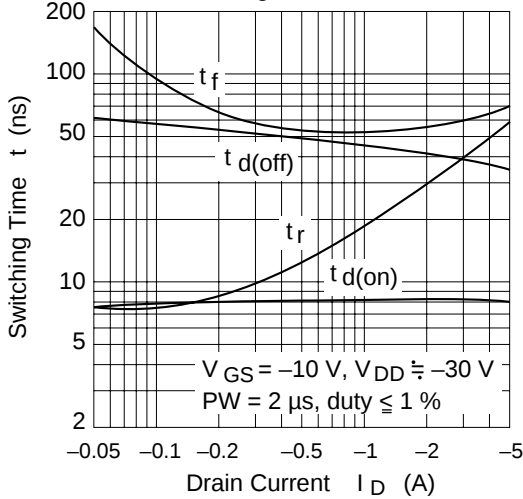
Typical Capacitance vs.
Drain to Source Voltage



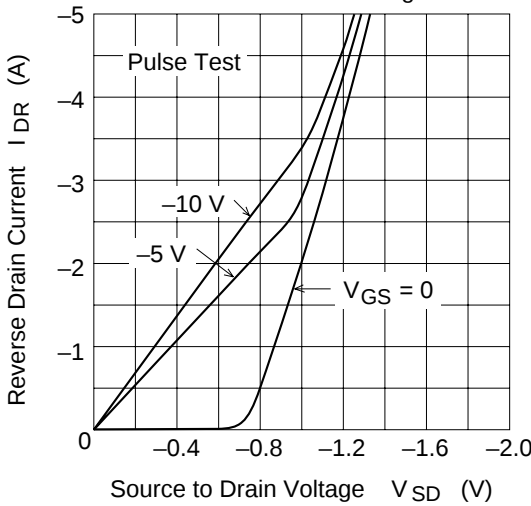
Dynamic Input Characteristics

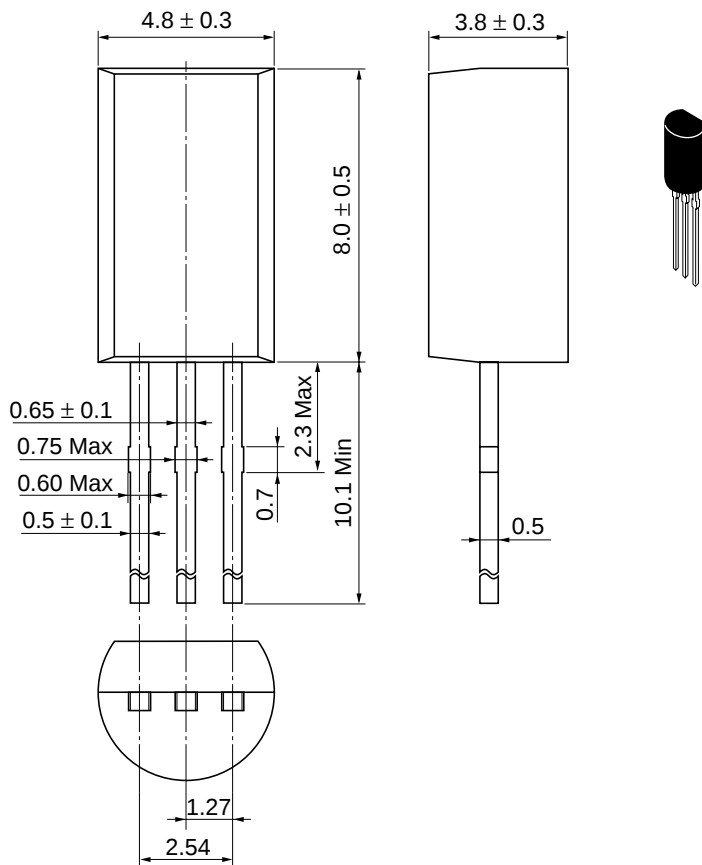


Switching Characteristics



Reverse Drain Current vs.
Source to Drain Voltage





Hitachi Code	TO-92 Mod
JEDEC	—
EIAJ	Conforms
Weight (reference value)	0.35 g

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HITACHI

Hitachi, Ltd.

Semiconductor & Integrated Circuits.
Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
Tel: Tokyo (03) 3270-2111 Fax: (03) 3270-5109

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For further information write to:

Hitachi Semiconductor (America) Inc. 179 East Tasman Drive, San Jose, CA 95134 Tel: <1> (408) 433-1990 Fax: <1> (408) 433-0223	Hitachi Europe GmbH Electronic components Group Dornacher Straße 3 D-85622 Feldkirchen, Munich Germany Tel: <49> (89) 9 9180-0 Fax: <49> (89) 9 29 30 00 Hitachi Europe Ltd. Electronic Components Group. Whitebrook Park Lower Cookham Road Maidenhead Berkshire SL6 8YA, United Kingdom Tel: <44> (1628) 585000 Fax: <44> (1628) 778322
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Hitachi Asia Pte. Ltd.
16 Collyer Quay #20-00
Hitachi Tower
Singapore 049318
Tel: 535-2100
Fax: 535-1533

Hitachi Asia Ltd.
Taipei Branch Office
3F, Hung Kuo Building, No.167,
Tun-Hwa North Road, Taipei (105)
Tel: <886> (2) 2718-3666
Fax: <886> (2) 2718-8180

Hitachi Asia (Hong Kong) Ltd.
Group III (Electronic Components)
7/F., North Tower, World Finance Centre,
Harbour City, Canton Road, Tsim Sha Tsui,
Kowloon, Hong Kong
Tel: <852> (2) 735 9218
Fax: <852> (2) 730 0281
Telex: 40815 HITEC HX

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