

2SJ526

Silicon P Channel MOS FET
High Speed Power Switching

HITACHI

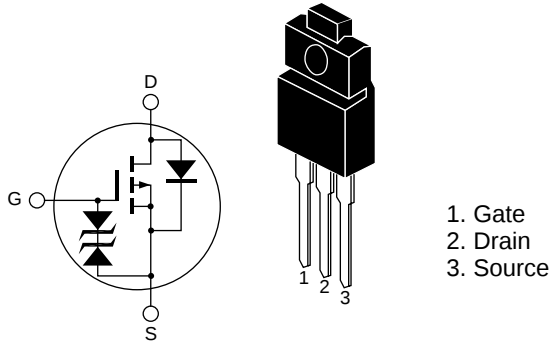
ADE-208-579B (Z)
4th. Edition
Jun 1998

Features

- Low on-resistance
 $R_{DS(on)} = 0.11 \Omega$ typ.
- Low drive current
- 4 V gate drive devices
- High speed switching

Outline

TO-220FM



Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V_{DSS}	−60	V
Gate to source voltage	V_{GSS}	±20	V
Drain current	I_D	−12	A
Drain peak current	$I_{D(pulse)}$ ^{Note1}	−48	A
Body-drain diode reverse drain current	I_{DR}	−12	A
Avalanche current	I_{AP} ^{Note3}	−12	A
Avalanche energy	E_{AR} ^{Note3}	12	mJ
Channel dissipation	P_{ch} ^{Note2}	25	W
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

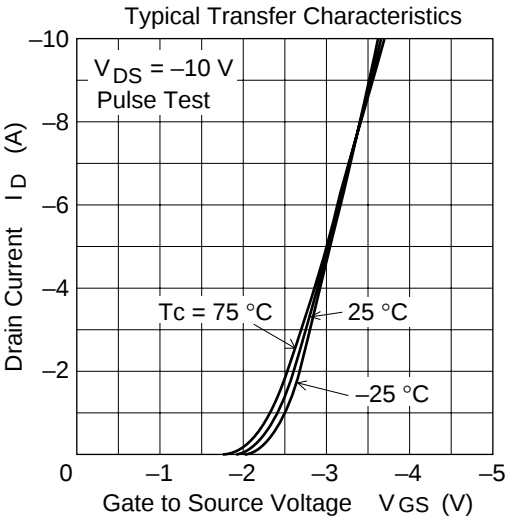
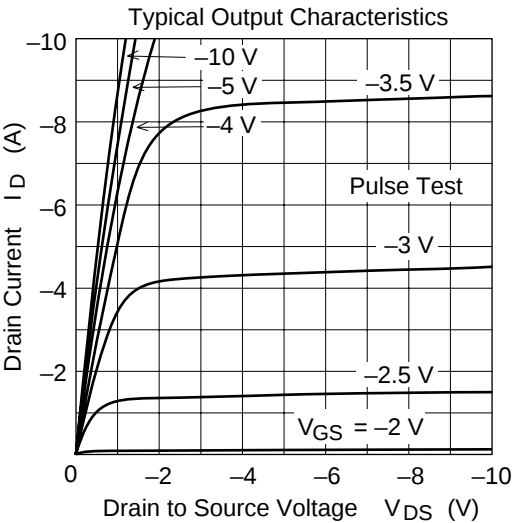
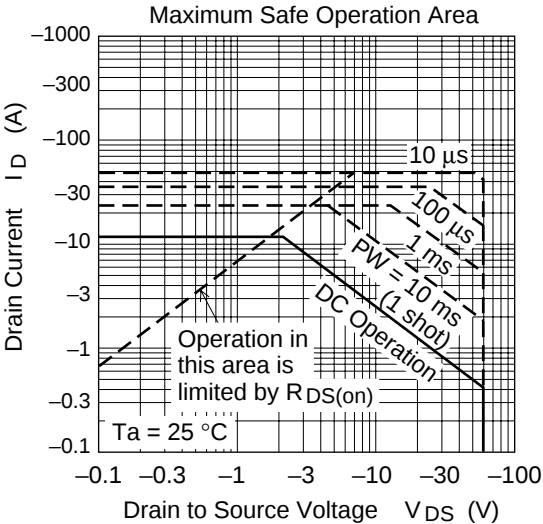
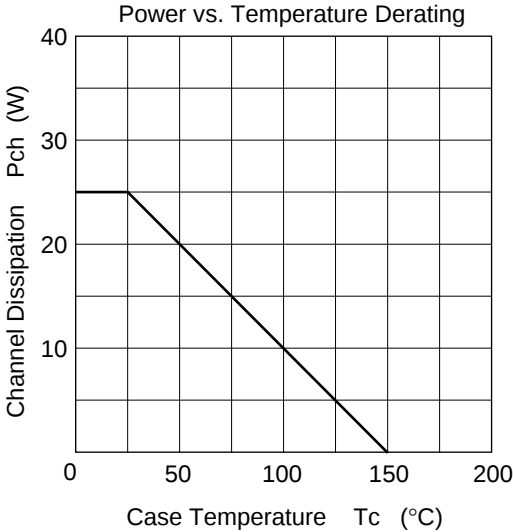
Note: 1. $PW \leq 10\mu s$, duty cycle $\leq 1\%$
2. Value at $T_c = 25^\circ C$
3. Value at $T_{ch} = 25^\circ C$, $R_g \geq 50\ \Omega$

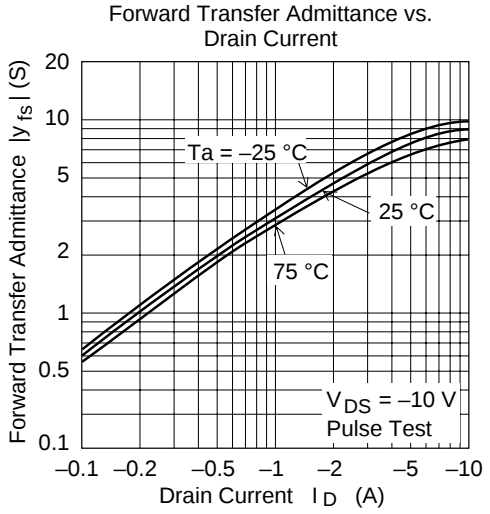
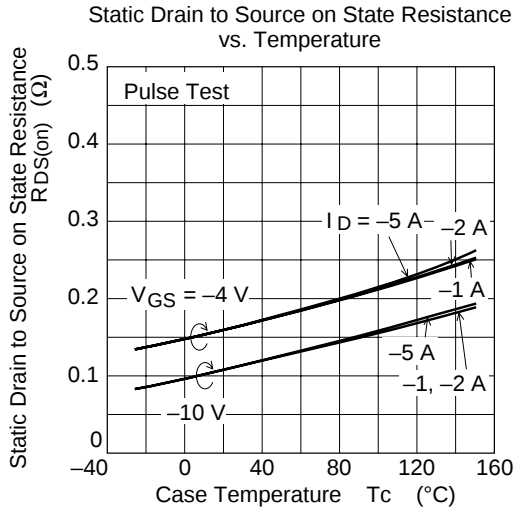
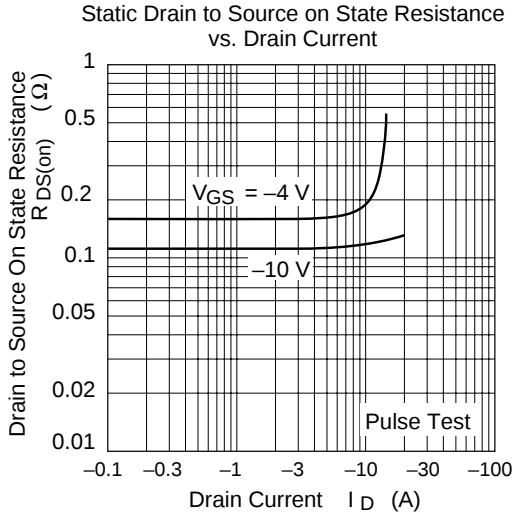
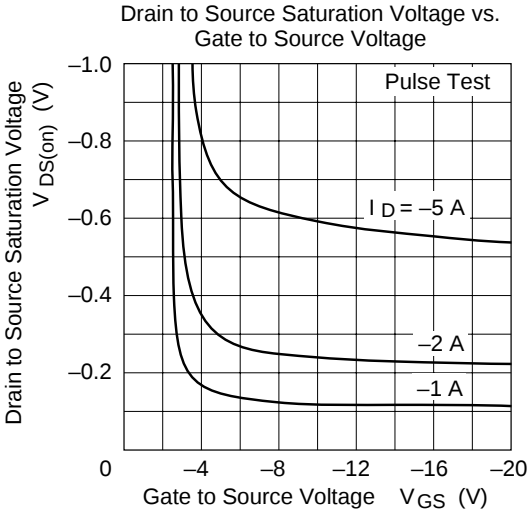
Electrical Characteristics (Ta = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test Conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	−60	—	—	V	$I_D = -10mA$, $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	—	—	V	$I_G = \pm 100\mu A$, $V_{DS} = 0$
Zero gate voltage drain current	I_{DSS}	—	—	−10	μA	$V_{DS} = -60V$, $V_{GS} = 0$
Gate to source leak current	I_{GSS}	—	—	±10	μA	$V_{GS} = \pm 16V$, $V_{DS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	−1.0	—	−2.0	V	$I_D = -1mA$, $V_{DS} = -10V$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.11	0.15	Ω	$I_D = -6A$, $V_{GS} = -10V$ ^{Note4}
	$R_{DS(on)}$	—	0.16	0.23	Ω	$I_D = -6A$, $V_{GS} = -4V$ ^{Note4}
Forward transfer admittance	$ y_{fs} $	5	8	—	S	$I_D = -6A$, $V_{DS} = -10V$ ^{Note4}
Input capacitance	C_{iss}	—	580	—	pF	$V_{DS} = -10V$
Output capacitance	C_{oss}	—	300	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	C_{rss}	—	85	—	pF	$f = 1MHz$
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{GS} = -10V$, $I_D = -6A$
Rise time	t_r	—	55	—	ns	$R_L = 6\Omega$
Turn-off delay time	$t_{d(off)}$	—	85	—	ns	
Fall time	t_f	—	60	—	ns	
Body–drain diode forward voltage	V_{DF}	—	−1.2	—	V	$I_F = -12A$, $V_{GS} = 0$
Body–drain diode reverse recovery time	t_{rr}	—	60	—	ns	$I_F = -12A$, $V_{GS} = 0$ $diF/dt = 50A/\mu s$

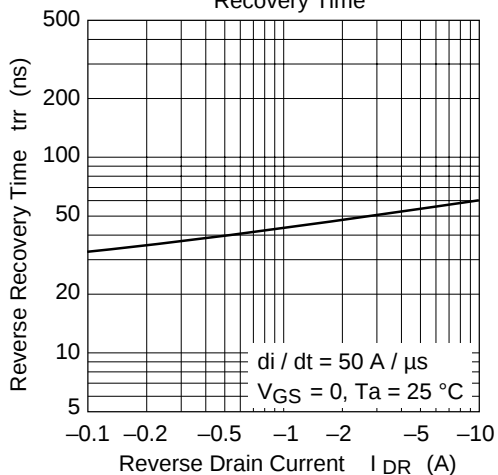
Note: 4. Pulse test

Main Characteristics

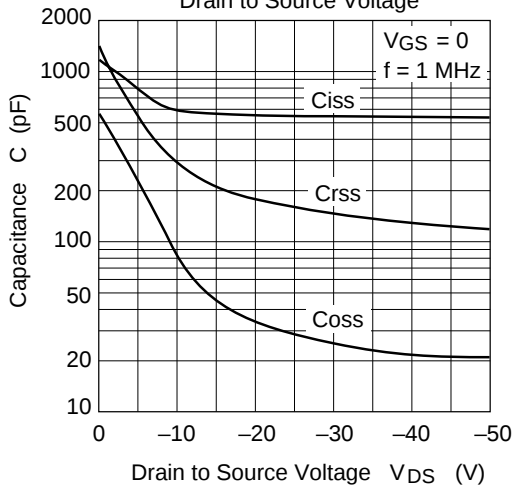




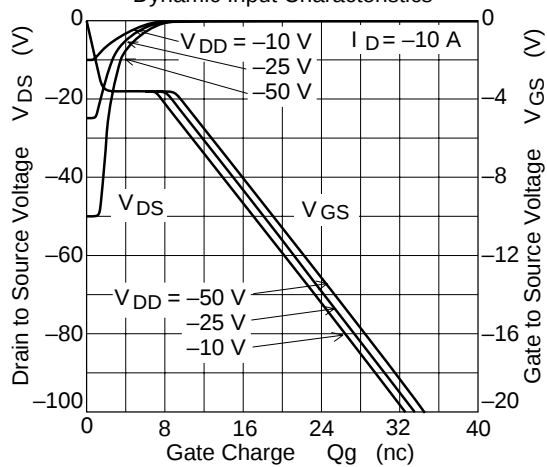
Body-Drain Diode Reverse Recovery Time



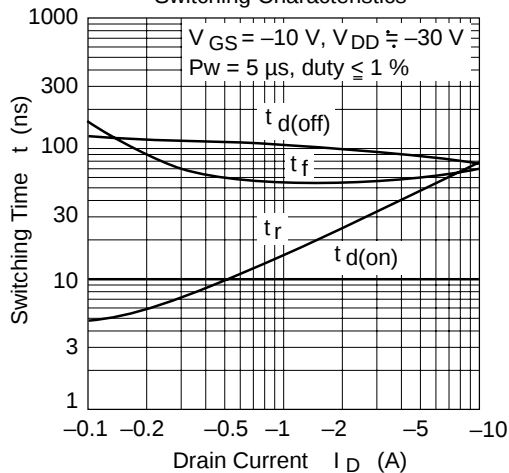
Typical Capacitance vs. Drain to Source Voltage

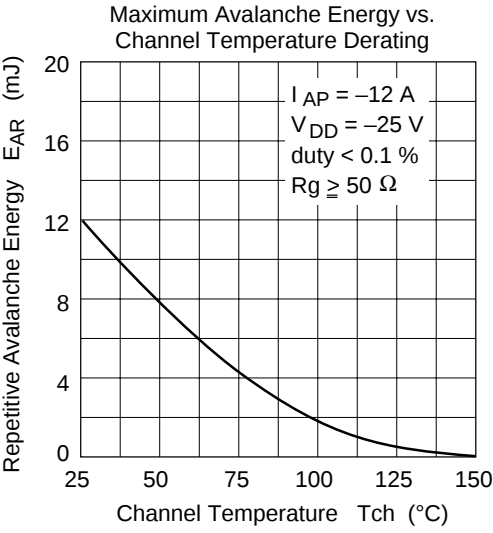
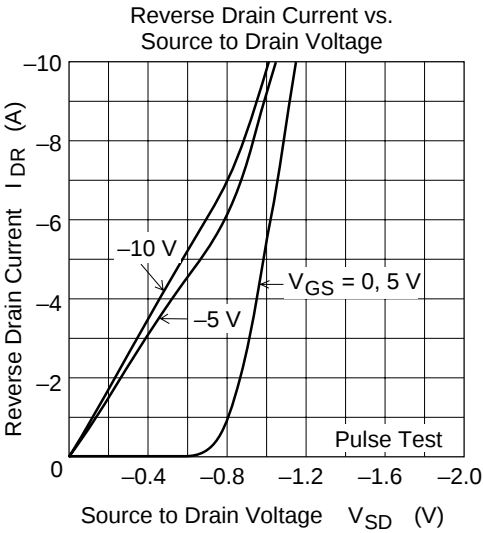


Dynamic Input Characteristics

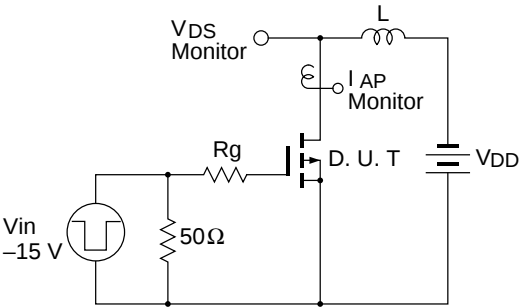


Switching Characteristics

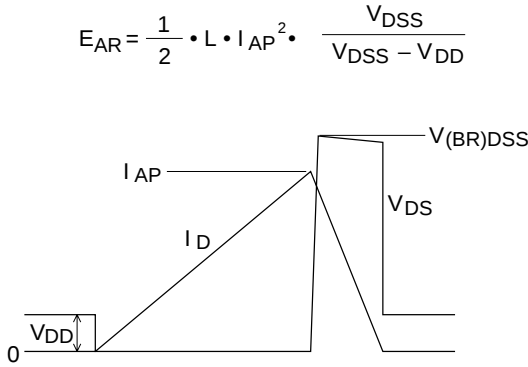


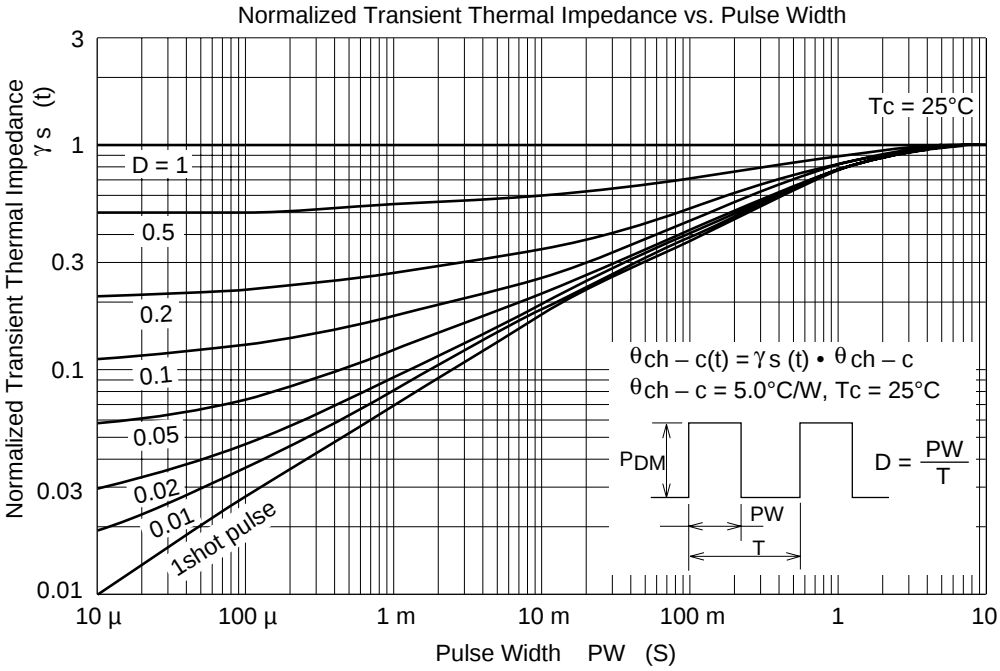


Avalanche Test Circuit

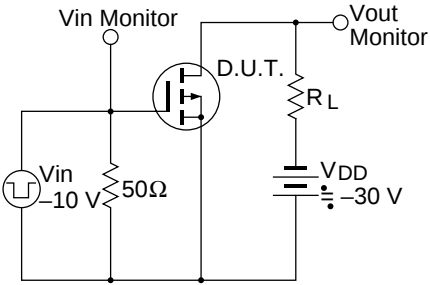


Avalanche Waveform

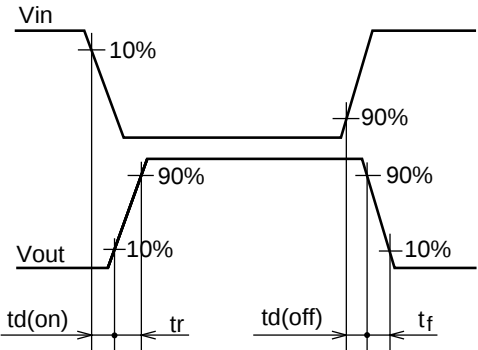




Switching Time Test Circuit

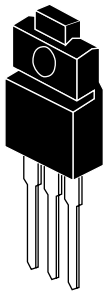
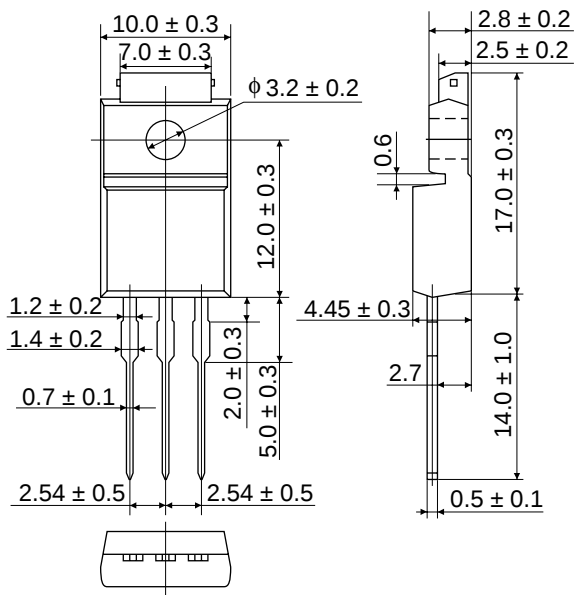


Waveform



Package Dimensions

Unit: mm



Hitachi Code	TO-220FM
EIAJ	SC-72
JEDEC	—

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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
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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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