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# 2SJ410

Silicon P-Channel MOS FET

# HITACHI

ADE-208-539  
1st. Edition

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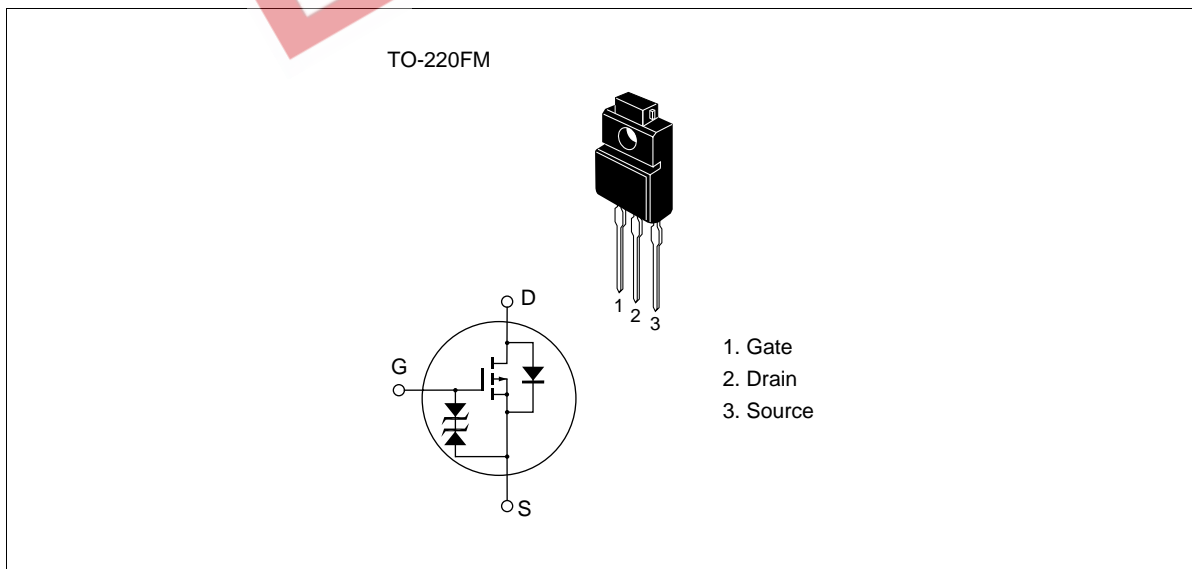
## Application

High speed power switching

## Features

- Low on-resistance
- High speed switching
- Low drive current
- No secondary breakdown
- Suitable for switching regulator and DC-DC converter and motor driver

## Outline



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## 2SJ410

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### Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V <sub>DSS</sub>	-200	V
Gate to source voltage	V <sub>GSS</sub>	±20	V
Drain current	I <sub>D</sub>	-6	A
Drain peak current	I <sub>D(pulse)</sub> <sup>*1</sup>	-24	A
Body to drain diode reverse drain current	I <sub>DR</sub>	-6	A
Channel dissipation	Pch <sup>*2</sup>	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes: 1. PW ≤ 10 μs, duty cycle ≤ 1%

2. Value at Tc = 25°C

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## Electrical Characteristics (Ta = 25°C)

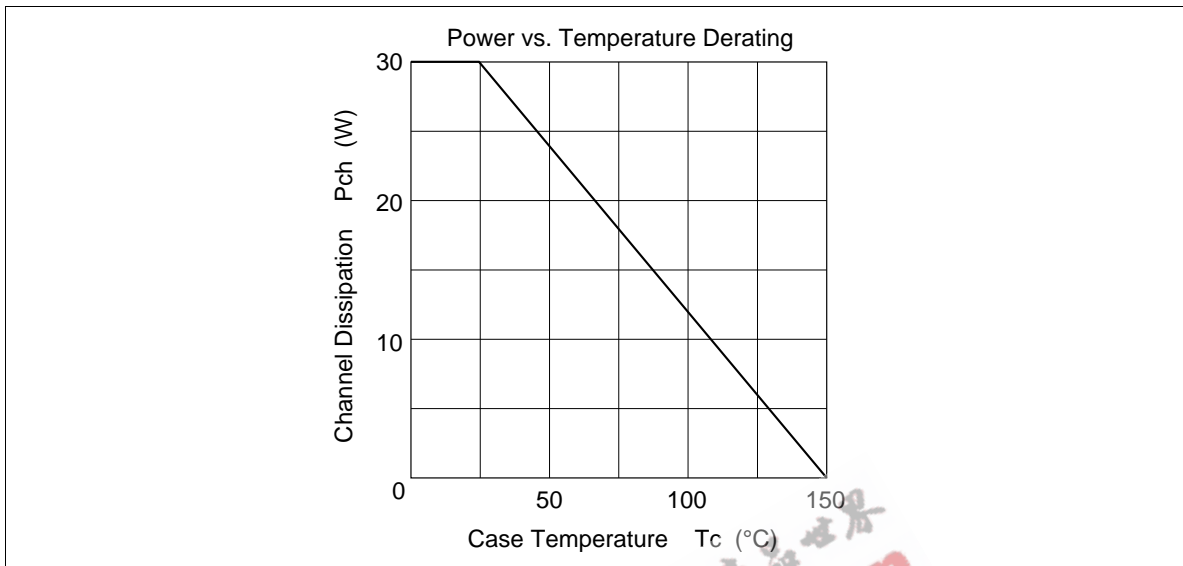
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-200	—	—	V	$I_D = -10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 20$	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 16 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-250	$\mu\text{A}$	$V_{DS} = -160 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-2.0	—	-4.0	V	$I_D = -1 \text{ mA}$ , $V_{DS} = -10 \text{ V}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.7	0.85	$\Omega$	$I_D = -3 \text{ A}$ $V_{GS} = -10 \text{ V}^{*1}$
Forward transfer admittance	$ y_{fs} $	2.0	3.2	—	S	$I_D = -3 \text{ A}$ $V_{DS} = -10 \text{ V}^{*1}$
Input capacitance	$C_{iss}$	—	900	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	$C_{oss}$	—	280	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	65	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	18	—	ns	$I_D = -3 \text{ A}$
Rise time	$t_r$	—	50	—	ns	$V_{GS} = -10 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	90	—	ns	$R_L = 6\Omega$
Fall time	$t_f$	—	40	—	ns	
Body to drain diode forward voltage	$V_{DF}$	—	-1.0	—	V	$I_F = -6 \text{ A}$ , $V_{GS} = 0$
Body to drain diode reverse recovery time	$t_{rr}$	—	220	—	ns	$I_F = -6 \text{ A}$ , $V_{GS} = 0$ , $diF/dt = 50 \text{ A}/\mu\text{s}$

Note: 1. Pulse Test

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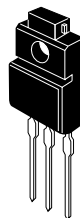
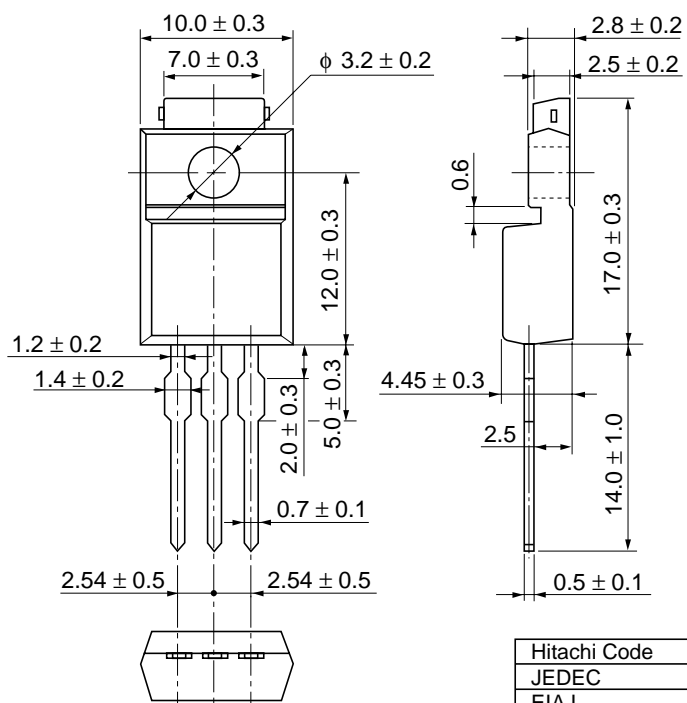
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Unit: mm



Hitachi Code	TO-220FM
JEDEC	—
EIAJ	Conforms
Weight (reference value)	1.8 g

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