
2SJ410

Silicon P-Channel MOS FET

HITACHI

ADE-208-539 (Z)
1st. Edition
Sep. 1997

Application

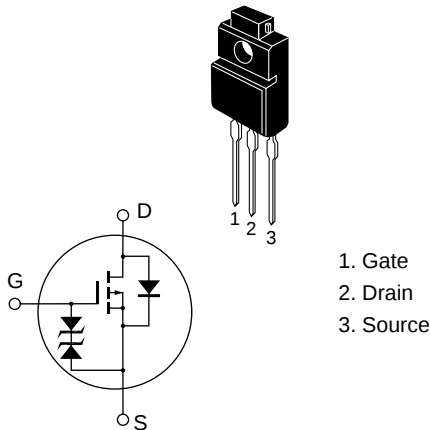
High speed power switching

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

TO-220FM



Absolute Maximum Ratings (Ta = 25°C)

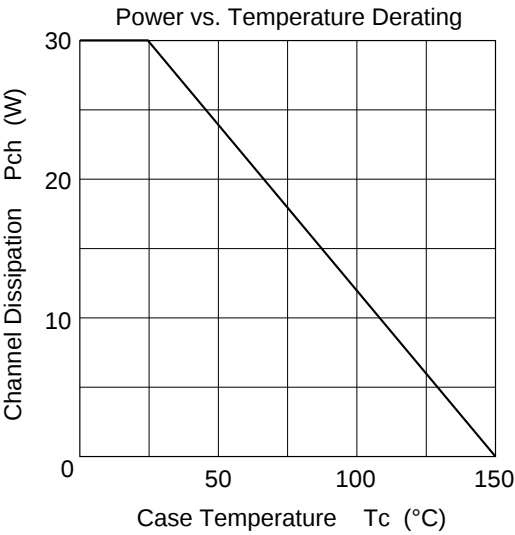
Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	−200	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	−6	A
Drain peak current	I _{D(pulse)} ^{*1}	−24	A
Body to drain diode reverse drain current	I _{DR}	−6	A
Channel dissipation	Pch ^{*2}	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	−55 to +150	°C

Notes: 1. PW 10 μs, duty cycle 1%
2. Value at Tc = 25°C

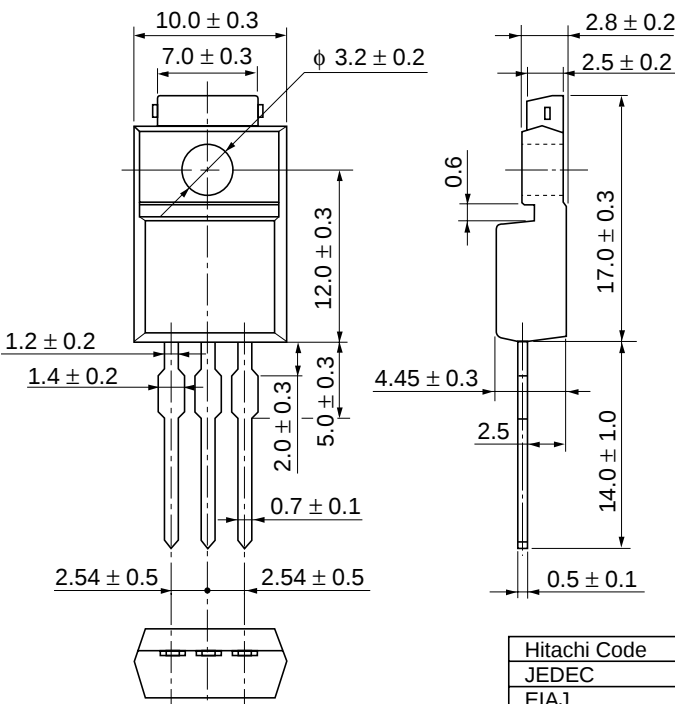
Electrical Characteristics (Ta = 25°C)

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	$V_{(BR)GSS}$	± 20	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$, $V_{DS} = 0$
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}	—	—	-250	μA	$V_{DS} = -160 \text{ V}$, $V_{GS} = 0$
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		$I_D = -3 \text{ A}$ $V_{GS} = -10 \text{ V}^{*1}$
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	$R_L = 6$
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	$I_F = -6 \text{ A}$, $V_{GS} = 0$, $diF/dt = 50 \text{ A}/\mu\text{s}$

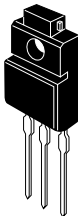
Note: 1. Pulse Test



Package Dimensions



As of January, 2001
Unit: mm



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

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