
2SJ409(L), 2SJ409(S)

Silicon P-Channel MOS FET

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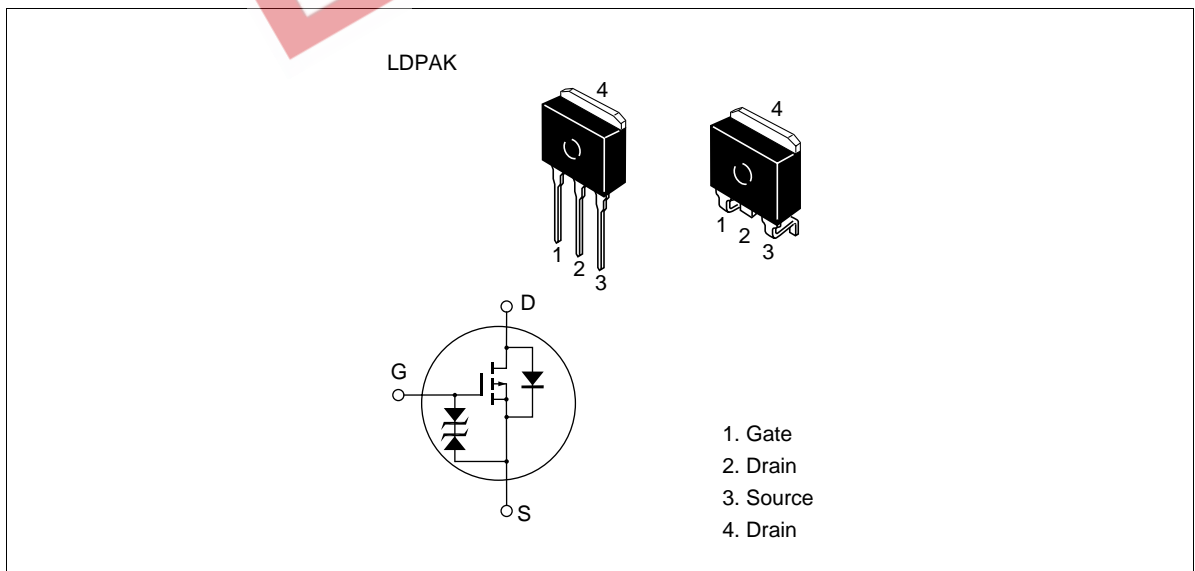
Application

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



2SJ409(L), 2SJ409(S)

Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	-100	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	-20	A
Drain peak current	I _{D(pulse)} ^{*1}	-80	A
Body to drain diode reverse drain current	I _{DR}	-20	A
Channel dissipation	Pch ^{*2}	75	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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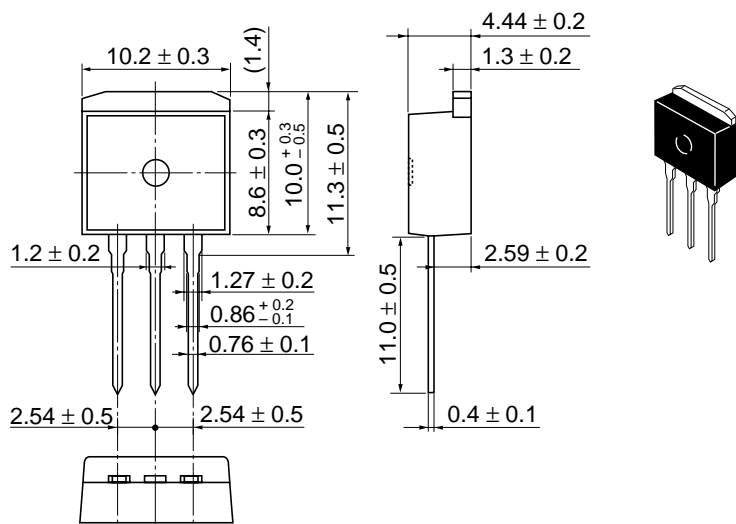
Electrical Characteristics (T_a = 25°C)

Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	-100	—	—	V	I _D = -10 mA, 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}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	-250	μA	V _{DS} = -80 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	-1.0	—	-2.0	V	I _D = -1 mA, V _{DS} = -10 V
Static drain to source on state resistance	R _{DS(on)}	—	0.12	0.16	Ω	I _D = -10 A V _{GS} = -10 V*1
			—	0.16	0.22	Ω
Forward transfer admittance	y _{fs}	7.5	12	—	S	I _D = -10 A V _{DS} = -10 V*1
Input capacitance	C _{iss}	—	1860	—	pF	V _{DS} = -10 V
Output capacitance	C _{oss}	—	680	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	145	—	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	—	15	—	ns	I _D = -10 A
Rise time	t _r	—	115	—	ns	V _{GS} = -10 V
Turn-off delay time	t _{d(off)}	—	320	—	ns	R _L = 3 Ω
Fall time	t _f	—	170	—	ns	
Body to drain diode forward voltage	V _{DF}	—	-1.05	—	V	I _F = -20 A, V _{GS} = 0
Body to drain diode reverse recovery time	t _{rr}	—	280	—	ns	I _F = -20 A, V _{GS} = 0, diF/dt = 50 A/μs

See characteristics curves of 2SJ221

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Unit: mm



Hitachi Code	LPAK (L)
JEDEC	—
EIAJ	—
Weight (reference value)	1.4 g

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