2SJ293

Silicon P-Channel MOS FET

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November 1996

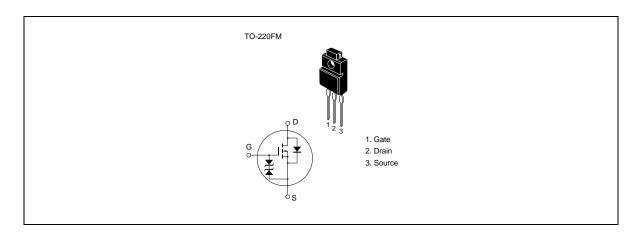
Application

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
- Avalanche ratings

Outline



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Absolute Maximum Ratings $(Ta = 25^{\circ}C)$

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	-60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	–15	A
Drain peak current	I _{D(pulse)} *1	-60	A
Body to drain diode reverse drain current	I _{DR}	–15	A
Avalanche current	I_**3	–15	A
Avalanche energy	E _{AR} *3	19	mJ
Channel dissipation	Pch*2	30	W
Channel temperature	Tch	150	°C
Storage temperature	Tstg	-55 to +150	°C

Notes 1. PW ² 10 µs, duty cycle ² 1%

2. Value at $T_c = 25$ °C

3. Value at Tch = 25°C, Rg 3 50 $\frac{1}{2}$

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Electrical Characteristics ($Ta = 25^{\circ}C$)

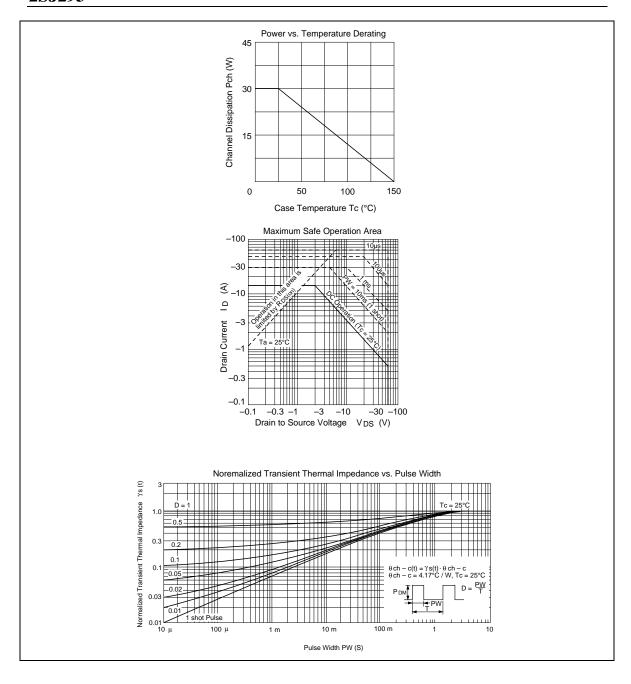
Item	Symbol	Min	Тур	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-60	_	_	V	$I_{D} = -10 \text{ mA}, V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	±20	_	_	V	$I_{G} = \pm 100 \ \mu A, \ V_{DS} = 0$
Gate to source leak current	I _{GSS}	_	_	±10	μΑ	$V_{GS} = \pm 16 \text{ V}, V_{DS} = 0$
Zero gate voltage drain current	I _{DSS}	_	_	-250	μΑ	$V_{DS} = -50 \text{ V}, V_{GS} = 0$
Gate to source cutoff voltage	$V_{\text{GS(off)}}$	-1.0	_	-2.25	V	$I_{D} = -1 \text{ mA}, V_{DS} = -10 \text{ V}$
Static drain to source on state	$R_{\scriptscriptstyle DS(on)}$	_	0.075	0.095	Ω	$I_D = -8 \text{ A}, V_{GS} = -10 \text{ V}^{*1}$
resistance		_	0.09	0.12	Ω	$I_D = -8 \text{ A}, V_{GS} = -4 \text{ V}^{*1}$
Forward transfer admittance	y _{fs}	8	12	_	S	$I_D = -8 \text{ A}, V_{DS} = -10 \text{ V}^{*1}$
Input capacitance	Ciss	_	1450	_	pF	$V_{DS} = -10 \text{ V}, V_{GS} = 0,$
Output capacitance	Coss	_	670	_	pF	f = 1 MHz
Reverse transfer capacitance	Crss	_	240	_	pF	_
Turn-on delay time	t _{d(on)}	_	20	_	ns	$I_{D} = -8 \text{ A}, V_{GS} = -10 \text{ V},$
Rise time	t,	_	95	_	ns	$R_L = 3.75 \Omega$
Turn-off delay time	t _{d(off)}	_	230	_	ns	_
Fall time	t _f	_	160	_	ns	_
Body to drain diode forward voltage	V_{DF}	_	-1.5	_	V	$I_F = -15 \text{ A}, V_{GS} = 0$
Body to drain diode reverse recovery time	t _{rr}	_	160	_	ns	$I_F = -15 \text{ A}, V_{GS} = 0,$ $di_F/dt = 50 \text{ A}/\mu\text{s}$

Note 1. Pulse test

See characteristic curves of 2SJ290

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