

2SJ280L, 2SJ280S

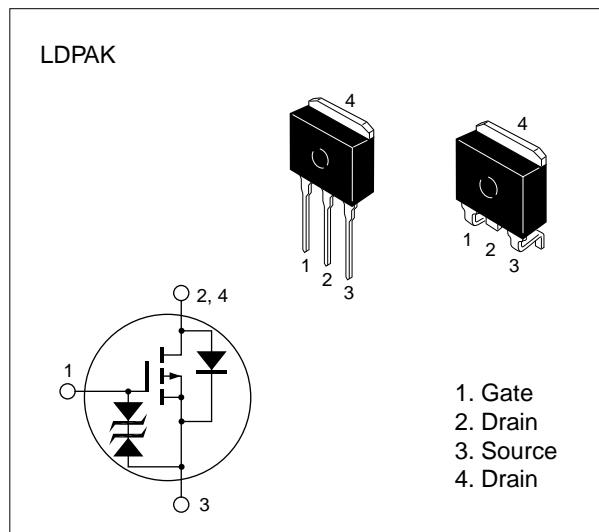
Silicon P Channel MOS FET

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

**Table 1 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	-30	A
Drain peak current	I _{D(pulse)} *	-120	A
Body-drain diode reverse drain current	I _{DR}	-30	A
Avalanche current	I _{AP} ***	-30	A
Avalanche energy	E _{AR} ***	77	mJ
Channel dissipation	P _{ch} **	75	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 µs, duty cycle ≤ 1 %

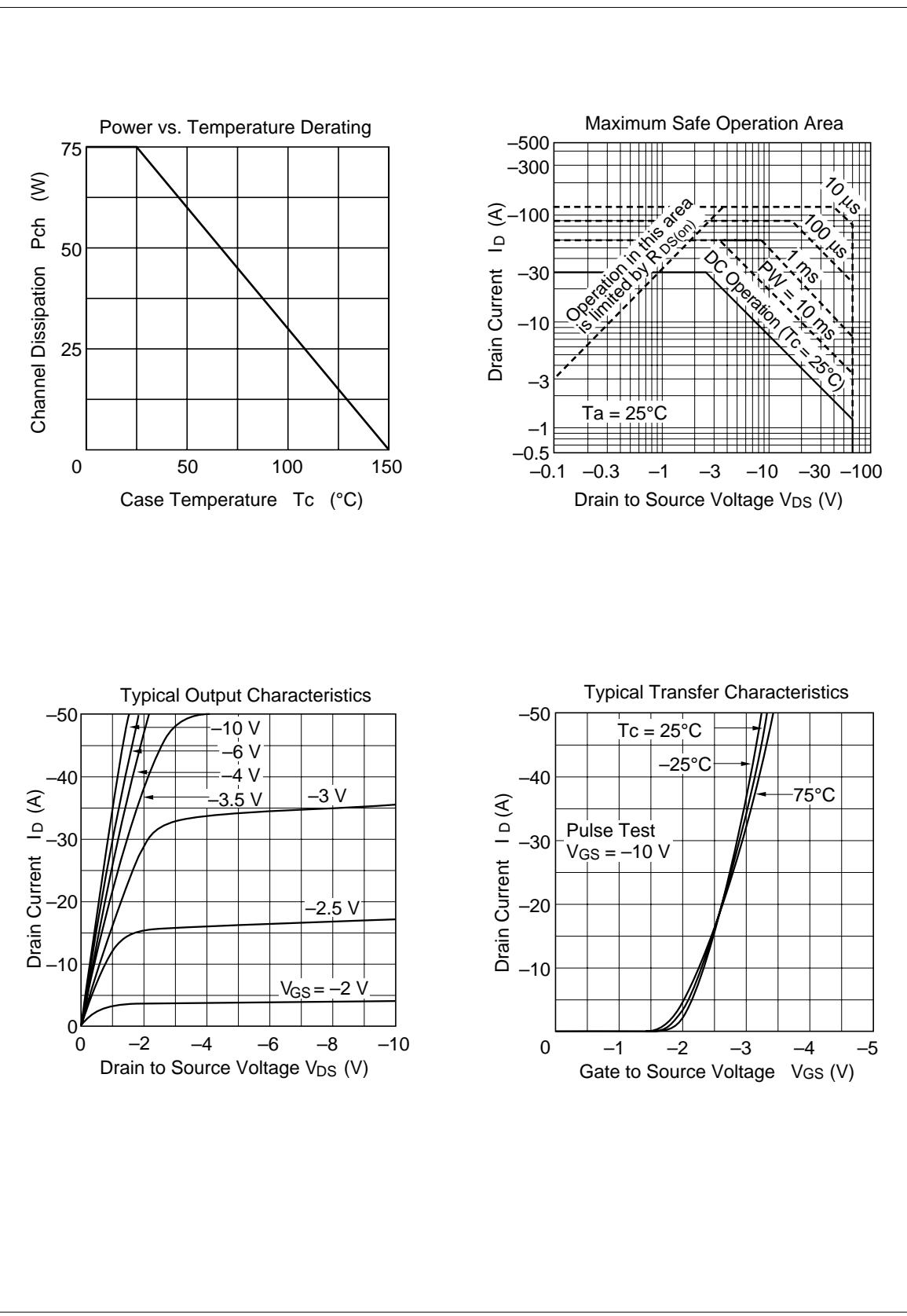
** Value at T_c = 25 °C*** Value at T_{ch} = 25 °C, R_g ≥ 50 Ω

2SJ280 (L), 2SJ280 (S)

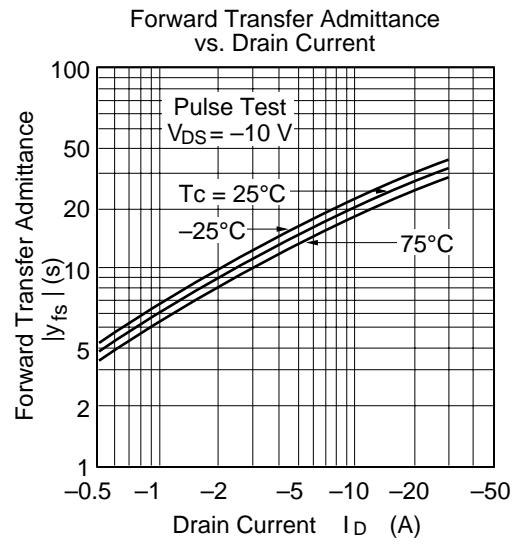
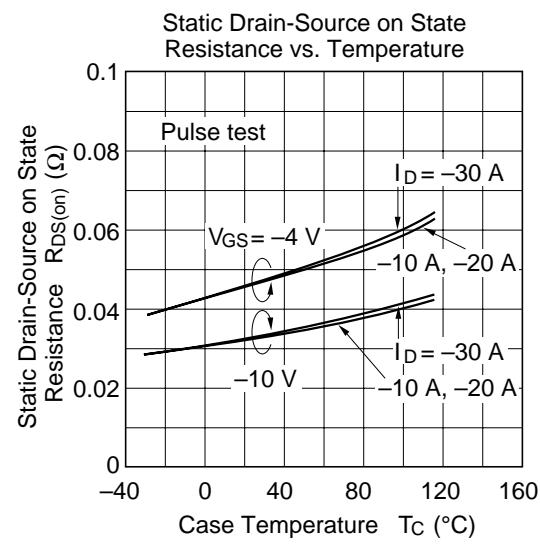
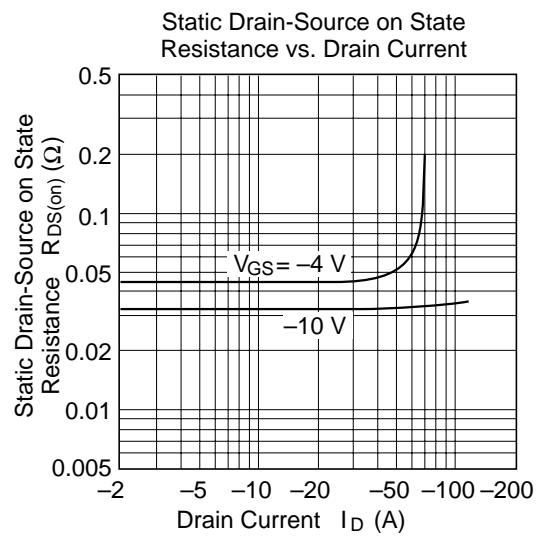
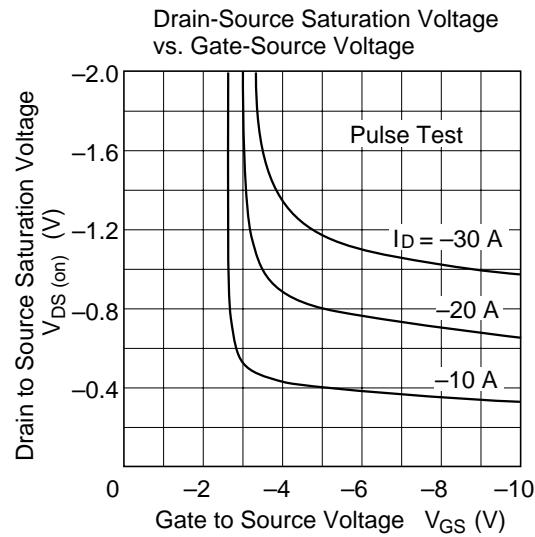
Table 2 Electrical Characteristics (Ta = 25°C)

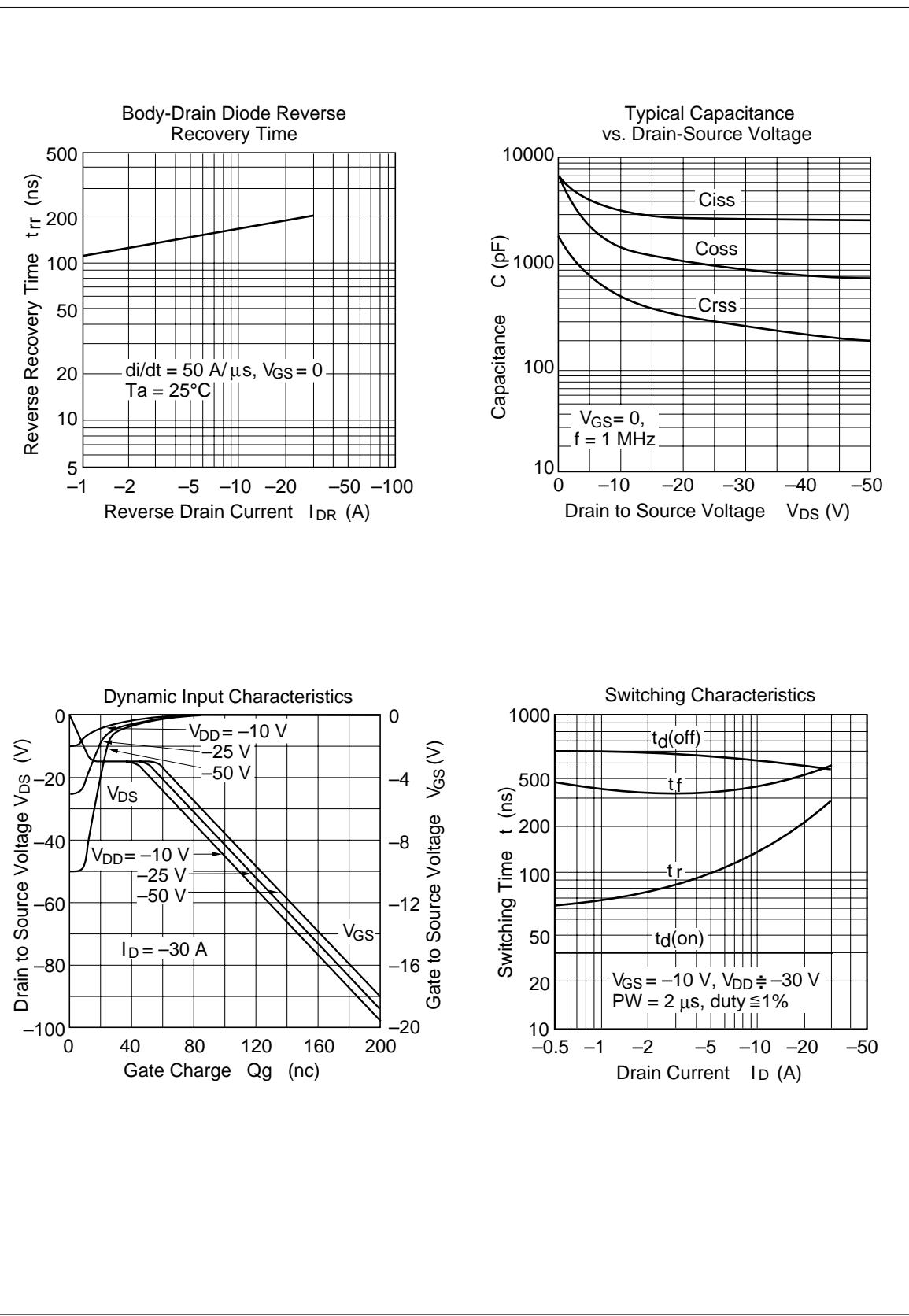
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	V _{(BR)DSS}	-60	—	—	V	I _D = -10 mA, V _{GS} = 0
Gate to source breakdown voltage	V _{(BR)GSS}	±20	—	—	V	I _G = ±200 μA, V _{DS} = 0
Gate to source leak current	I _{GSS}	—	—	±10	μA	V _{GS} = ±16 V, V _{DS} = 0
Zero gate voltage drain current	I _{DSS}	—	—	-250	μA	V _{DS} = -50 V, V _{GS} = 0
Gate to source cutoff voltage	V _{GS(off)}	-1.0	—	-2.25	V	I _D = -1 mA, V _{DS} = -10 V
Static drain to source on state resistance	R _{DS(on)}	—	0.033	0.043	Ω	I _D = -15 A V _{GS} = -10 V *
		—	0.045	0.06	Ω	I _D = -15 A V _{GS} = -4 V *
Forward transfer admittance	y _{fs}	17	25	—	S	I _D = -15 A V _{DS} = -10 V *
Input capacitance	C _{iss}	—	3300	—	pF	V _{DS} = 10 V
Output capacitance	C _{oss}	—	1500	—	pF	V _{GS} = 0
Reverse transfer capacitance	C _{rss}	—	480	—	pF	f = 1 MHz
Turn-on delay time	t _{d(on)}	—	30	—	ns	I _D = -15 A
Rise time	t _r	—	170	—	ns	V _{GS} = -10 V
Turn-off delay time	t _{d(off)}	—	500	—	ns	R _L = 2 Ω
Fall time	t _f	—	390	—	ns	
Body-drain diode forward voltage	V _{DF}	—	-1.5	—	V	I _F = -30 A, V _{GS} = 0
Body-drain diode reverse recovery time	t _{rr}	—	200	—	ns	I _F = -30 A, V _{GS} = 0, diF / dt = 50 A / μs

* Pulse Test

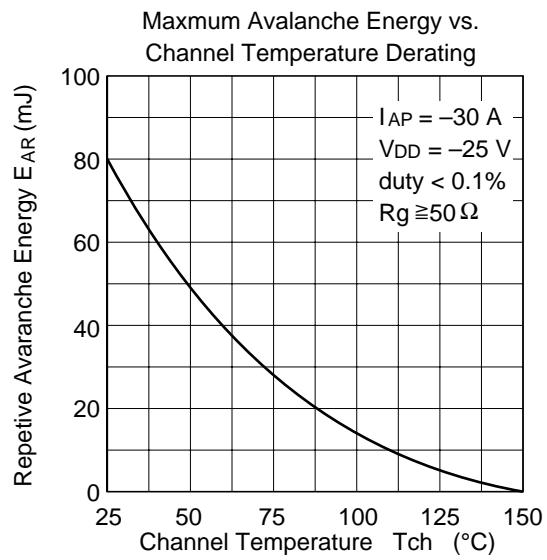
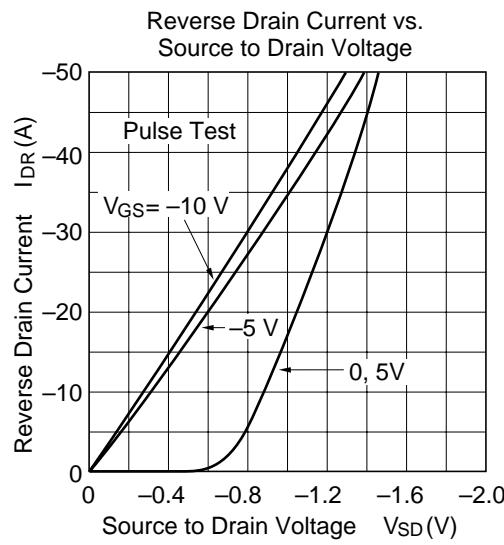


2SJ280 (L), 2SJ280 (S)

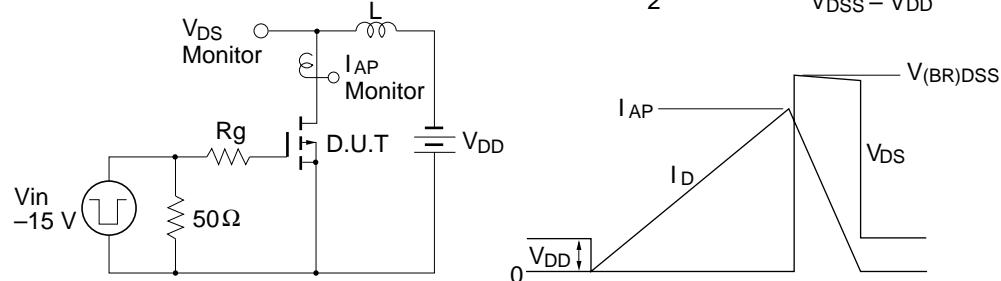




2SJ280 L, 2SJ280 S



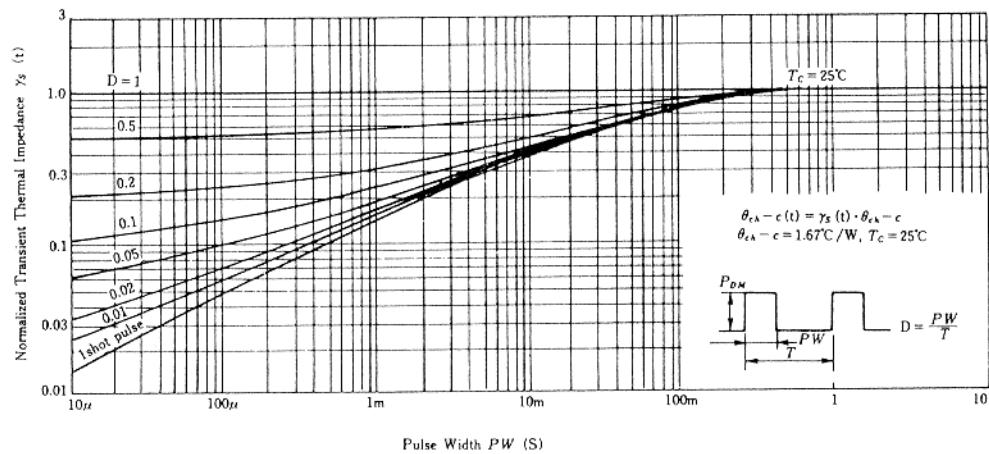
Avalanche Test Circuit and Waveform



$$E_{AR} = \frac{1}{2} \cdot L \cdot I_{AP}^2 \cdot \frac{V_{DSS}}{V_{DSS} - V_{DD}}$$

-2SJ280(L), 2SJ280(S)

NORMALIZED TRANSIENT THERMAL IMPEDANCE VS. PULSE WIDTH



2SJ290

Silicon P-Channel MOS FET

Application

High speed power switching

Features

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- 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

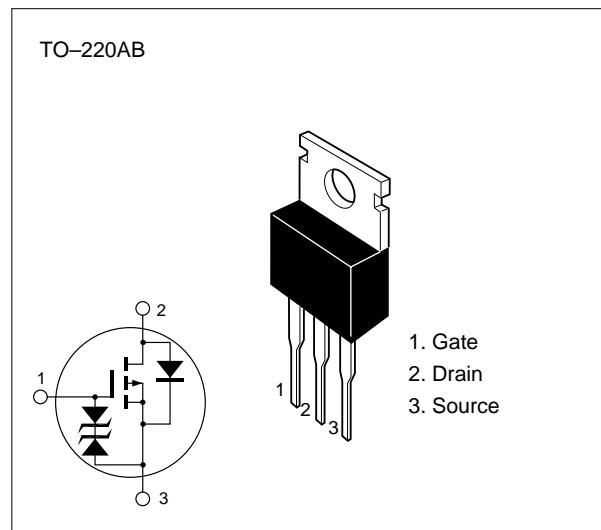


Table 1 Absolute Maximum Ratings (Ta = 25°C)

Item	Symbol	Ratings	Unit
Drain to source voltage	V _{DSS}	-60	V
Gate to source voltage	V _{GSS}	±20	V
Drain current	I _D	-15	A
Drain peak current	I _{D(pulse)} *	-60	A
Body-drain diode reverse drain current	I _{DR}	-15	A
Avalanche current	I _{AP} ***	-15	A
Avalanche energy	E _{AR} ***	19	mJ
Channel dissipation	P _{ch} **	50	W
Channel temperature	T _{ch}	150	°C
Storage temperature	T _{stg}	-55 to +150	°C

* PW ≤ 10 µs, duty cycle ≤ 1 %

** Value at T_c = 25 °C

*** Value at T_{ch} = 25 °C, R_g ≥ 50 Ω