

## 2SJ246 , 2SJ246

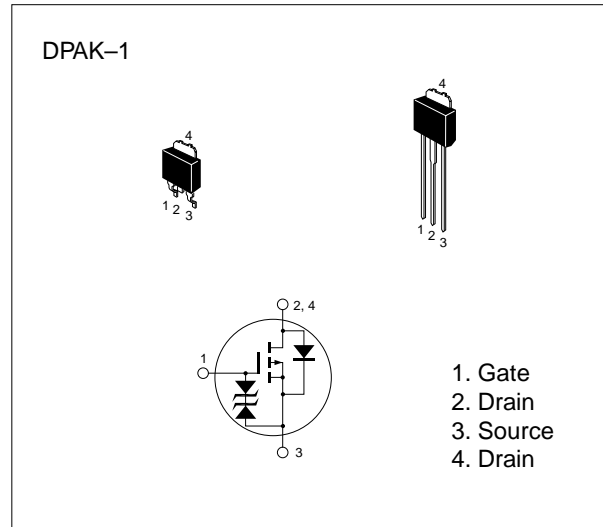
### SILICON P-CHANNEL MOS FET

#### Application

High speed power switching

#### Features

- Low on-resistance
- High speed switching
- Low drive current
- 4V gate drive device can be driven from 5V source.
- Suitable for Switching regulator, DC – DC converter



**Table 1 Absolute Maximum Ratings** ( $T_a = 25^\circ\text{C}$ )

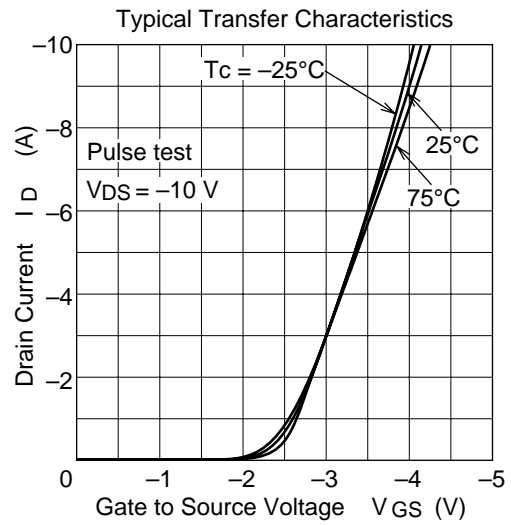
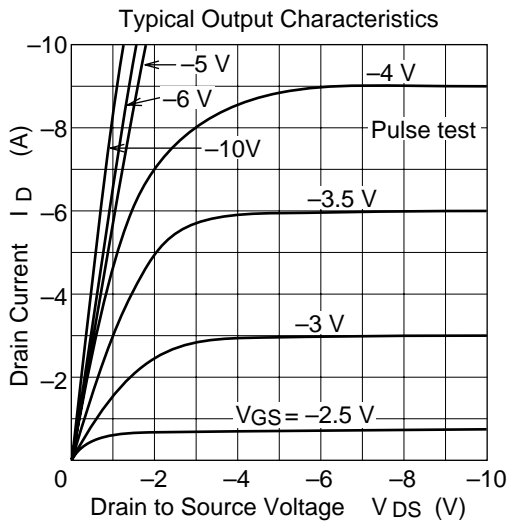
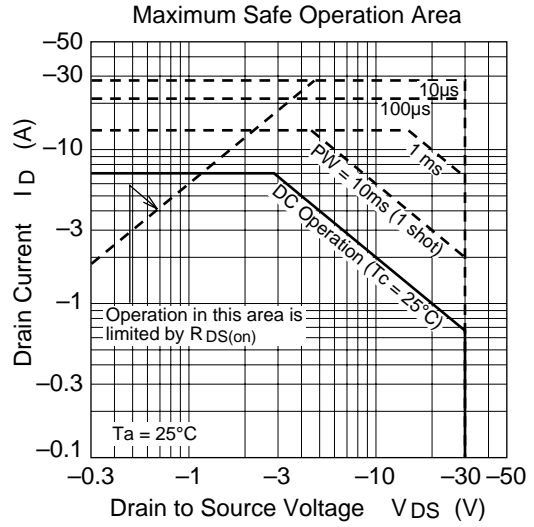
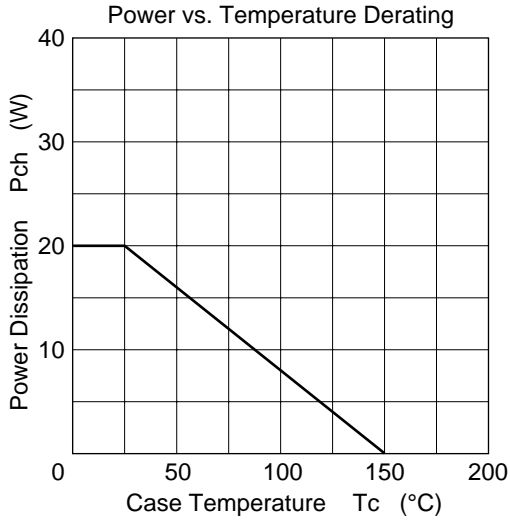
Item	Symbol	Ratings	Unit
Drain to source voltage	$V_{DSS}$	-30	V
Gate to source voltage	$V_{GSS}$	$\pm 20$	V
Drain current	$I_D$	-7	A
Drain peak current	$I_{D(\text{pulse})}^*$	-28	A
Body-drain diode reverse drain current	$I_{DR}$	-7	A
Channel dissipation	$P_{ch}^{**}$	20	W
Channel temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

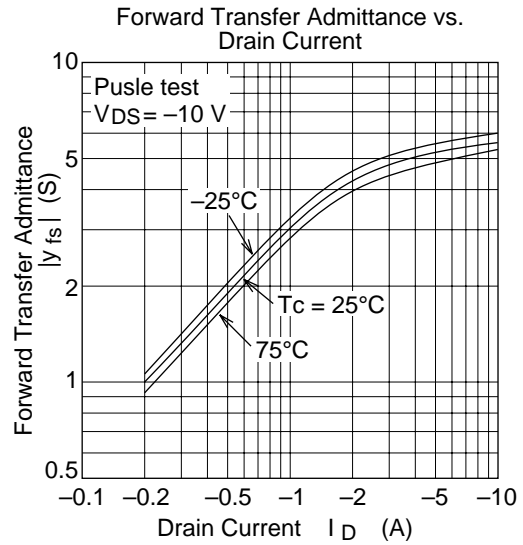
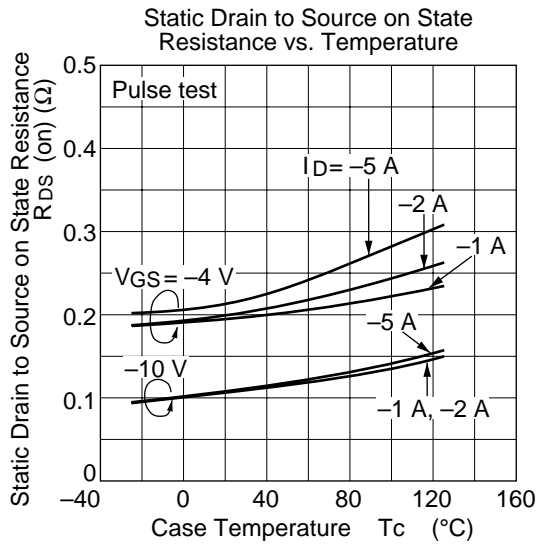
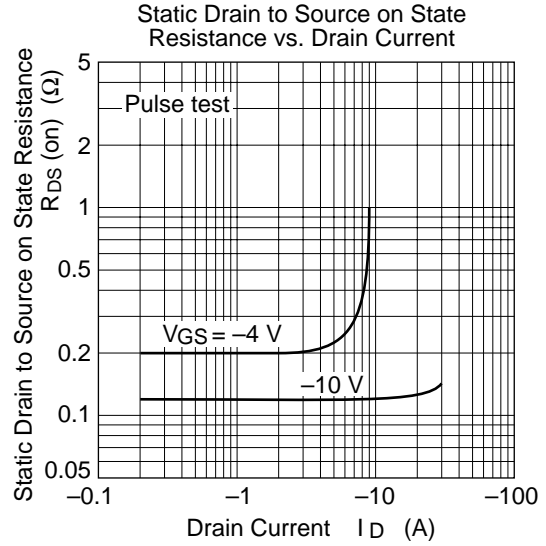
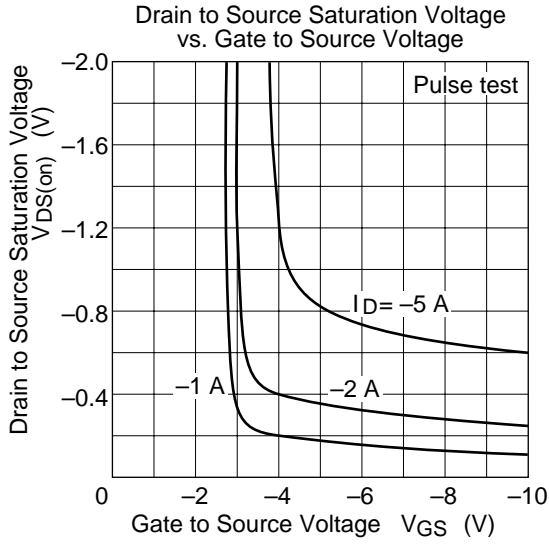
\*  $PW \leq 10 \mu\text{s}$ , duty cycle  $\leq 1\%$

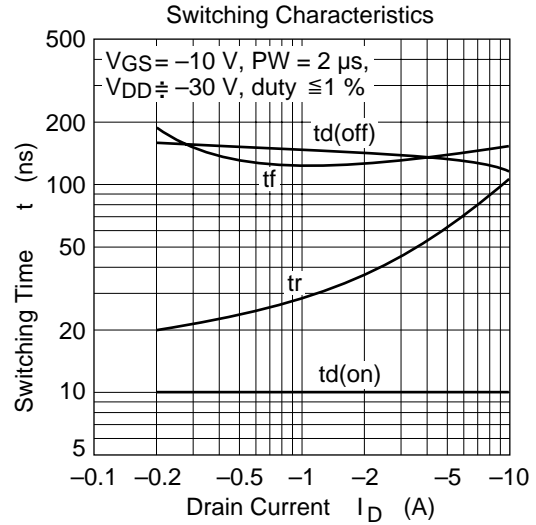
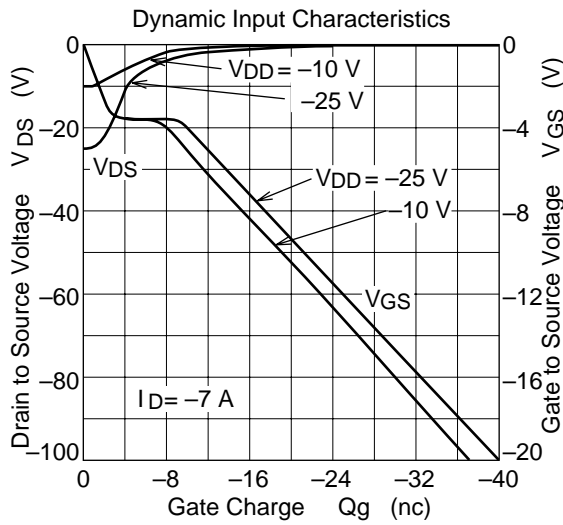
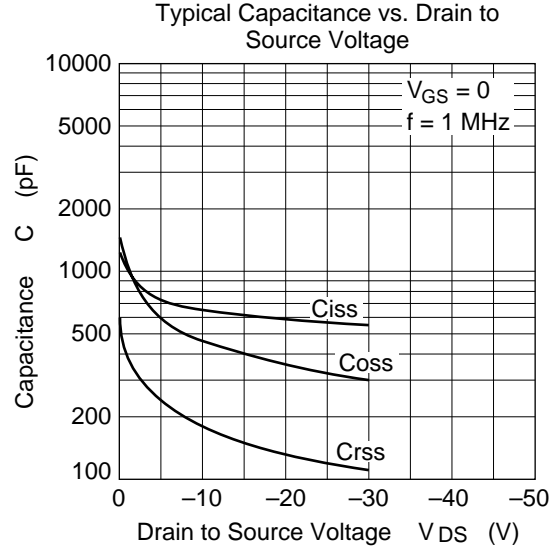
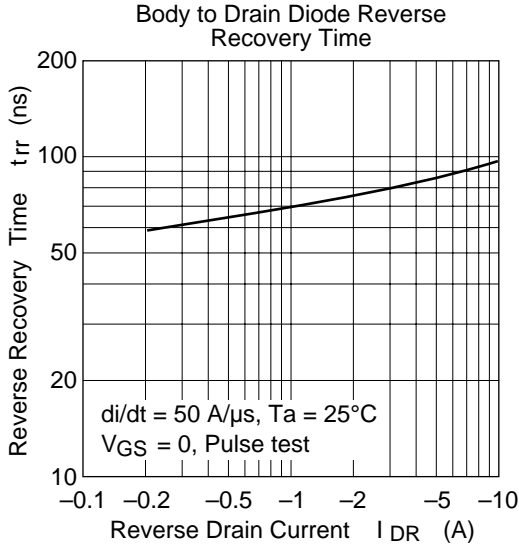
\*\* Value at  $T_c = 25^\circ\text{C}$

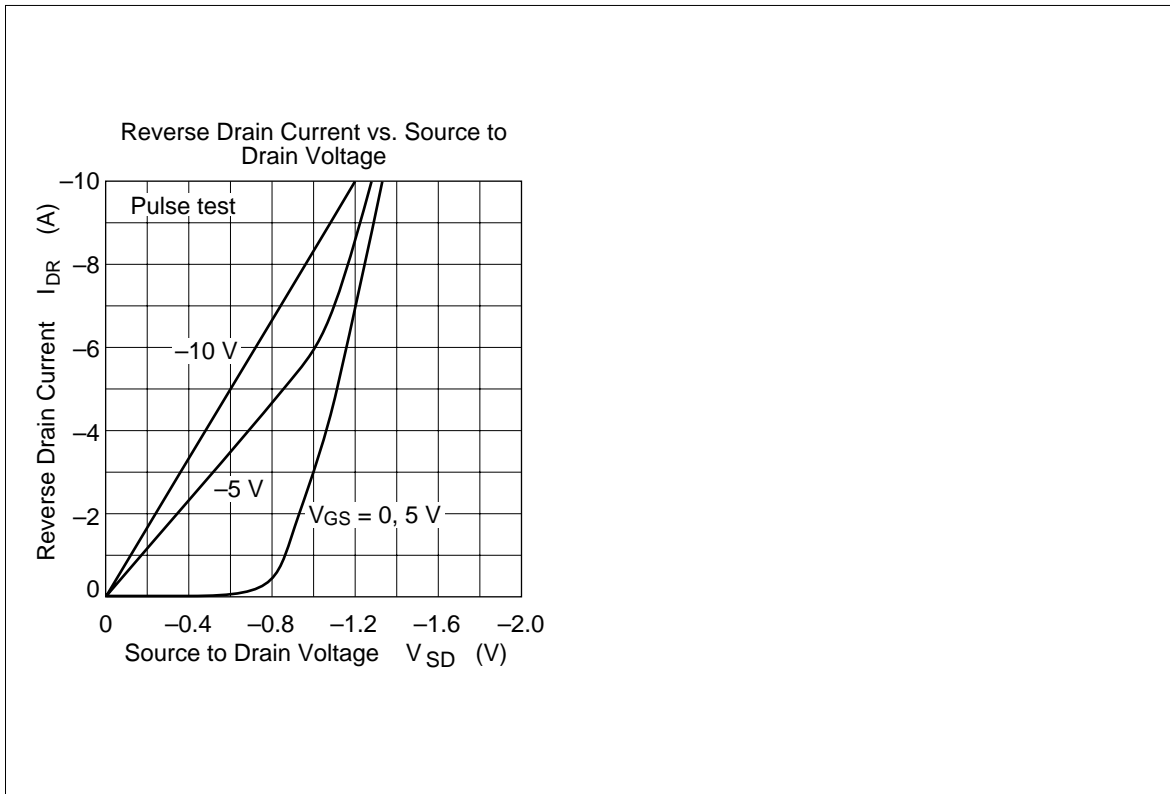
**Table 2 Electrical Characteristics** (Ta = 25°C)

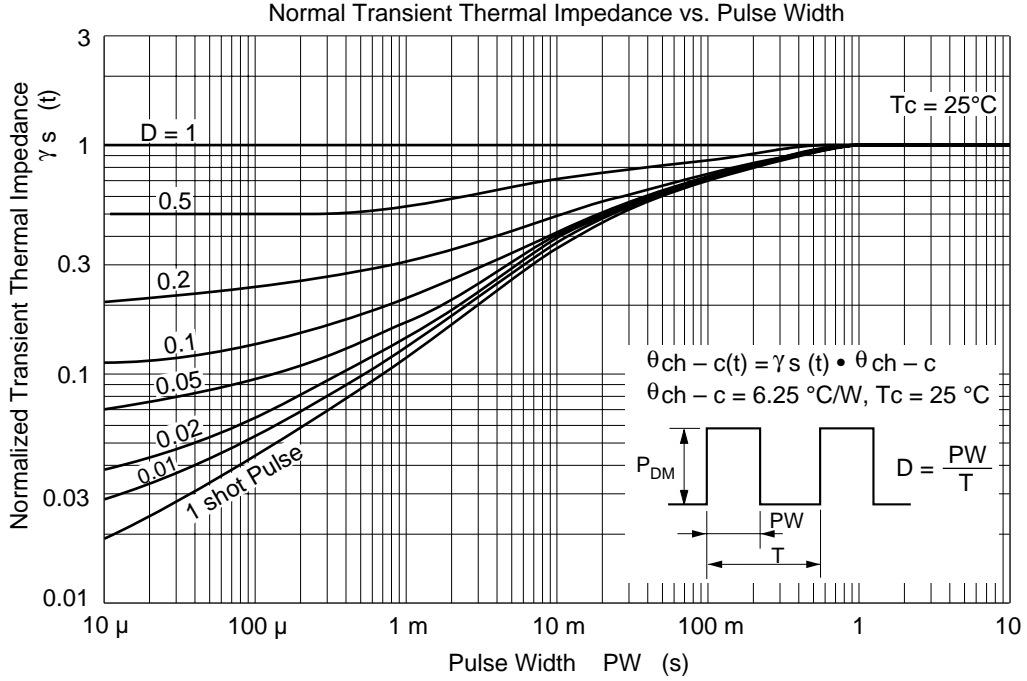
Item	Symbol	Min	Typ	Max	Unit	Test conditions
Drain to source breakdown voltage	$V_{(BR)DSS}$	-30	—	—	V	$I_D = -10 \text{ mA}$ , $V_{GS} = 0$
Gate to source breakdown voltage	$V_{(BR)GSS}$	$\pm 20$	—	—	V	$I_G = \pm 100 \text{ }\mu\text{A}$ , $V_{DS} = 0$
Gate to source leak current	$I_{GSS}$	—	—	$\pm 10$	$\mu\text{A}$	$V_{GS} = \pm 16 \text{ V}$ , $V_{DS} = 0$
Zero gate voltage drain current	$I_{DSS}$	—	—	-100	$\mu\text{A}$	$V_{DS} = -25 \text{ V}$ , $V_{GS} = 0$
Gate to source cutoff voltage	$V_{GS(off)}$	-1.0	—	-2.5	V	$V_{DS} = -10 \text{ V}$ , $I_D = -1 \text{ mA}$
Static drain to source on state resistance	$R_{DS(on)}$	—	0.12	0.17	$\Omega$	$I_D = -4 \text{ A}$ $V_{GS} = -10 \text{ V}$
		—	0.21	0.31	$\Omega$	$I_D = -4 \text{ A}$ $V_{GS} = -4 \text{ V}$
Forward transfer admittance	$ y_{fs} $	3.0	5.0	—	S	$V_{DS} = -10 \text{ V}$ $I_D = -4 \text{ A}$
Input capacitance	$C_{iss}$	—	660	—	pF	$V_{DS} = -10 \text{ V}$
Output capacitance	$C_{oss}$	—	465	—	pF	$V_{GS} = 0$
Reverse transfer capacitance	$C_{rss}$	—	180	—	pF	$f = 1 \text{ MHz}$
Turn-on delay time	$t_{d(on)}$	—	10	—	ns	$V_{GS} = -10 \text{ V}$
Rise time	$t_r$	—	55	—	ns	$I_D = -4 \text{ V}$
Turn-off delay time	$t_{d(off)}$	—	135	—	ns	$R_L = 7.5 \text{ }\Omega$
Fall time	$t_f$	—	135	—	ns	
Body-drain diode forward voltage	$V_{DF}$	—	-1.2	—	V	$I_F = -7 \text{ A}$ , $V_{GS} = 0$
Body-drain diode reverse recovery time	$t_{rr}$	—	90	—	$\mu\text{s}$	$I_F = -7 \text{ A}$ , $V_{GS} = 0$ , $di_F / dt = 50 \text{ A} / \mu\text{s}$











Switching Time Test Circuit Waveform

