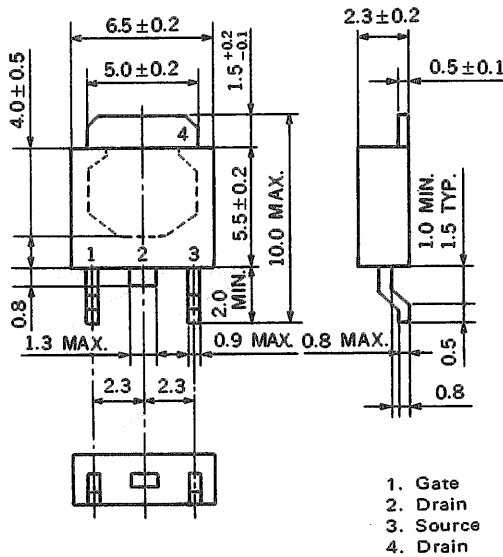


# MOS FIELD EFFECT POWER TRANSISTOR

## 2SJ128-Z

### FAST SWITCHING P-CHANNEL SILICON POWER MOS FET INDUSTRIAL USE

#### PACKAGE DIMENSIONS in millimeters



#### FEATURES

- Suitable for switching power supplies, actuator controls, and pulse circuits.
- Low  $R_{DS(on)}$
- No second breakdown
- 4 V Gate Drive – Logic level –
- Designed for Hybrid Integrated Circuits

#### ABSOLUTE MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

Drain to Source Voltage	$V_{DSS}$	-100	V
Gate to Source Voltage	$V_{GSS}$	$\pm 20$	V
Continuous Drain Current	$I_{D(DC)}$	$\pm 2$	A
Peak Drain Current	$I_{D(pulse)^*}$	$\pm 8$	A
Total Power Dissipation	$P_T^{**}$	20	W
Total Power Dissipation at $25^\circ\text{C}$ Ambient Temperature	$P_T^{***}$	2.0	W
Channel Temperature	$T_{ch}$	150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

\*  $PW \leq 300 \mu\text{s}$ , Duty Cycle  $\leq 10\%$

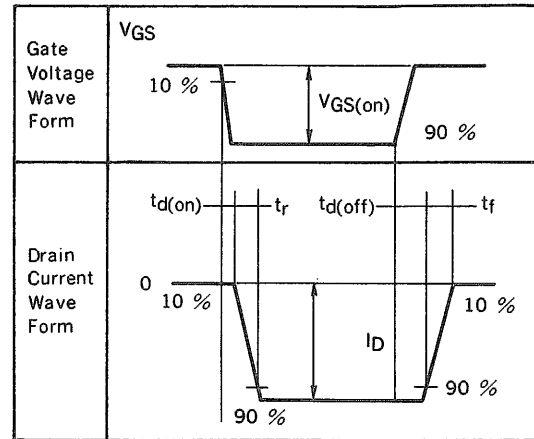
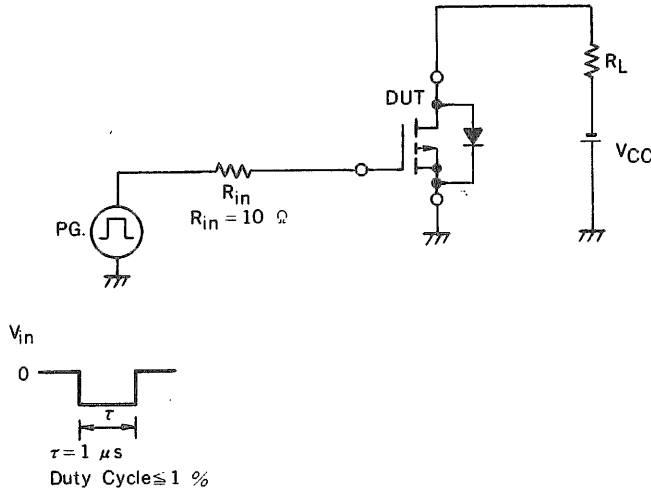
\*\*  $T_c = 25^\circ\text{C}$

\*\*\* Mounted on ceramic substrate of  $2.5 \text{ cm}^2 \times 0.7 \text{ mm}$

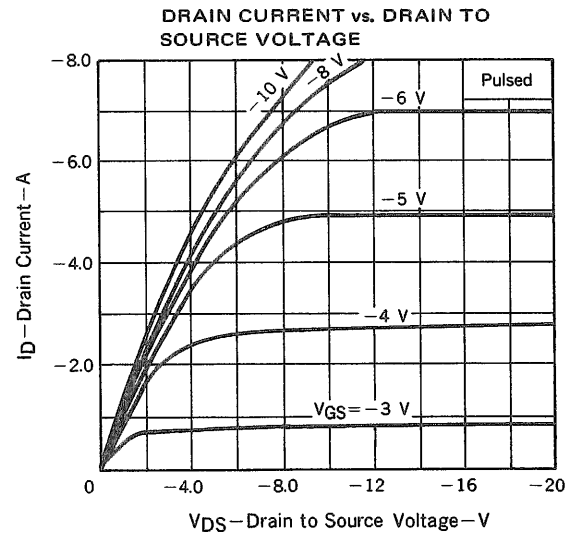
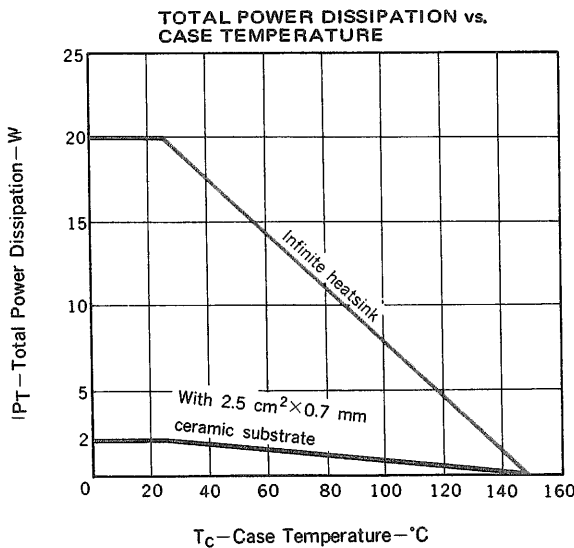
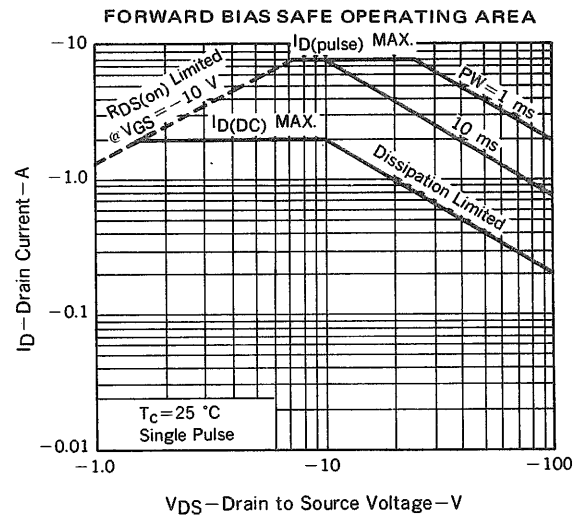
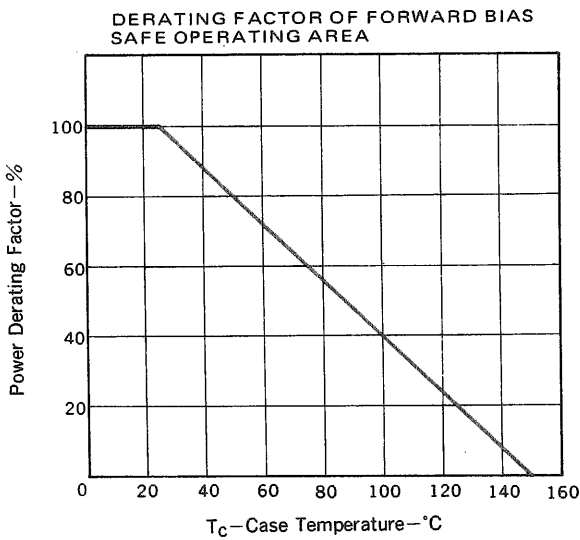
#### ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

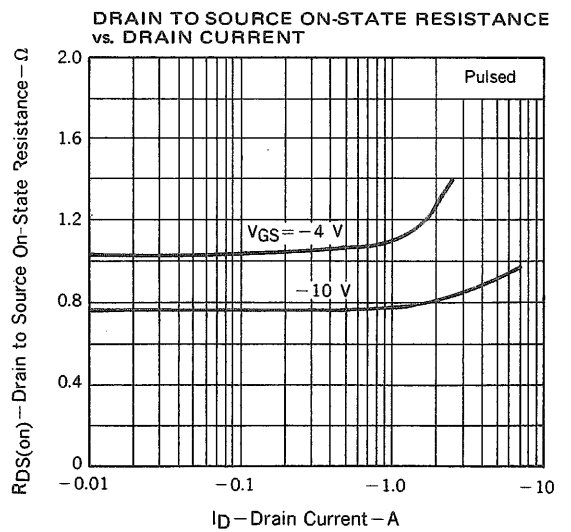
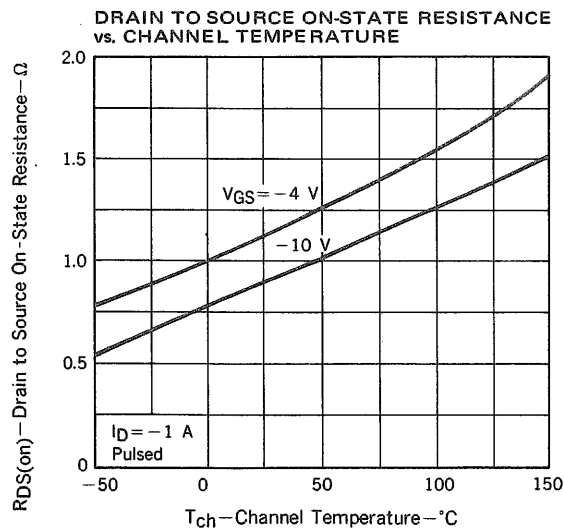
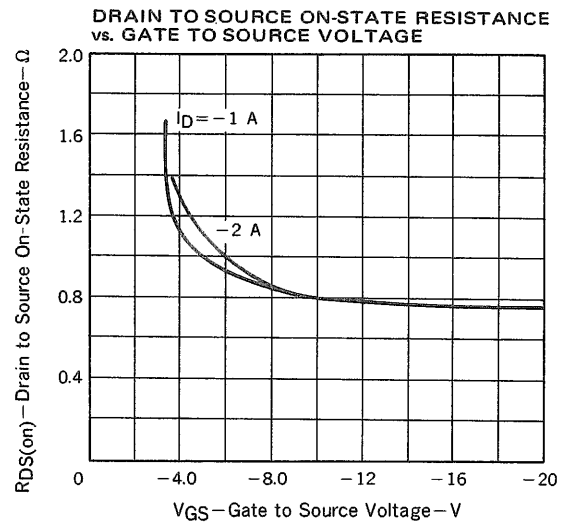
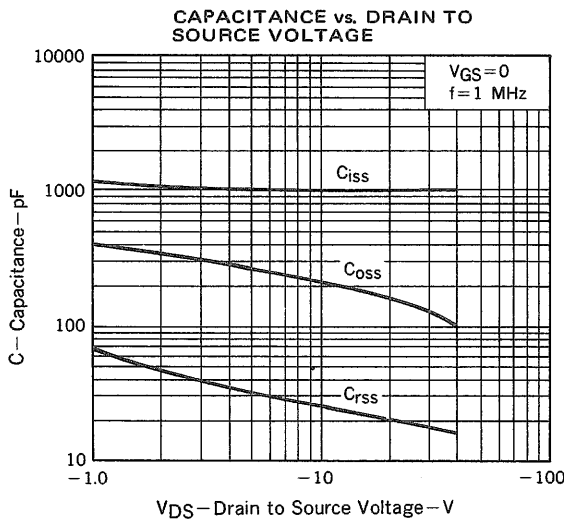
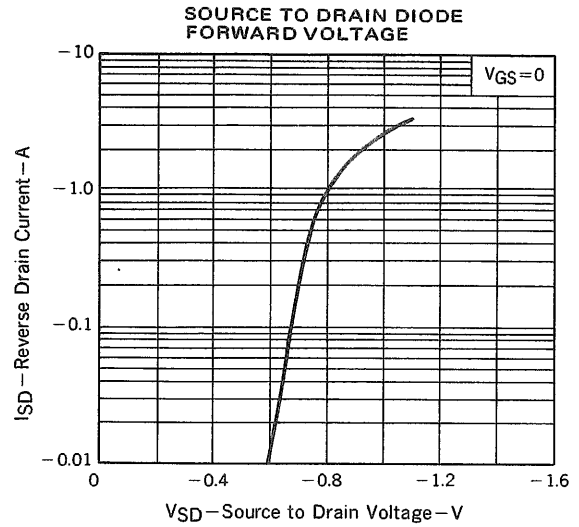
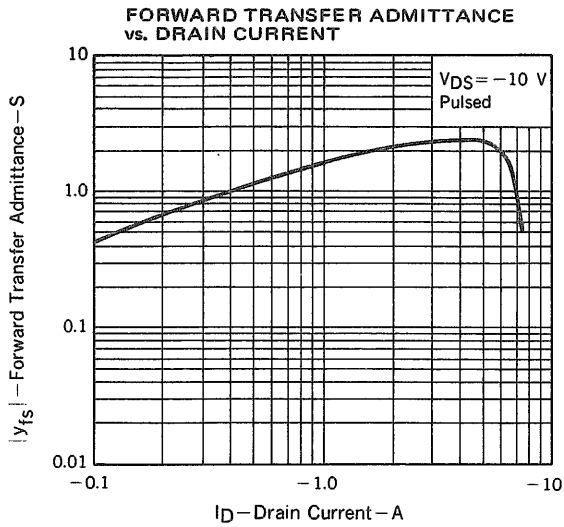
CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Leakage Current	$I_{DSS}$			-10	$\mu\text{A}$	$V_{DS} = -100 \text{ V}$ , $V_{GS} = 0$
Gate to Source Leakage Current	$I_{GSS}$			$\pm 100$	nA	$V_{GS} = -20 \text{ V}$ , $V_{DS} = 0$
Gate to Source Cutoff Voltage	$V_{GS(off)}$	-1.0		-3.0	V	$V_{DS} = -10 \text{ V}$ , $I_D = -1 \text{ mA}$
Forward Transfer Admittance	$ y_{fs} $	1.0			S	$V_{DS} = -10 \text{ V}$ , $I_D = -1 \text{ A}$
Drain to Source On-State Resistance	$R_{DS(on)}$		0.8	1.0	$\Omega$	$V_{GS} = -10 \text{ V}$ , $I_D = -1 \text{ A}$
Drain to Source On-State Resistance	$R_{DS(on)}$		1.1	1.5	$\Omega$	$V_{GS} = -4 \text{ V}$ , $I_D = -0.8 \text{ A}$
Input Capacitance	$C_{iss}$		1000		pF	$V_{DS} = -10 \text{ V}$ , $V_{GS} = 0$ $f = 1 \text{ MHz}$
Output Capacitance	$C_{oss}$		200		pF	
Reverse Transfer Capacitance	$C_{rss}$		25		pF	
Turn-On Delay Time	$t_{d(on)}$		30		ns	$I_D = -1 \text{ A}$ , $V_{CC} = -50 \text{ V}$ $V_{GS(on)} = -10 \text{ V}$ $R_L = 10 \Omega$ $R_{in} = 10 \Omega$
Rise Time	$t_r$		30		ns	
Turn-Off Delay Time	$t_{d(off)}$		110		ns	
Fall Time	$t_f$		40		ns	

TURN-ON AND TURN-OFF TIME TEST CIRCUIT

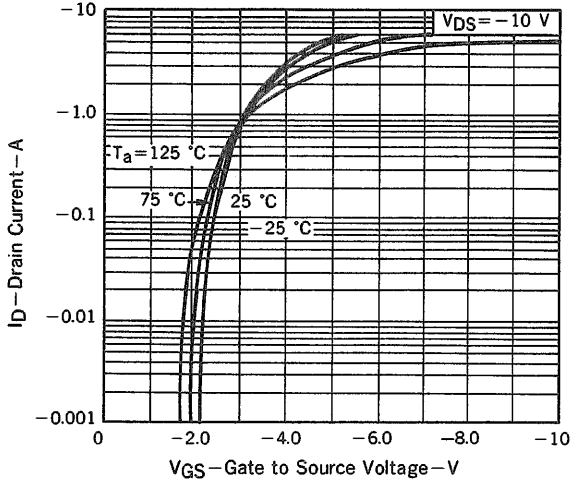


TYPICAL CHARACTERISTICS ( $T_a = 25^\circ C$ )

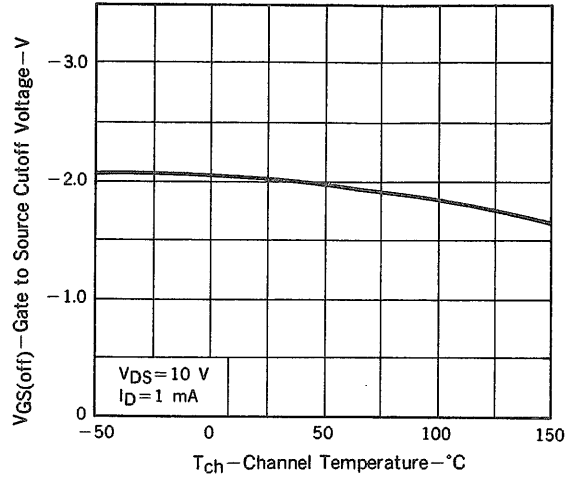




TRANSFER CHARACTERISTICS



GATE TO SOURCE CUTOFF VOLTAGE vs. CHANNEL TEMPERATURE



SWITCHING TIME vs. DRAIN CURRENT

