

MOS FIELD EFFECT TRANSISTOR 2SK1482

N-CHANNEL MOS FIELD EFFECT TRANSISTOR FOR SWITCHING

DESCRIPTION

The 2SK1482 is N-channel vertical type MOS FET switching device which can be directly driven from an IC operating with a 5 V single power supply. The device featuring low on-state resistance is of the voltage drive type and thus is ideal for driving actuators such as motors, solenoids, and relays.

FEATURES

- Low on-state resistance
 $R_{DS(on)1} = 0.8 \Omega \text{ MAX. (} V_{GS} = 4 \text{ V, } I_D = 0.5 \text{ A)}$
 $R_{DS(on)2} = 0.4 \Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 0.5 \text{ A)}$
- Voltage drive at logic level ($V_{GS} = 4 \text{ V}$) is possible.
- Bidirectional zener diode for protection is incorporated in between the gate and the source.
- Inductive loads can be driven without protective circuit thanks to the improved breakdown voltage between the drain and source.
- Can be used complementary with the 2SJ196.

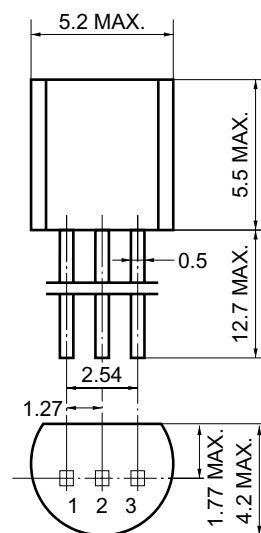
ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$)

Drain to Source Voltage ($V_{GS} = 0 \text{ V}$)	V_{DSS}	30	V
Gate to Source Voltage ($V_{DS} = 0 \text{ V}$)	V_{GSS}	± 20	V
Drain Current (DC) ($T_C = 25^\circ\text{C}$)	$I_{D(DC)}$	± 1.5	A
Drain Current (pulse) ^{Note}	$I_{D(pulse)}$	± 3.0	A
Total Power Dissipation ($T_A = 25^\circ\text{C}$)	P_T	750	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

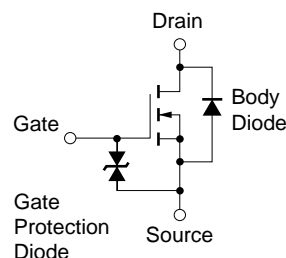
Note $PW \leq 10 \text{ ms}$, Duty Cycle $\leq 50\%$

Remark The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

PACKAGE DRAWING (Unit : mm)



EQUIVALENT CIRCUIT

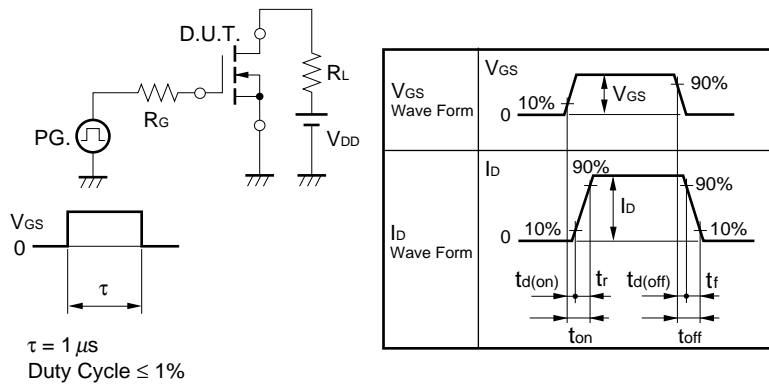


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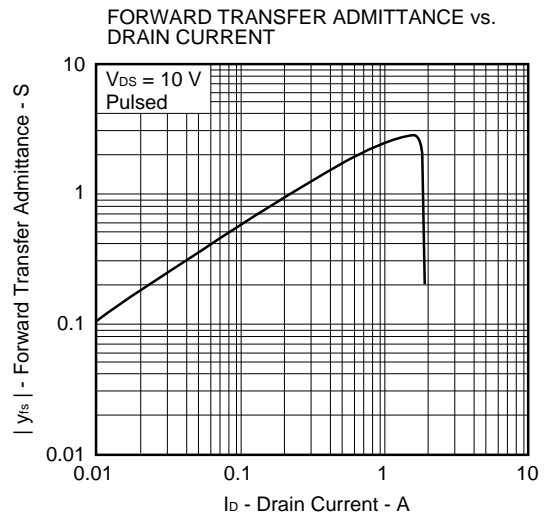
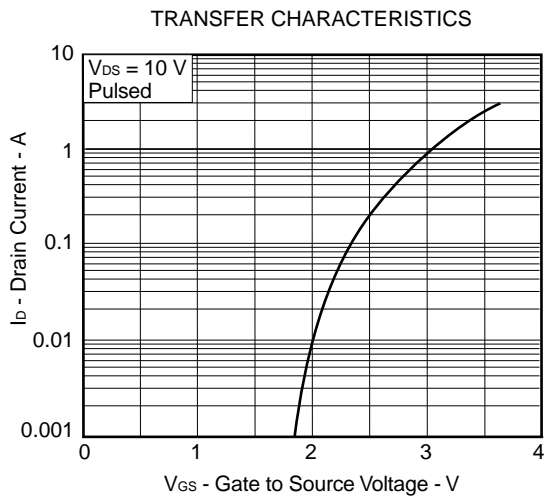
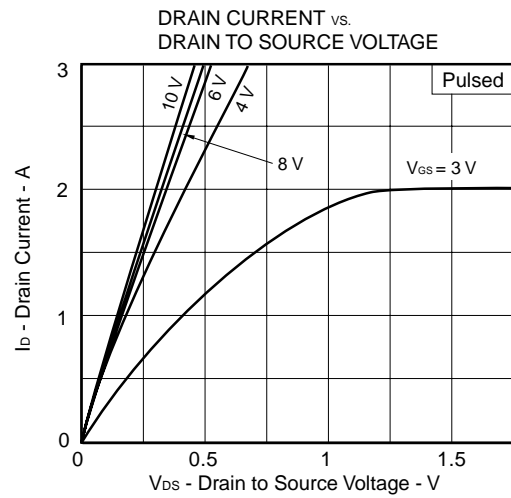
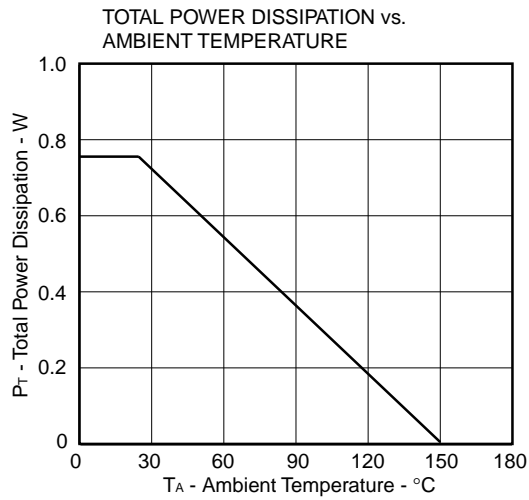
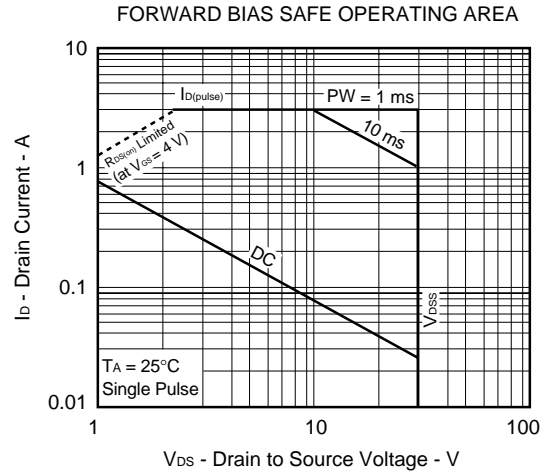
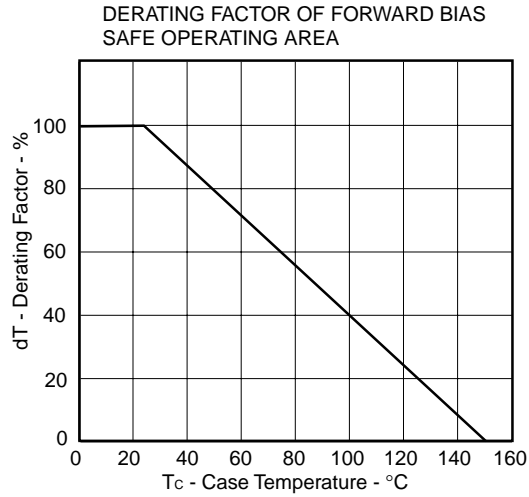
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

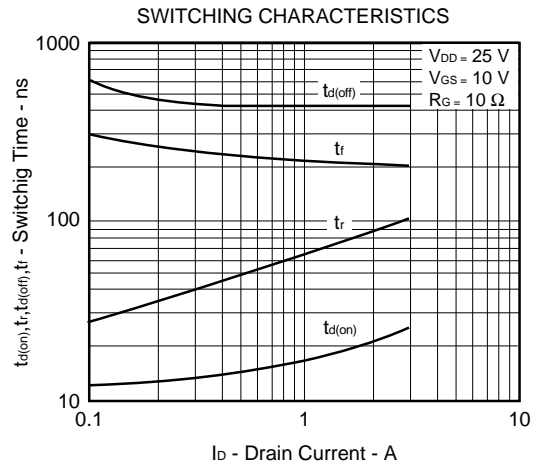
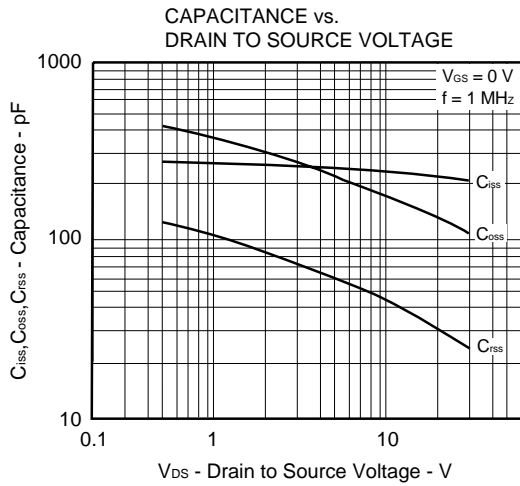
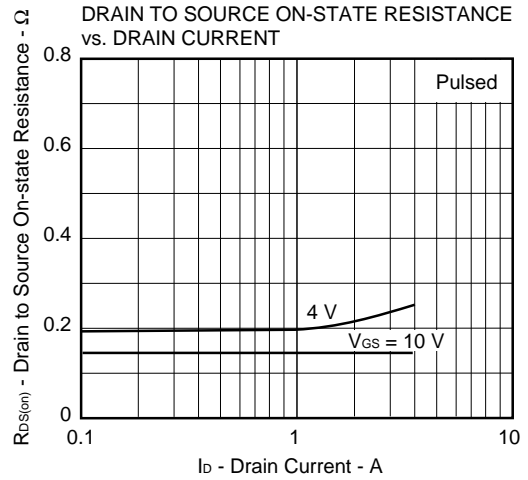
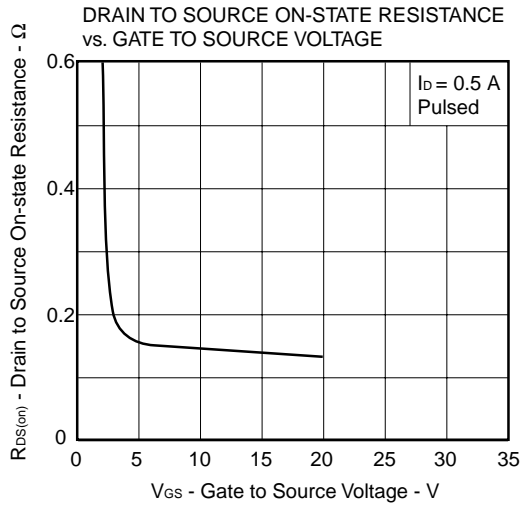
CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} = 30 V, V _{GS} = 0 V			10	μA
Gate Leakage Current	I _{GSS}	V _{GS} = ±20 V, V _{DS} = 0 V			±10	μA
Gate Cut-off Voltage	V _{GS(off)}	V _{DS} = 10 V, I _D = 1 mA	1.3	1.8	2.5	V
Forward Transfer Admittance	y _{fs}	V _{DS} = 10 V, I _D = 0.5 A	0.4			S
★ Drain to Source On-state Resistance	R _{DS(on)1}	V _{GS} = 4.0 V, I _D = 0.5 A		0.19	0.8	Ω
	R _{DS(on)2}	V _{GS} = 10 V, I _D = 0.5 A		0.15	0.4	Ω
Input Capacitance	C _{iss}	V _{DS} = 10 V		230		pF
Output Capacitance	C _{OSS}	V _{GS} = 0 V		170		pF
Reverse Transfer Capacitance	C _{rss}	f = 1 MHz		45		pF
Turn-on Delay Time	t _{d(on)}	V _{DD} = 25 V, I _D = 0.5 A		15		ns
Rise Time	t _r	V _{GS} = 10 V		50		ns
Turn-off Delay Time	t _{d(off)}	R _G = 10 Ω		420		ns
Fall Time	t _f			240		ns

SWITCHING TIME

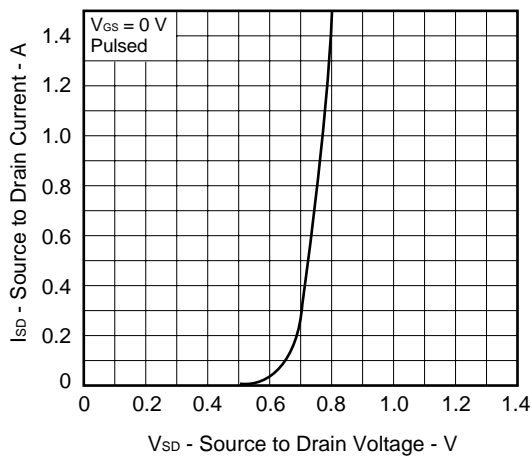


TYPICAL CHARACTERISTICS (T_A = 25°C)





SOURCE TO DRAIN DIODE FORWARD VOLTAGE



[MEMO]

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