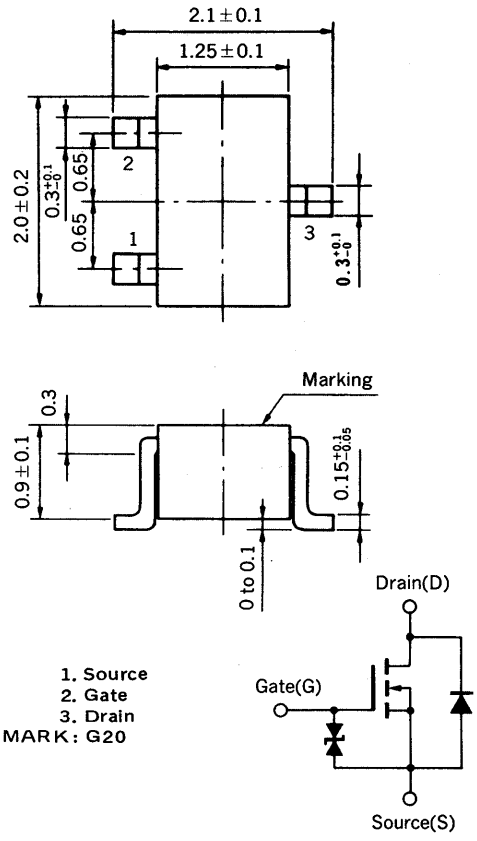
2SK1658

N-CHANNEL MOS FET FOR SWITCHING

PACKAGE DIMENSIONS (Unit : mm)



(Diode in the figure is the parasitic diode.)

The 2SK1658 is an N-channel vertical type MOS FET which can be driven by 2.5 V power supply.

As the MOS FET is low Gate Leakage Current, it is suitable for appliances including Filter Circuit.

FEATURES

- Directly driven by ICs having a 3 V power supply.
- Has low Gate Leakage Current
  I_{GSS} = ±5 nA MAX. @ V_{GS} = ±3.0 V

QUALITY GRADE

Standard

Please refer to "Quality grade on TY Semiconductor Devices" (Document number IEI-1209) published by TY Corporation to know the specification of quality grade on the devices and its recommended applications.

ABSOLUTE MAXIMUM RATINGS (T_a = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT	TEST CONDITIONS
Drain to Source Voltage	V_{DSS}	30	V	V_{GS} = 0
Gate to Source Voltage	V_{GSS}	±7	V	V_{DS} = 0
Drain Current	$I_{D(DC)}$	±100	mA	
Drain Current	$I_{D(pulse)}$	±200	mA	PW ≦ 10 ms, Duty Cycle ≦ 50 %
Total Power Dissipation	P_T	150	mW	
Channel Temperature	T_{ch}	150	°C	
Operating Temperature	T_{opt}	−55 to +80	°C	
Storage Temperature	T_{stg}	−55 to +150	°C	

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ELECTRICAL CHARACTERISTICS (T_a = 25 °C)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Cut-off Current	I_{DSS}			10	μA	V_{DS} = 30 V, V_{GS} = 0
Gate Leakage Current	I_{GSS}			±5.0	μA	V_{GS} = ±3.0 V, V_{DS} = 0
Gate Cut-off Voltage	$V_{GS(off)}$	0.9	1.2	1.5	V	V_{DS} = 3.0 V, I_D = 1.0 μA
Forward Transfer Admittance	$\|y_{fs}\|$	20	40		mS	V_{DS} = 3.0 V, I_D = 10 mA
Drain to Source On-State Resistance	$R_{DS(on)1}$		25	45	Ω	V_{GS} = 2.5 V, I_D = 10 mA
Drain to Source On-State Resistance	$R_{DS(on)2}$		18	25	Ω	V_{GS} = 4.0 V, I_D = 10 mA
Input Capacitance	C_{iss}		15		pF	V_{DS} = 3.0 V, V_{GS} = 0, f = 1 MHz
Output Capacitance	C_{oss}		10		pF	
Feedback Capacitance	C_{rss}		1.5		pF	
Turn-On Delay Time	$t_{d(on)}$		50		ns	V_{DD} = 3.0 V, I_D = 10 mA $V_{GS(on)}$ = 3 V, R_G = 10 Ω R_L = 300 Ω
Rise Time	t_r		23		ns	
Turn-Off Delay Time	$t_{d(off)}$		34		ns	
Fall Time	t_f		43		ns	

SWITCHING TIME MEASUREMENT CIRCUIT AND CONDITIONS