DATA SHEET

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MOS FIELD EFFECT TRANSISTOR 2SK2158

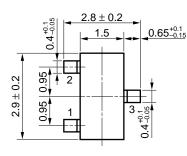
N-CHANNEL MOS FET FOR HIGH-SPEED SWITCHING

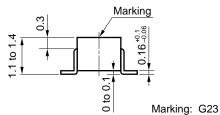
The 2SK2158 is an N-channel vertical type MOS FET featuring an operating voltage as low as 1.5 V. Because it can be driven on a low voltage and it is not necessary to consider driving current, the 2SK2158 is suitable for use in low-voltage portable systems such as headphone stereo sets and camcorders.

FEATURES

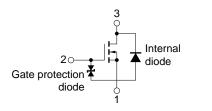
- Capable of drive gate with 1.5 V
- Because of high input impedance, there is no need to consider driving current.
- Bias resistance can be omitted, enabling reduction in total number of parts.

PACKAGE DIMENSIONS (in millimeters)





EQUIVALENT CIRCUIT



PIN CONNECTION

1. Source (S) 2. Gate (G)

2. Gate (G) 3. Drain (D)

5. Diairi (D)

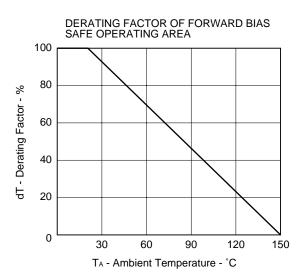
PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS	UNIT
Drain to Source Voltage	Vdss	V _{GS} = 0	50	V
Gate to Source Voltage	Vgss	V _{DS} = 0	±7.0	V
Drain Current (DC)	D(DC)		±0.1	А
Drain Current (pulse)	D(pulse)	PW ≤ 10 ms,	±0.2	А
		Duty Cycle \leq 50 %		
Total Power Dissipation	Р⊤		200	mW
Channel Temperature	Tch		150	°C
Storage Temperature	Tstg		-55 to +150	°C

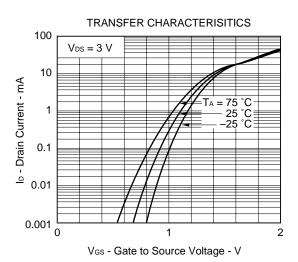
ABSOLUTE MAXIMUM RATINGS (TA = 25 $^{\circ}$ C)

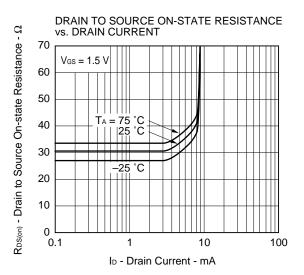
ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

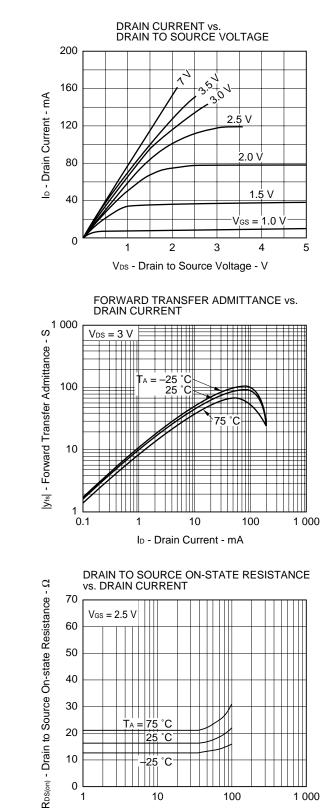
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Drain Cut-off Current	loss	$V_{DS} = 50 V, V_{GS} = 0$			1.0	μΑ
Gate Leakage Current	lgss	$V_{\text{GS}} = \pm 7.0 \text{ V}, \text{ V}_{\text{DS}} = 0$			±3.0	μΑ
Gate Cut-off Voltage	VGS(off)	$V_{DS} = 3 V$, $I_D = 1.0 \mu A$	0.5	0.7	1.1	V
Forward Transfer Admittance	y _{fs}	$V_{DS} = 3 V, I_{D} = 10 mA$	20			mS
Drain to Source On-state Resistance	RDS(on)1	$V_{GS} = 1.5 \text{ V}, \text{ ID} = 1.0 \text{ mA}$		32	50	Ω
Drain to Source On-state Resistance	RDS(on)2	$V_{GS} = 2.5 \text{ V}, \text{ ID} = 10 \text{ mA}$		16	20	Ω
Drain to Source On-state Resistance	RDS(on)3	$V_{GS} = 4.0 \text{ V}, \text{ ID} = 10 \text{ mA}$		12	15	Ω
Input Capacitance	Ciss	$V_{DS} = 3 V, V_{GS} = 0$		6		pF
Output Capacitance	Coss	f = 1.0 MHz		8		pF
Reverse Transfer Capacitance	Crss			1		pF
Turn-On Delay Time	td(on)	$V_{DD} = 3 V$, $I_D = 20 mA$		9		ns
Rise Time	tr	$V_{GS(on)} = 3 V, R_G = 10 \Omega$		48		ns
Turn-Off Delay Time	td(off)	RL = 150 Ω		21		ns
Fall Time	tr			31		ns

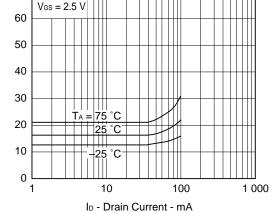


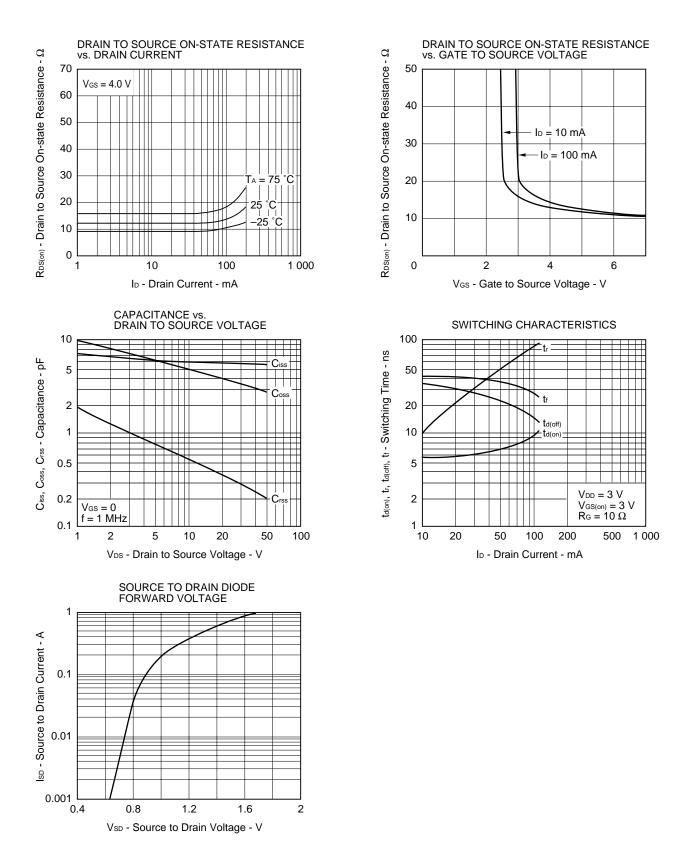












REFERENCE

Document Name	Document No.		
NEC semiconductor device reliability/quality control system	TEI-1202		
Quality grade on NEC semiconductor devices	IEI-1209		
Semiconductor device mounting technology manual	C10535E		
Guide to quality assurance for semiconductor devices	MEI-1202		
Semiconductor selection guide	X10679E		

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Special: Transportation equipment (automobiles, trains, ships, etc.), traffic control systems, anti-disaster systems, anti-crime systems, safety equipment and medical equipment (not specifically designed for life support)

Specific: Aircrafts, aerospace equipment, submersible repeaters, nuclear reactor control systems, life support systems or medical equipment for life support, etc.

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Anti-radioactive design is not implemented in this product.

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