

MOS FIELD EFFECT TRANSISTOR  
**2SJ463A**

P-CHANNEL MOS FIELD EFFECT TRANSISTOR  
 FOR HIGH SPEED SWITCHING

**DESCRIPTION**

The 2SJ463A is a switching device which can be driven directly by a 2.5 V power source.

The 2SJ463A has excellent switching characteristics, and is suitable for use as a high-speed switching device in digital circuits.

**FEATURES**

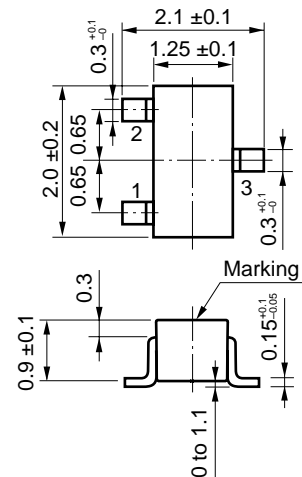
- Can be driven by a 2.5 V power source.
- Low Gate Cut-off Voltage.

**ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25 °C)**

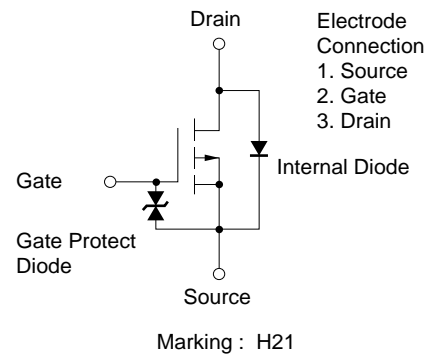
Drain to Source Voltage	V <sub>DSS</sub>	-30	V
Gate to Source Voltage	V <sub>GSS</sub>	±20	V
Drain Current (DC)	I <sub>D(DC)</sub>	±0.1	A
Drain Current (pulse)	I <sub>D(pulse)</sub>	±0.4 <b>Note</b>	A
Total Power Dissipation	P <sub>T</sub>	150	mW
Channel Temperature	T <sub>ch</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55 to +150	°C

**Note** PW ≤ 10 μs, Duty Cycle ≤ 1 %

**Package Drawings (unit: mm)**



**Equivalent Circuit**

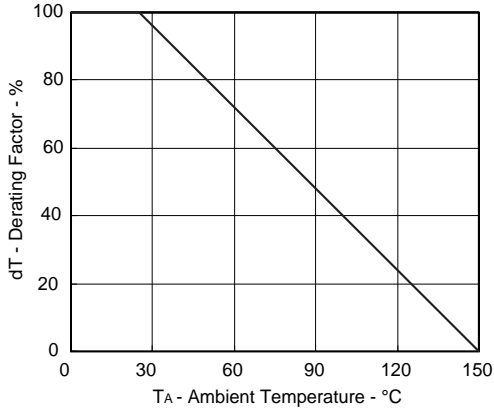


The diode connected between the gate and source of the transistor serves as a protector against ESD. When this device is actually used, an additional protection circuit is externally required if a voltage exceeding the rated voltage may be applied to this device.

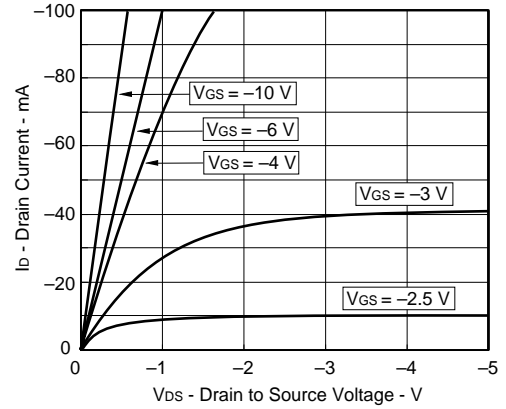
**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25 °C)**

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITIONS
Drain Cut-off Current	I <sub>DSS</sub>			-1	μA	V <sub>DS</sub> = -30 V, V <sub>GS</sub> = 0
Gate Leakage Current	I <sub>GSS</sub>			±10	μA	V <sub>GS</sub> = ±20 V, V <sub>DS</sub> = 0
Gate Cut-off Voltage	V <sub>GS(off)</sub>	-1.0	-1.4	-1.7	V	V <sub>DS</sub> = -3 V, I <sub>D</sub> = -10 μA
Forward Transfer Admittance	y <sub>fs</sub>	20			mS	V <sub>DS</sub> = -3 V, I <sub>D</sub> = -10 mA
Drain to Source On-State Resistance	R <sub>DS(on)1</sub>		23	60	Ω	V <sub>GS</sub> = -2.5 V, I <sub>D</sub> = -1 mA
Drain to Source On-State Resistance	R <sub>DS(on)2</sub>		11	23	Ω	V <sub>GS</sub> = -4 V, I <sub>D</sub> = -10 mA
Drain to Source On-State Resistance	R <sub>DS(on)3</sub>		6	13	Ω	V <sub>GS</sub> = -10 V, I <sub>D</sub> = -10 mA
Input Capacitance	C <sub>iss</sub>		5		pF	V <sub>DS</sub> = -3 V
Output Capacitance	C <sub>oss</sub>		15		pF	V <sub>GS</sub> = 0
Reverse Transfer Capacitance	C <sub>rss</sub>		1.3		pF	f = 1 MHz
Turn-on Delay Time	t <sub>d(on)</sub>		140		ns	V <sub>DD</sub> = -3 V, I <sub>D</sub> = -10 mA
Rise Time	t <sub>r</sub>		330		ns	V <sub>GS(on)</sub> = -4 V, R <sub>G</sub> = 10 Ω
Turn-off Delay Time	t <sub>d(off)</sub>		220		ns	R <sub>L</sub> = 300 Ω
Fall Time	t <sub>f</sub>		320		ns	

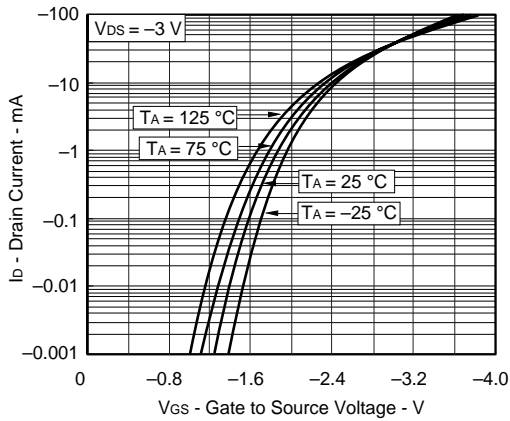
DERATING FACTOR OF FORWARD BIAS SAFE OPERATING AREA



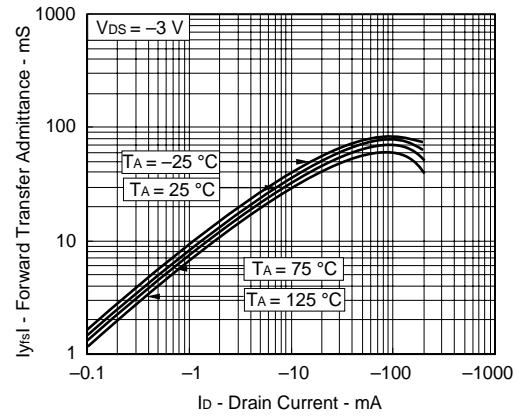
DRAIN CURRENT vs. DRAIN TO SOURCE VOLTAGE



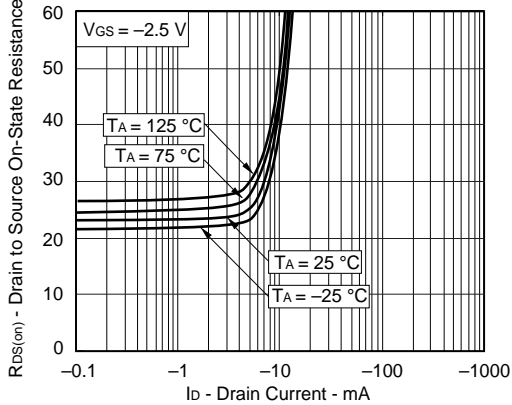
TRANSFER CHARACTERISTICS



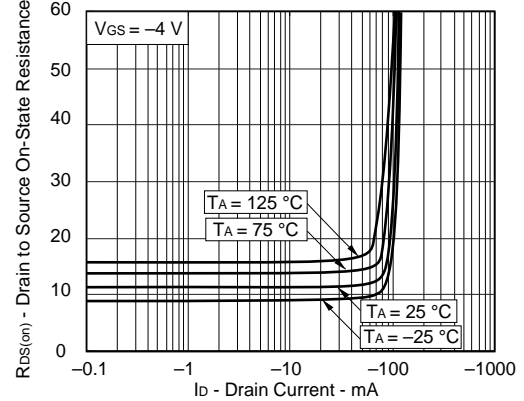
FORWARD TRANSFER ADMITTANCE vs. DRAIN CURRENT

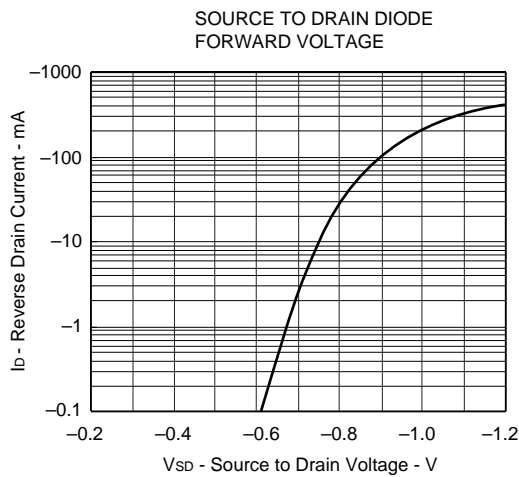
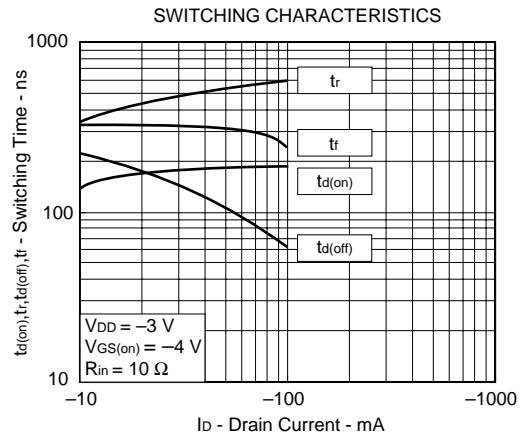
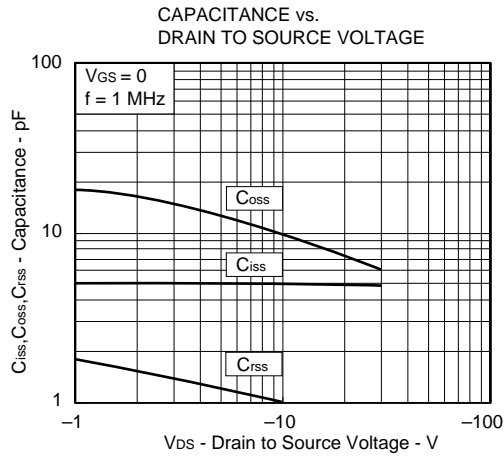
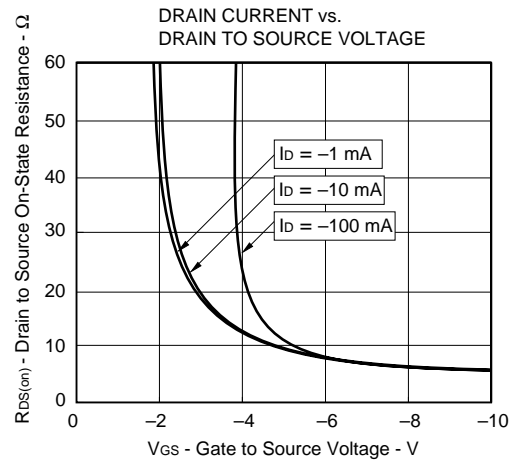
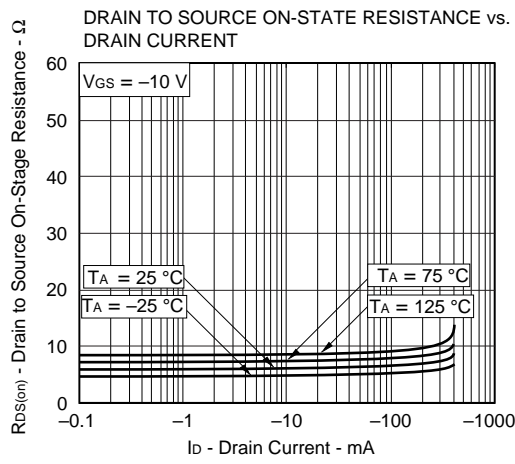


DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE vs. DRAIN CURRENT





**REFERENCE**

Document Name	Document No.
NEC semiconductor device reliability/quality control system	TEI-1202
Quality grade on NEC semiconductor devices	C11531E
Semiconductor device mounting technology manual	C10535E
Guide to quality assurance for semiconductor devices	MEI-1202
Semiconductor selection guide	X10679E

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Anti-radioactive design is not implemented in this product.