DATA SHEET

NEC

JUNCTION FIELD EFFECT TRANSISTOR
2SK508

HIGH FREQUENCY AMPLIFIER
N-CHANNEL SILICON JUNCTION FIELD EFFECT TRANSISTOR

<R> DESCRIPTION

The 2SK508 is low input capacitance and High forward transfer admittance, it is suitable for AM tuner, wireless installation and cordless telephone.

<R> FEATURES

- Low input capacitance

  C_{iss} = 4.8 pF TYP. (V_{DS} = 5.0 V, I_D = 10 mA, f = 1.0 MHz)

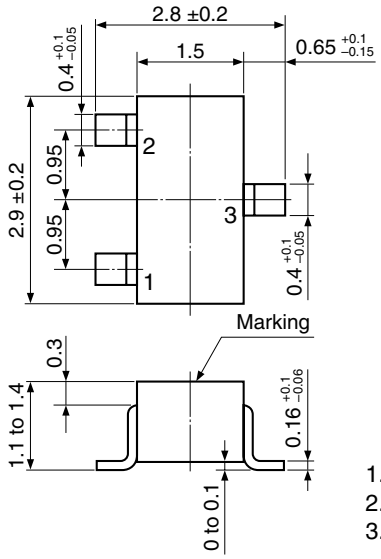
- High forward transfer admittance

  $|y_{fs}|^2$ = 26 mS TYP. (V_{DS} = 5.0 V, V_{GS} = 0 V, f = 1.0 kHz)

<R> ORDERING INFORMATION

PART NUMBER	PACKAGE
2SK508	SC-59 (Mini Mold)

<R> PACKAGE DRAWING (Unit: mm)



1. Drain
2. Source
3. Gate

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C)

Gate to Drain Voltage	V_{GDO}	−15	V
Gate to Source Voltage	V_{GSO}	−15	V
Drain to Source Voltage (V_{GS} = −4.0 V)	V_{DSX}	15	V
Drain Current (DC)	I_D	50	mA
Gate Current (DC)	I_G	5	mA
Total Power Dissipation	P_T	200	mW
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	−55 to +150	°C

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The mark <R> shows major revised points.
The revised points can be easily searched by copying an "<R>" in the PDF file and specifying it in the "Find what:" field.

ELECTRICAL CHARACTERISTICS (T_A = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Gate Cut-off Current	I_{GSS}	V_{GS} = −10 V, V_{DS} = 0 V			−1.0	nA
Zero Gate Voltage Drain Current [Note]	I_{DSS}	V_{DS} = 5.0 V, V_{GS} = 0 V	10	20	50	mA
Gate to Source Cut-off Voltage	$V_{GS(off)}$	V_{DS} = 5.0 V, I_D = 10 μA	−0.6	−1.4	−3.5	V
Forward Transfer Admittance [Note]	$\|y_{fs}\|1$	V_{DS} = 5.0 V, I_D = 10 mA, f = 1.0 kHz	14	19		mS
	$\|y_{fs}\|2$	V_{DS} = 5.0 V, V_{GS} = 0 V, f = 1.0 kHz	14	26		mS
Input Capacitance	C_{iss}	V_{DS} = 5.0 V, I_D = 10 mA, f = 1.0 MHz		4.8		pF
Feedback Capacitance	C_{rss}	V_{DS} = 5.0 V, I_D = 10 mA, f = 1.0 MHz		1.6		pF

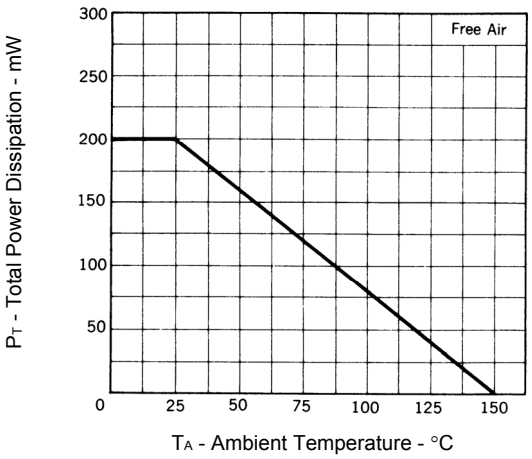
Note Pulsed: PW ≤ 1 ms, Duty Cycle ≤ 1%

I_{DSS} CLASSIFICATION

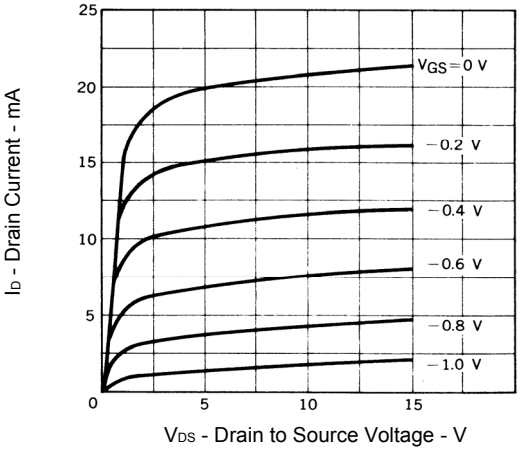
MARKING	K51	K52	K53
I_{DSS} (mA)	10 to 20	15 to 30	25 to 50

TYPICAL CHARACTERISTICS (T_A = 25°C)

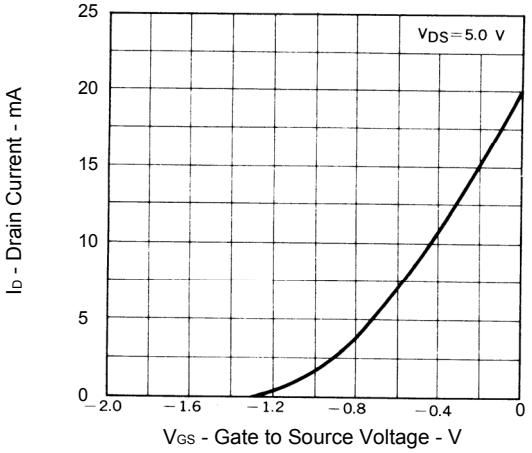
TOTAL POWER DISSIPATION vs.
AMBIENT TEMPERATURE



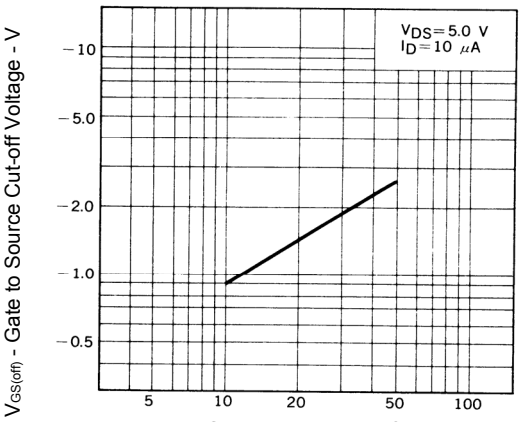
DRAIN CURRENT vs.
DRAIN TO SOURCE VOLTAGE



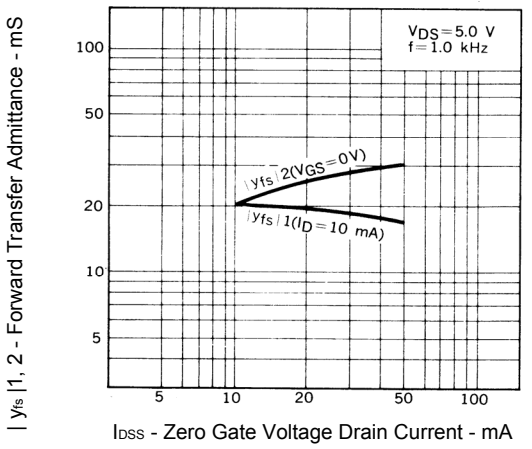
DRAIN CURRENT vs.
GATE TO SOURCE VOLTAGE



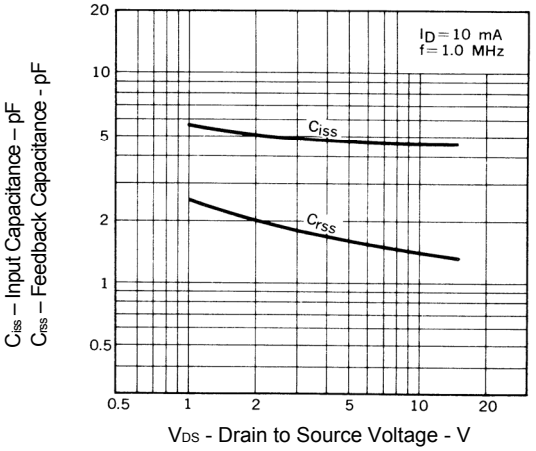
GATE TO SOURCE CUT-OFF VOLTAGE vs.
ZERO GATE VOLTAGE DRAIN CURRENT



FORWARD TRANSFER ADMITTANCE vs.
ZERO GATE VOLTAGE DRAIN CURRENT



INPUT AND FEEDBACK CAPACITANCE vs.
DRAIN TO SOURCE VOLTAGE



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