

3SK144

Silicon N-Channel 4-pin MOS FET

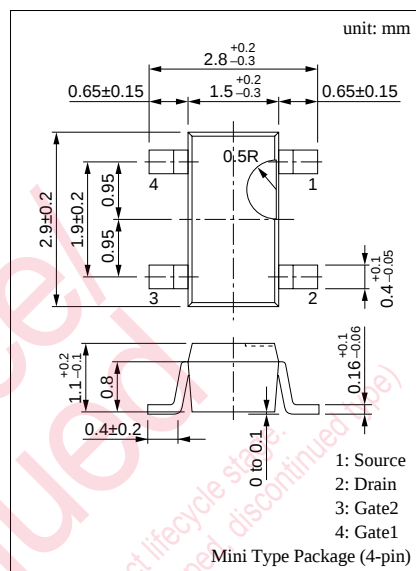
For VHF high-gain and low-noise amplification

■ Features

- Low noise-figure (NF)
- Large power gain PG
- Mini-type package, allowing downsizing of the sets and automatic insertion through the tape/magazine packing.

■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DS}	15	V
Gate 1 to Source voltage	V_{G1S}	± 8	V
Gate 2 to Source voltage	V_{G2S}	± 8	V
Drain current	I_D	± 30	mA
Allowable power dissipation	P_D	150	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C



Marking Symbol: 3E

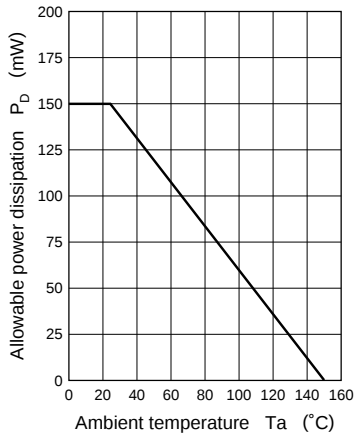
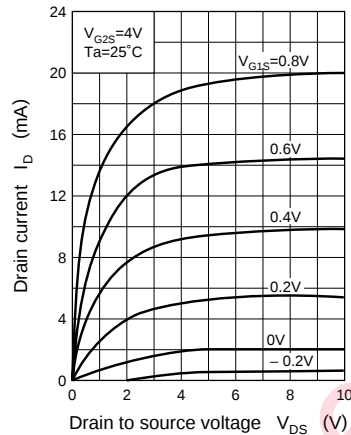
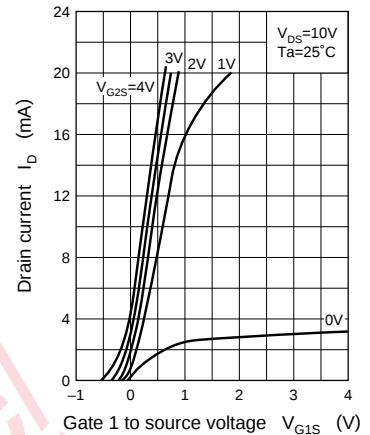
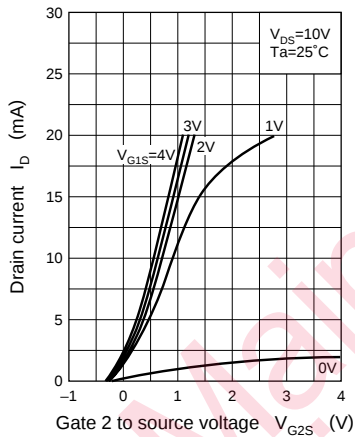
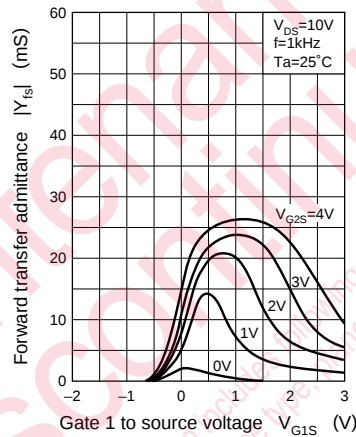
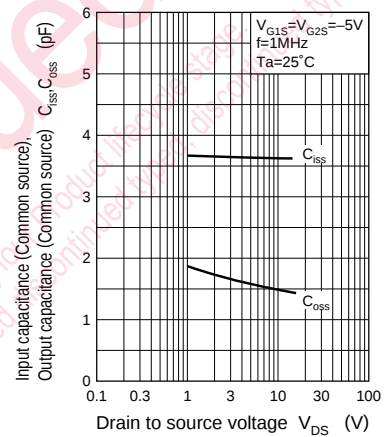
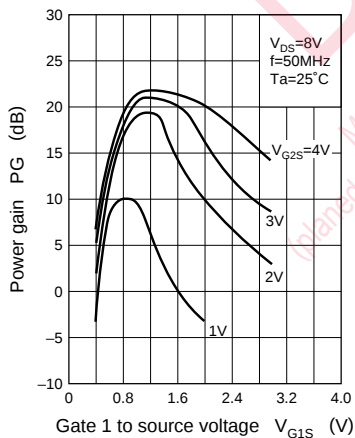
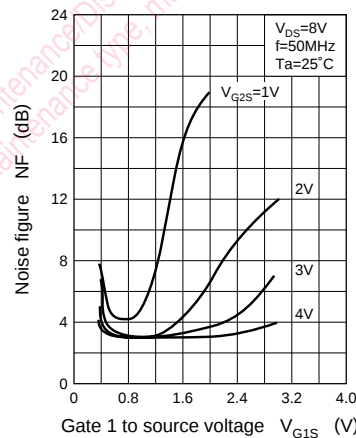
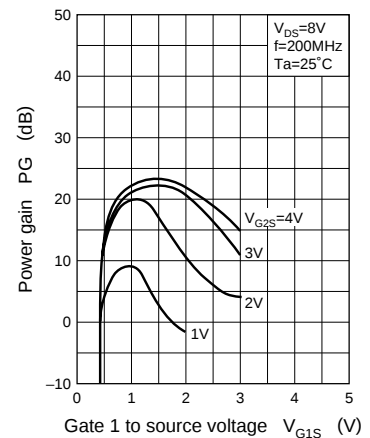
■ Electrical Characteristics (Ta = 25°C)

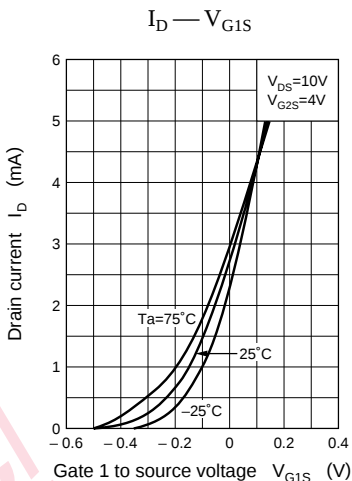
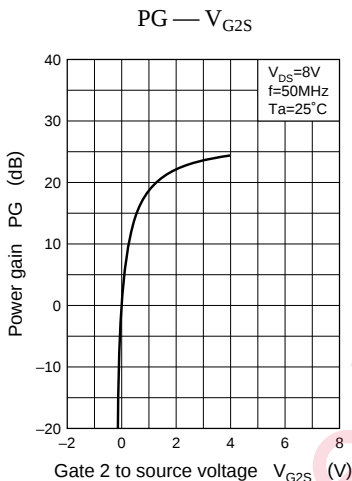
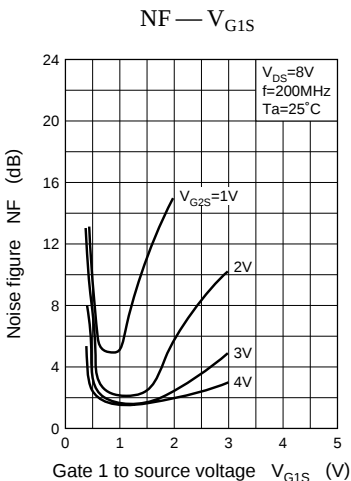
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain current	I_{DSS}^{*2}	$V_{DS} = 10V, V_{G1S} = 0, V_{G2S} = 4V$	0.8		15	mA
Gate 1 cut-off current	I_{G1SS}	$V_{DS} = V_{G2S} = 0, V_{G1S} = \pm 8V$			± 20	nA
Gate 2 cut-off current	I_{G2SS}	$V_{DS} = V_{G1S} = 0, V_{G2S} = \pm 8V$			± 20	nA
Drain to Source voltage	V_{DSX}	$I_D = 50\mu A, V_{G1S} = -5V, V_{G2S} = 0, R_D = 56\Omega, R_S = 270\Omega$	15			V
Gate 1 to Source cut-off voltage	V_{G1SC}	$V_{DS} = 10V, V_{G2S} = 4V, I_D = 100\mu A$		-0.6	-3	V
Gate 2 to Source cut-off voltage	V_{G2SC}	$V_{DS} = 10V, V_{G1S} = 4V, I_D = 100\mu A$		-0.4	-3	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10V, I_D = 10mA, V_{G2S} = 4V, f = 1kHz$	17	23		mS
Input capacitance (Common Source)	C_{iss}	$V_{DS} = 10V, V_{G1S} = V_{G2S} = -5V$ $f = 1MHz$	2.7	3.8	5.3	pF
Output capacitance (Common Source)	C_{oss}		1	1.4	2.2	pF
Reverse transfer capacitance (Common Source)	C_{rss}			0.02		pF
Power gain	PG_1	$V_{DS} = 8V, I_D = 8mA, V_{G2S} = 3V$ $f = 195 \text{ to } 205MHz \text{ (Sweep)}$	20	23	25	dB
	PG_2	$V_{DS} = 8V, I_D = 8mA, V_{G2S} = 3V$ $f = 45 \text{ to } 55MHz \text{ (Sweep)}$	20	23	25	dB
Noise figure	NF_1^{*1}	$V_{DS} = 8V, I_D = 8mA, V_{G2S} = 3V$ $f = 195 \text{ to } 205MHz \text{ (Sweep)}$		2	3.2	dB
	NF_2^{*1}	$V_{DS} = 8V, I_D = 8mA, V_{G2S} = 3V$ $f = 45 \text{ to } 55MHz \text{ (Sweep)}$		2.8	3.2	dB

*1 Min value of NF at max PG.

*2 I_{DSS} rank classification

Rank	Q	R
I_{DSS} (mA)	0.8 to 7	4 to 15
Marking Symbol	3EQ	3ER

$P_D - T_a$  $I_D - V_{DS}$  $I_D - V_{G1S}$  $I_D - V_{G2S}$  $|Y_{fs}| - V_{G1S}$  $C_{iss}, C_{oss} - V_{DS}$  $PG - V_{G1S}$  $NF - V_{G1S}$  $PG - V_{G1S}$ 



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