

3SK143

Silicon N-Channel 4-pin MOS FET

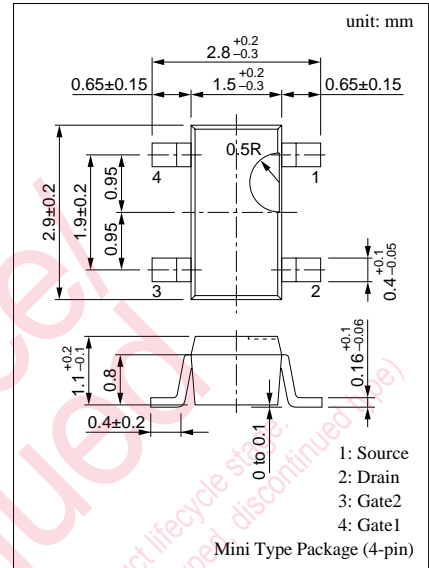
For UHF high-gain and low-noise amplification

■ 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	200	mW
Channel temperature	T_{ch}	150	°C
Storage temperature	T_{stg}	-55 to +150	°C



Marking Symbol: 3D

■ Electrical Characteristics (Ta = 25°C)

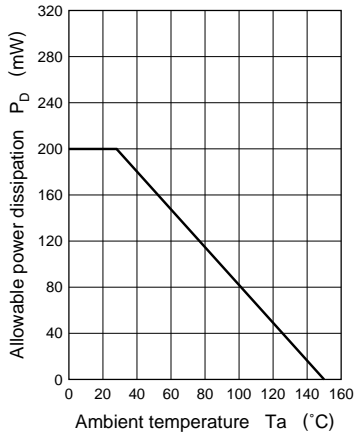
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	I_{DSS}^{*2}	$V_{DS} = 10V, V_{GS} = 0, V_{G2S} = 4V$	0.2		13	mA
Gate 1 cut-off current	I_{G1SS}	$V_{DS} = V_{G2S} = 0, V_{G1S} = \pm 8V$			± 20	nA
Gate 2 cut-off current	I_{G2SS}	$V_{DS} = V_{G1S} = 0, V_{G2S} = \pm 8V$			± 20	nA
Drain to Source voltage	V_{DSX}^{*1}	$I_D = 100\mu A, V_{G1S} = -5V, V_{G2S} = 0$	15			V
Gate 1 to Source cut-off voltage	V_{G1SC}	$V_{DS} = 10V, V_{G2S} = 4V, I_D = 100\mu A$	-3		0	V
Gate 2 to Source cut-off voltage	V_{G2SC}	$V_{DS} = 10V, V_{G2S} = 0, I_D = 100\mu A$	-1		2	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 10V, I_D = 10mA, V_{G2S} = 4V, f = 1kHz$	12	20	28	mS
Input capacitance (Common Source)	C_{iss}	$V_{DS} = 10V, V_{G1S} = V_{G2S} = -5V$ $f = 1MHz$	1.4	1.9	2.4	pF
Output capacitance (Common Source)	C_{oss}		0.6	0.9	1.2	pF
Reverse transfer capacitance (Common Source)	C_{rss}			0.02		pF
Power gain	PG	$V_{DS} = 8V, I_D = 8mA, V_{G2S} = 3V$	13	15		dB
Noise figure	NF	$f = 800MHz$			5	dB

*1 $R_D = 56\Omega$ and $R_S = 270\Omega$

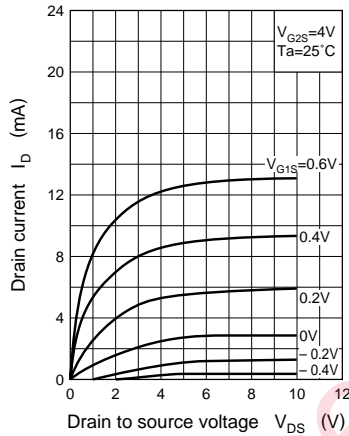
*2 I_{DSS} rank classification

Rank	O	P	Q
I_{DSS} (mA)	0.2 to 1.5	0.5 to 4	3 to 13
Marking Symbol	3DO	3DP	3DQ

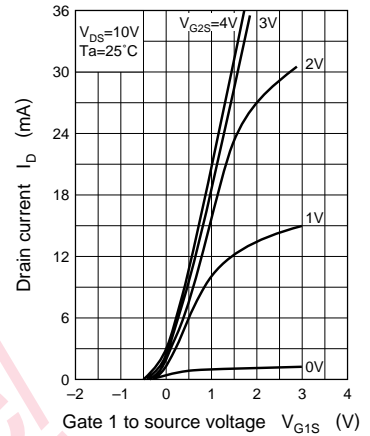
$P_D - T_a$



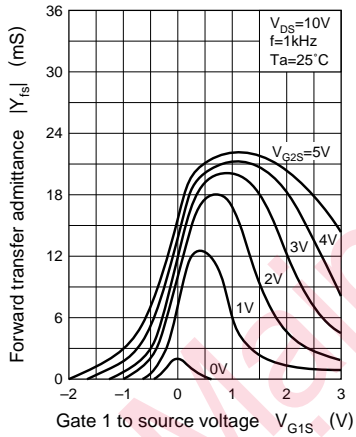
$I_D - V_{DS}$



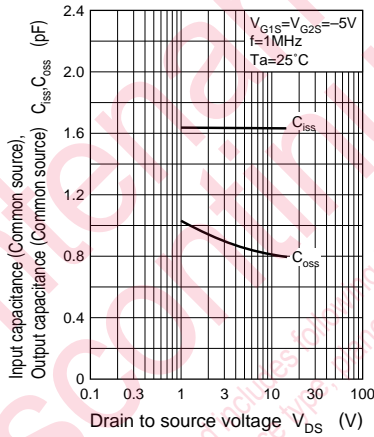
$I_D - V_{G1S}$



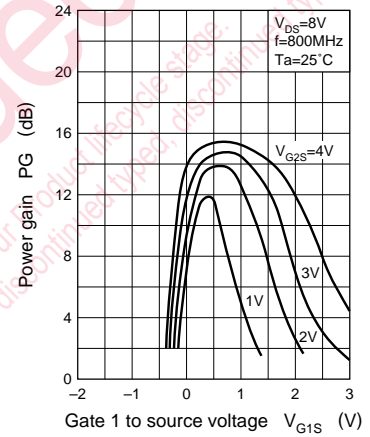
$|Y_{fs}| - V_{G1S}$



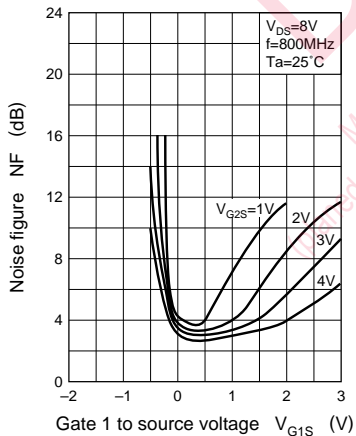
$C_{iss}, C_{oss} - V_{DS}$



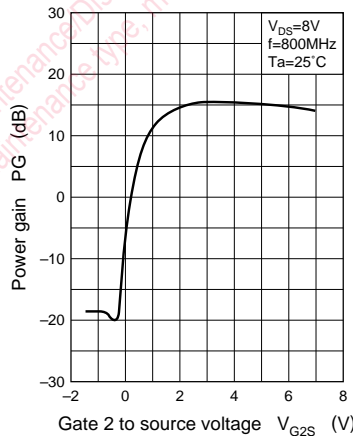
$PG - V_{G1S}$



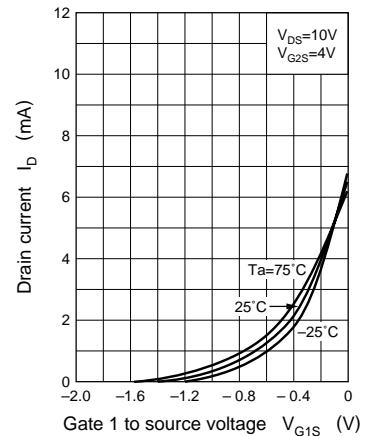
$NF - V_{G1S}$



$PG - V_{G2S}$



$I_D - V_{G1S}$



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