

# 3SK273

## GaAs N-Channel MES FET

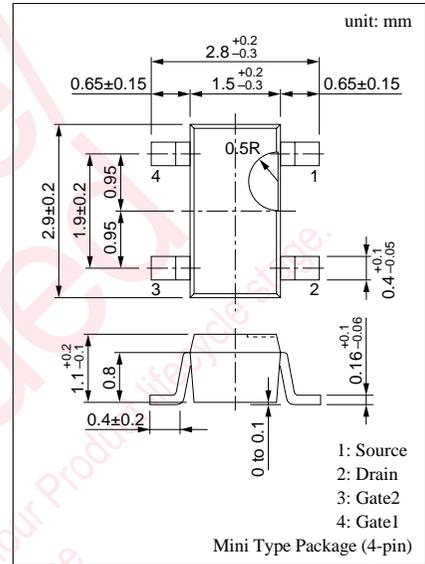
For VHF-UHF amplification

### ■ 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	$V_{DS}$	13	V
Gate 1 to Source voltage	$V_{G1S}$	-6	V
Gate 2 to Source voltage	$V_{G2S}$	-6	V
Drain current	$I_D$	50	mA
Gate 1 current	$I_{G1}$	1	mA
Gate 2 current	$I_{G2}$	1	mA
Allowable power dissipation	$P_D$	200	mW
Channel temperature	$T_{ch}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C



Marking Symbol (Example): ET

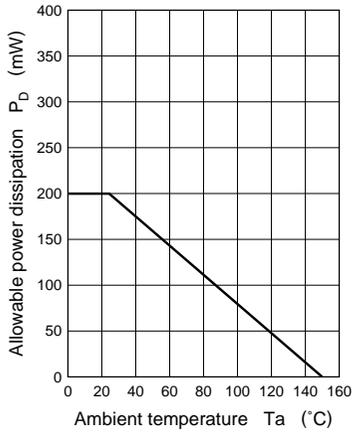
### ■ Electrical Characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Drain to Source cut-off current	$I_{DSS}^*$	$V_{DS} = 5V, V_{G1S} = 0, V_{G2S} = 0$	8.5		35	mA
Gate 2 to Drain current	$I_{G2DO}$	$V_{DD} = -13V (G1, S = Open)$			50	μA
Gate 1 cut-off current	$I_{G1SS}$	$V_{DS} = V_{G2S} = 0, V_{G1S} = -6V$			-20	μA
Gate 2 cut-off current	$I_{G2SS}$	$V_{DS} = V_{G1S} = 0, V_{G2S} = -6V$			-20	μA
Drain cut-off current	$I_{DSX}$	$V_{DS} = 13V, V_{G1S} = -3.5V, V_{G2S} = 0$			50	μA
Gate 1 to Source cut-off voltage	$V_{G1SC}$	$V_{DS} = 5V, V_{G2S} = 0, I_D = 200\mu A$			-3.5	V
Gate 2 to Source cut-off voltage	$V_{G2SC}$	$V_{DS} = 5V, V_{G1S} = 0, I_D = 200\mu A$			-3.5	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 5V, I_D = 10mA, V_{G2S} = 1.5V, f = 1kHz$	15	20		mS
Input capacitance (Common Source)	$C_{iss}$	$V_{DS} = 5V, V_{G1S} = V_{G2S} = -6V$ $f = 1MHz$		0.4	2	pF
Output capacitance (Common Source)	$C_{oss}$			0.3	1.2	pF
Reverse transfer capacitance (Common Source)	$C_{rss}$			0.02	0.04	pF
Power gain	PG	$V_{DS} = 5V, I_D = 10mA$	13	16		dB
Noise figure	NF	$V_{G2S} = 1.5V, f = 800MHz$		1.8	2.8	dB
Gain reduction	$G_R$	$V_{DS} = 5V, V_{AGC} = 1.5V/-3.5V, f = 800MHz$	37	45		dB

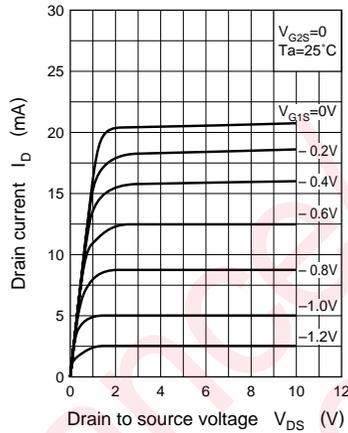
\*  $I_{DSS}$  rank classification

Rank	P	Q	R	R
$I_{DSS}$ (mA)	8.5 to 17	15 to 21	19 to 30	25 to 35
Marking Symbol	ETP	ETQ	ETR	ETS

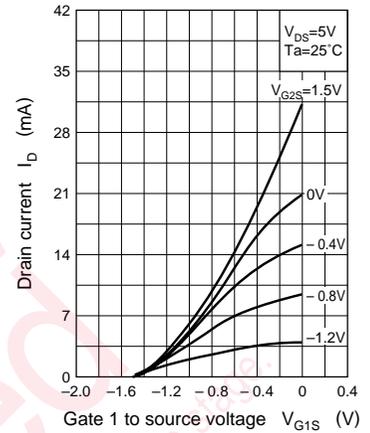
$P_D - T_a$



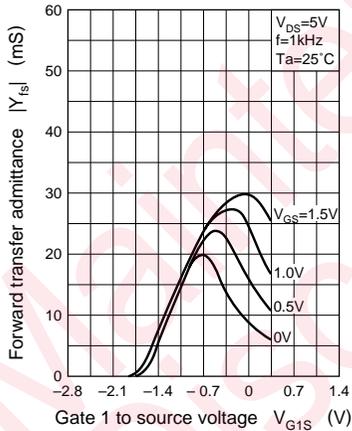
$I_D - V_{DS}$



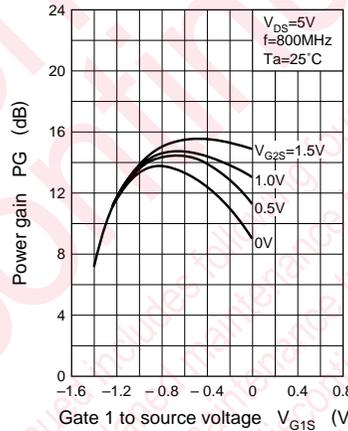
$I_D - V_{G1S}$



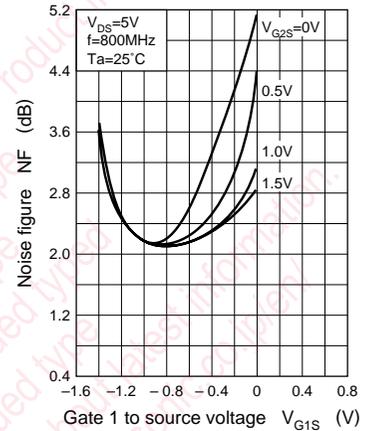
$|Y_{fs}| - V_{G1S}$



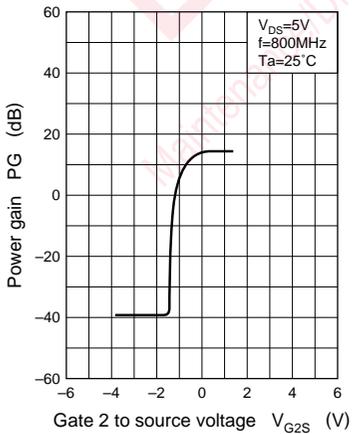
$PG - V_{G1S}$



$NF - V_{G1S}$



$PG - V_{G2S}$



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