

3SK142

Silicon N Channel 4-pole MOS Type

For UHF high-gain low-noise amplification

■ Features

- Low noise figure NF
- Large power gain PG
- Cross pack package

■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	15	V
Gate 1-Source Voltage	V_{G1S}	± 8	V
Gate 2-Source Voltage	V_{G2S}	± 8	V
Drain Current	I_D	30	mA
Power Dissipation	P_D	250	mW
Channel Temperature	T_{ch}	135	°C
Storage Temperature	T_{stg}	-55 ~ +135	°C

■ Electrical Characteristics (Ta=25°C)

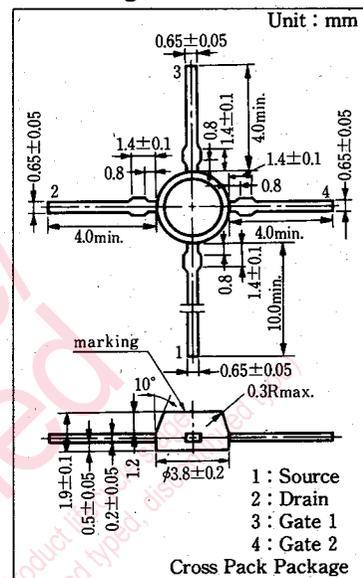
Item	Symbol	Condition	min.	typ.	max.	Unit
Drain Current	I_{DSS}^{*2}	$V_{DS}=10\text{ V}, V_{G1S}=0, V_{G2S}=4\text{ V}$	0.5	5	13	mA
Gate 1 Cutoff Current	I_{G1SS}	$V_{DS}=V_{G2S}=0, V_{G1S}=\pm 8\text{ V}$			± 20	nA
Gate 2 Cutoff Current	I_{G2SS}	$V_{DS}=V_{G1S}=0, V_{G2S}=\pm 8\text{ V}$			± 20	nA
Drain-Source Voltage	V_{DSX}^{*1}	$I_D=100\ \mu\text{A}, V_{G1S}=-5\text{ V}, V_{G2S}=0$	15			V
Gate 1 Source Cutoff Current	V_{G1SC}	$V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, I_D=100\ \mu\text{A}$	0	-0.8	-3.0	V
Gate 2 Source Cutoff Current	V_{G2SC}	$V_{DS}=10\text{ V}, V_{G1S}=0, I_D=100\ \mu\text{A}$	+0.5	-0.3	-1.0	V
Forward Transfer Admittance (Common Source)	$ Y_{fs} $	$V_{DS}=10\text{ V}, V_{G2S}=4\text{ V}, I_D=10\text{ mA}, f=1\text{ kHz}$	12	20	28	mS
Input Capacitance	C_{iss}	$V_{DS}=10\text{ V}, V_{G1S}=V_{G2S}=-5\text{ V}, f=1\text{ MHz}$	1.4	1.9	2.4	pF
Output Capacitance	C_{oss}		0.6	0.9	1.2	pF
Small-Signal Reverse Transfer Capacitance	C_{rss}			0.02		pF
Power Gain	PG^{*3}	$V_{DS}=8\text{ V}, I_D=8\text{ mA},$	11.5	14	17	dB
Noise Figure	NF^{*3}	$V_{G2S}=3\text{ V}, f=800\text{ MHz}$		3.5	4.5	dB
Gain Reduction	G_R	$P_G\text{ max}, V_{DS}=8\text{ V}, V_{G2S}=4\text{ V}$ $I_D=8\text{ mA}, f=900\text{ MHz}$ Input : < 80 dB μ , $V_{DS}=10\text{ V},$ $V_{G2S}=-0.3\text{ V}, V_{G1S}=\pm 3.3\text{ V}$		33		dB

*1 $R_D=56\ \Omega, R_S=270\ \Omega$ inserted

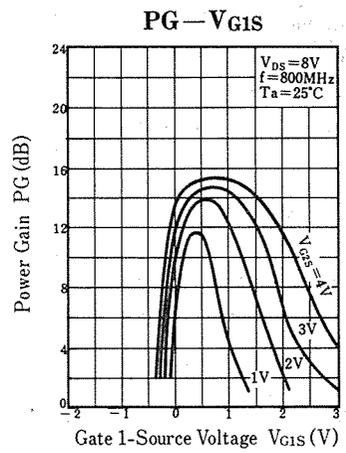
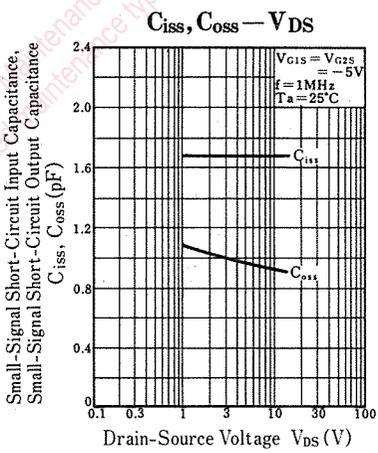
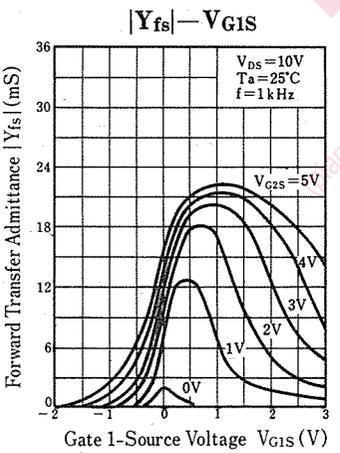
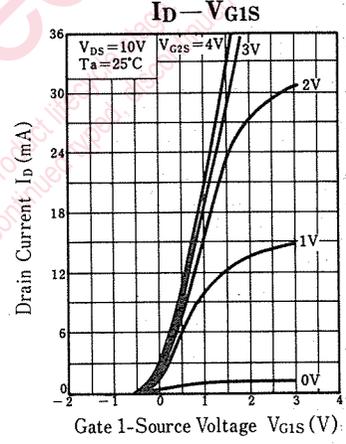
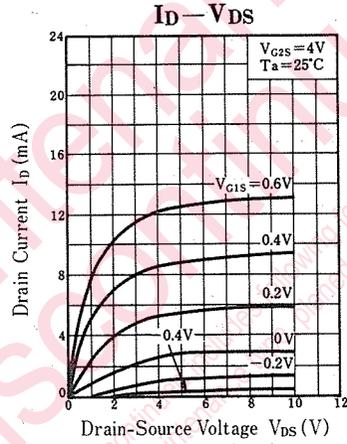
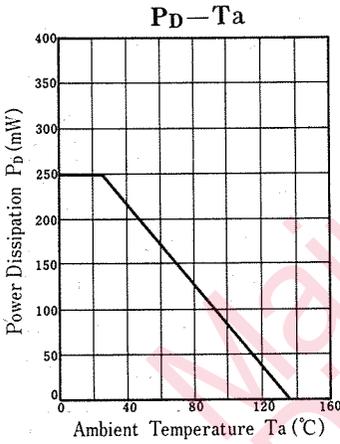
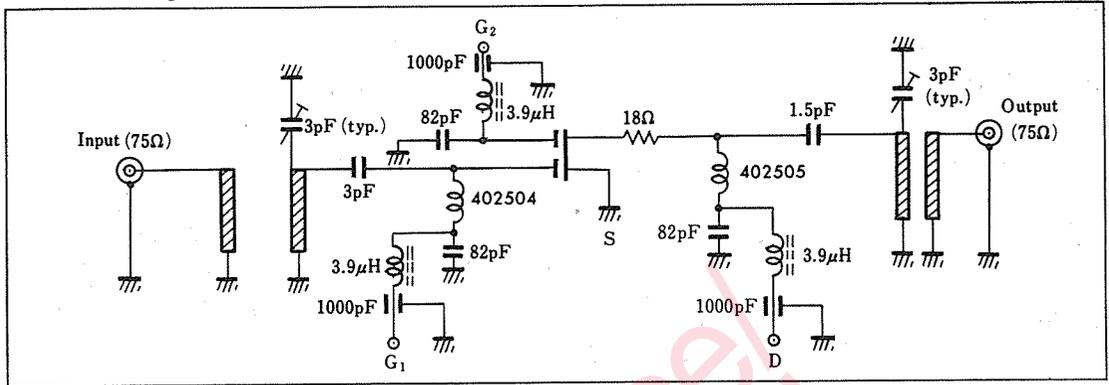
*2 I_{DSS} Ranking

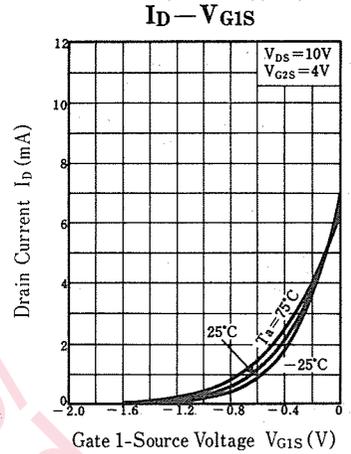
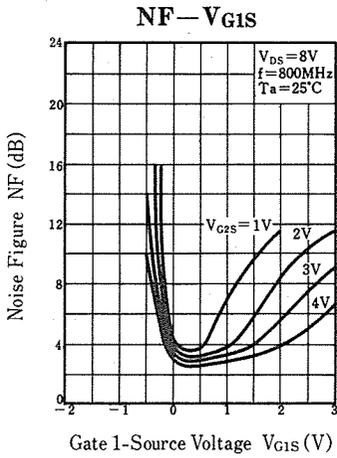
Rank	P	Q
$I_{DSS}(\text{mA})$	0.5~4	3~13

■ Package Dimensions



*3 PG Measuring Circuit





Maintenance/Discontinued

Maintenance/Discontinued includes following four Product lifecycle stage.
(planned maintenance type, maintenance type, planned discontinued type, discontinued type)

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