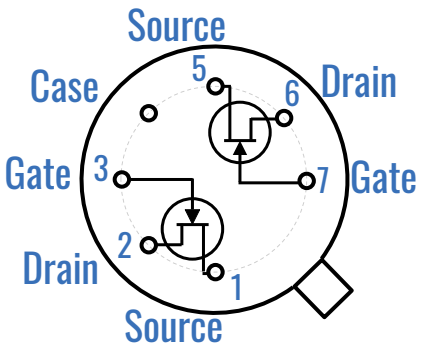
2N5911 | 2N5912

Dual Matched N-Channel JFET - 1

FEATURES

- LOW NOISE: 4.0 NV/√HZ TYPICAL
- LOW LEAKAGE: 10PA TYPICAL
- LOW INPUT CAPACITANCE: 5.0 PF TYPICAL



Bottom View

DESCRIPTION

The -25V 2N5911 and 2N5912 JFET's are targeted for wideband differential amplifiers. Gate leakages are less than 10pA at room temperatures.

The TO-78 package is hermetically sealed and suitable for military applications. Custom specifications, matching, and packaging options are available.

TX, TXV, and S-Level Screening Available - Consult Factory.

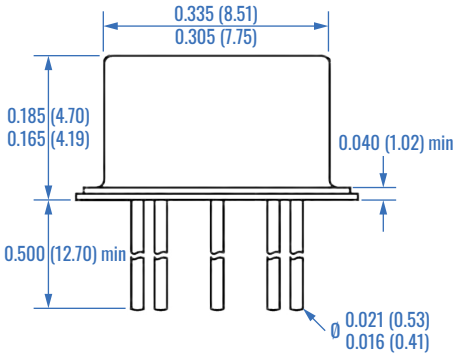
ORDERING GUIDE

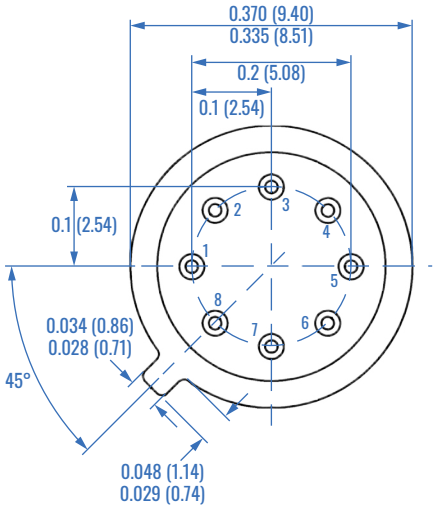
Part Number 2N5911, 2N5912

Description -25V Dual Matched N-Channel JFET

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Reverse Gate Source and Gate Drain Voltage	V_{RGS}	-25	V
Continuous Forward Gate Current	I_{FG}	50	mA
Continuous Device Power Dissipation	P_D	250	mW
Power Derating	P	4.3	mW/°C
Operating Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-65 to 200	°C





STATIC CHARACTERISTICS

Typical @ 25°C unless otherwise noted.

Parameter		Symbol	2N5911		2N5912		Unit
			Min.	Max.	Min.	Max.	
Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = -1µA	$V_{(BR)GSS}$	-25		-25		V
Gate to Source Reverse Current	V_{GS} = -15V, V_{DS} = 0V, T_A = 25°C V_{GS} = -15V, V_{DS} = 0V, T_A = 150°C	I_{GSS}		-100 -250		-100 -250	pA nA
Gate Operating Current	V_{DS} = 10V, I_D = 5mA, T_A = 25°C V_{DS} = 10V, I_D = 5mA, T_A = 125°C	I_G		-100 -100		-100 -100	pA nA
Gate to Source Cutoff Voltage	V_{DS} = 10V, I_G = 1nA	$V_{GS(OFF)}$	-1	-5	-1	-5	V
Gate Source Voltage	V_{DS} = 10V, I_D = 5mA	V_{GS}	-0.3	-4	-0.3	-4	V
Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 10V (Pulsed)	I_{DSS}	7	40	7	40	mA

DYNAMIC CHARACTERISTICS

Typical @ 25°C unless otherwise noted.

Parameter		Symbol	2N5911		2N5912		Unit
			Min.	Max.	Min.	Max.	
Forward Transconductance	V_{DS} = 10V, I_D = 5mA, f = 1kHz V_{DS} = 10V, I_D = 5mA, f = 100MHz	G_{FS}	3000 3000	10000 10000	3000 3000	10000 10000	µS
Output Conductance	V_{DS} = 10V, I_D = 5mA, f = 1kHz V_{DS} = 10V, I_D = 5mA, f = 100MHz	G_{OS}		100 150		100 150	µS
Input Capacitance	V_{DS} = 10V, I_D = 5mA, f = 1MHz	C_{iss}		5		5	pF
Reverse Capacitance	V_{DS} = 10V, I_D = 5mA, f = 1MHz	C_{rss}		1.2		1.2	pF
Noise Figure	V_{DS} = 10V, I_D = 5mA, f = 10Hz, R_G = 100KΩ	NF		1		1	dB
Equivalent Circuit Input Noise Voltage	V_{DS} = 10V, I_D = 5mA, f = 10kHz	e_n		20		20	nV/√Hz
Differential Gate Current	V_{DS} = 10V, I_D = 5mA, T_A = 125°C	$\lvert I_{G1} - I_{G2} \rvert$		20		20	nA
Saturation Drain Current Ratio	V_{DS} = 10V, V_{GS} = 0V	I_{DSS1} / I_{DSS2}	0.95	1	0.95	1	
Differential Gate Source Voltage	V_{DS} = 10V, I_D = 5mA	$\lvert V_{GS1} - V_{GS2} \rvert$		10		15	mV
Differential Gate Source Voltage with Temperature	V_{DS} = 10V, I_D = 5mA, T_A = -55°C, T_B = 25°C V_{DS} = 10V, I_D = 5mA, T_A = 25°C, T_B = 125°C	$\frac{\lvert V_{GS1} - V_{GS2} \rvert}{\Delta T}$		2.5 2		5 4	mV/°C
Transconductance Ratio	VDS = 20V, ID = 200µA, f = 1kHz	g_{fs1}/g_{fs2}	0.95	1	0.95	1	