2N3957 | 2N3958

Dual Matched N-Channel JFET - 1

FEATURES

- TYPICAL NOISE: 6 NV/√HZ
- LOW CISS: 3.5PF TYPICAL
- HIGH INPUT IMPEDANCE
- REPLACEMENT FOR OTHER 2N3957,8 PARTS

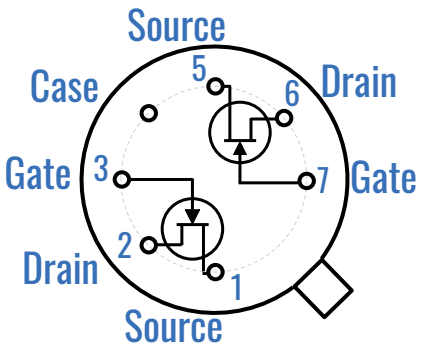
DESCRIPTION

The -50V 2N3957 and 2N3958 matched pair JFET's are targeted for high input impedance applications for mid to high frequency designs.

Gate leakages are typically 10pA at room temperatures. Parts are matched down to 5mV.

The TO-71 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.



Bottom View

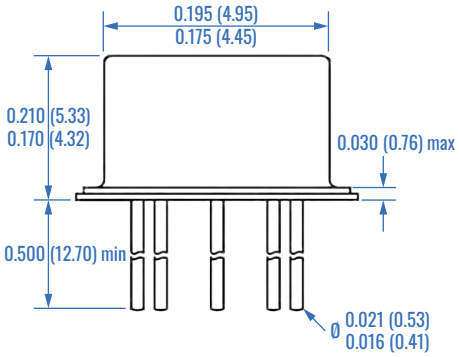
ORDERING GUIDE

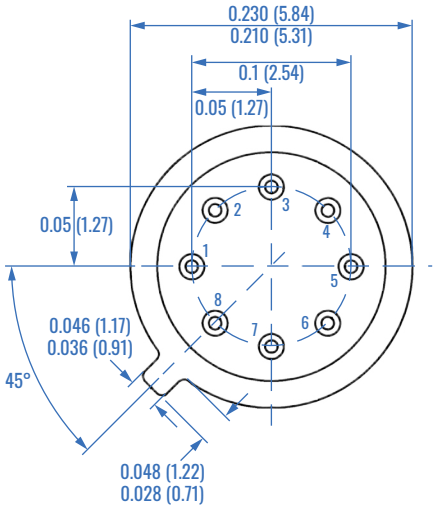
Part Number 2N3957, 2N3958

Description -50V Dual Matched N-Channel JFET

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Reverse Gate Source and Gate Drain Voltage	V_{RGS}	-50	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 175	°C





Solitron DEVICES, INC.

2N3957 | 2N3958
Dual Matched N-Channel JFET - 2

STATIC CHARACTERISTICS
Typical @ 25°C unless otherwise noted.

Parameter		Symbol	2N3957, 2N3958 Min.	Typ.	Max.	Unit
Gate to Source Breakdown Voltage	V_{DS} = 0V, I_G = -1µA	$V_{(BR)GSS}$	-50			V
Gate to Source Reverse Current	V_{GS} = -30V, V_{DS} = 0V, TA = 25°C V_{GS} = -30V, V_{DS} = 0V, TA = 125°C	I_{GSS}			-100 -500	pA nA
Gate Operating Current	V_{DS} = 20V, I_D = 200µA, T_A = 25°C V_{DS} = 20V, I_D = 200µA, T_A = 125°C	I_G			-50 -250	pA nA
Gate to Source Cutoff Voltage	V_{DS} = -20V, I_G = 1nA	$V_{GS(OFF)}$	-1		-4.5	V
Gate Source Voltage	V_{DS} = 20V, I_D = 50µA V_{DS} = 20V, I_D = 200µA	V_{GS}	-0.5		-4.2 -4.0	V
Gate Source Forward Voltage	V_{DS} = 0V, I_G = 1nA	$V_{GS(F)}$			2	V
Drain to Source Saturation Current	V_{GS} = 0V, V_{DS} = 20V (Pulsed)	I_{DSS}	0.5		5	nA

DYNAMIC CHARACTERISTICS
Typical @ 25°C unless otherwise noted.

Parameter			Symbol	2N3957, 2N3958 Min.	Max.	Unit
Forward Transconductance	V_{DS} = 10V, V_{GS} = 0V, f = 1kHz V_{DS} = 20V, V_{GS} = 0V, f = 200MHz		G_{FS}	1000 1000	3000	µS
Output Conductance	V_{DS} = 20V, f = 1kHz		G_{OS}		35	µS
Input Capacitance	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		C_{iss}		4	pF
Reverse Capacitance	V_{DS} = 20V, V_{GS} = 0V, f = 1MHz		C_{rss}		1.2	pF
Noise Figure	V_{DS} = 20V, f = 10Hz, R_G = 10MΩ		NF		0.5	dB
Differential Gate Current	V_{DS} = 20V, I_D = 200µA, T_A = 125°C		$\lvert I_{G1} - I_{G2} \rvert$		10	nA
Saturation Drain Current Ratio	V_{DS} = 20V, V_{GS} = 0V	2N3957 2N3958	I_{DSS1} / I_{DSS2}	0.90 0.85	1 1	
Differential Gate Source Voltage	V_{DS} = 20V, I_D = 200µA	2N3957 2N3958	$\lvert V_{GS1} - V_{GS2} \rvert$		20 25	mV
Differential Gate Source Voltage with Temperature	V_{DS} = 20V, I_D = 200µA, T_O = -55°C to 125°C		$\frac{\lvert V_{GS1} - V_{GS2} \rvert}{\Delta T}$		5	mV/°C
Transconductance Ratio	VDS = 20V, ID = 200µA, f = 1kHz	2N3957 2N3958	g_{fs1}/g_{fs2}	0.90 0.85	1 1	

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