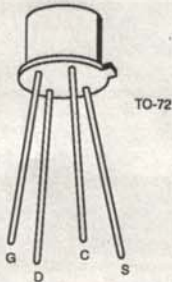


FEATURES

- Low Noise
- Low Capacitance
- Transconductance Up to 6500 μ S

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATINGS

($T_A = 25^\circ\text{C}$ unless otherwise noted)

Gate-Source or Gate-Drain Voltage	.....	-30V
Gate Current	.....	10mA
Storage Temperature Range	.....	-65°C to $+200^\circ\text{C}$
Operating Temperature Range	.....	-55°C to $+175^\circ\text{C}$
Lead Temperature (Soldering, 10sec)	.....	$+300^\circ\text{C}$
Power Dissipation	.....	300mW
Derate above 25°C}	.....	2.0mW/ $^\circ\text{C}$

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ORDERING INFORMATION

Part	Package	Temperature Range
2N3823	Hermetic TO-72	-55°C to $+175^\circ\text{C}$
X2N3823	Sorted Chips in Carriers	-55°C to $+175^\circ\text{C}$

Small Signal
Discretes

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS	
I_{GSS}	Gate Reverse Current		-0.5	nA	$V_{GS} = -20V, V_{DS} = 0$ $T_A = 150^\circ\text{C}$	
			-0.5	μA		
BV_{GSS}	Gate-Source Breakdown Voltage	-30			$I_G = -1\mu\text{A}, V_{DS} = 0$	
$V_{GS(off)}$	Gate-Source Cutoff Voltage		-8	V	$V_{DS} = 15V, I_D = 0.5\text{nA}$	
V_{GS}	Gate-Source Voltage	-1.0	-7.5		$V_{DS} = 15V, I_D = 400\mu\text{A}$	
I_{DSS}	Saturation Drain Current	4	20	mA	$V_{DS} = 15V, V_{GS} = 0$	
g_{fs}	Common-Source Forward Transconductance (Note 1)	3,500	6,500		$V_{DS} = 15V, V_{GS} = 0$	
$|y_{fs}|$	Common-Source Forward Transadmittance (Note 2)	3,200				$f = 1\text{kHz}$
g_{os}	Common-Source Output Conductance (Note 1)		35	μS		$f = 100\text{MHz}$
g_{is}	Common-Source Input Conductance (Note 2)		800			$f = 1\text{kHz}$
g_{oss}	Common-Source Output Conductance (Note 2)		200			$f = 200\text{MHz}$
C_{iss}	Common-Source Input Capacitance (Note 2)		6	pF		$f = 1\text{MHz}$
C_{rss}	Common-Source Reverse Transfer Capacitance (Note 2)		2			
NF	Noise Figure (Note 2)		2.5	dB	$V_{DS} = 15V, V_{GS} = 0$ $R_G = 1\text{k}\Omega$ $f = 100\text{MHz}$	

NOTES: 1. These parameters are measured during a 2ms interval 100ms after DC power is applied.
2. For design reference only, not 100% tested.