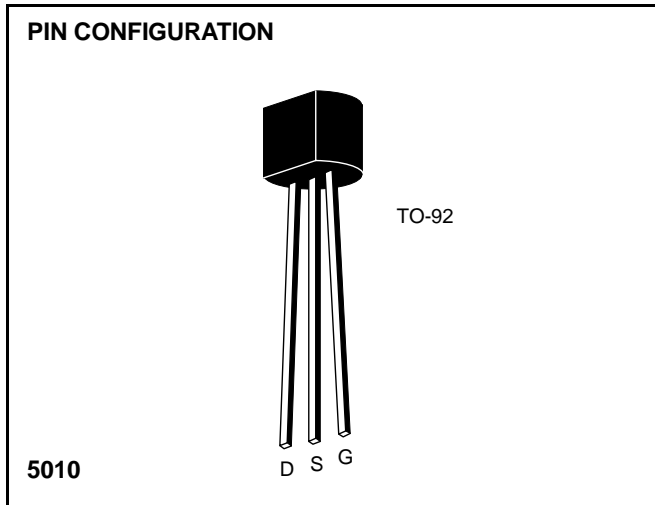


# N-Channel JFET

## General Purpose Amplifier/Switch



### 2N5457 – 2N5459



#### ABSOLUTE MAXIMUM RATINGS

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

Drain-Gate Voltage	25V
Drain-Source Voltage	25V
Continuous Forward Gate Current	10mA
Storage Temperature Range	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Operating Temperature Range	$-55^\circ\text{C}$ to $+135^\circ\text{C}$
Lead Temperature (Soldering, 10sec)	$+300^\circ\text{C}$
Power Dissipation	310mW
Derate above $25^\circ\text{C}$	2.82mW/ $^\circ\text{C}$

**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
2N5457-59	Plastic TO-92	$-55^\circ\text{C}$ to $+135^\circ\text{C}$
X2N5457-59	Sorted Chips in Carriers	$-55^\circ\text{C}$ to $+135^\circ\text{C}$

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS	
$BV_{GSS}$	Gate-Source Breakdown Voltage	-25		V	$I_G = -10\mu\text{A}$ , $V_{DS} = 0$	
$I_{GSS}$	Gate Reverse Current		-1.0	nA	$V_{GS} = -15\text{V}$ , $V_{DS} = 0$	
			-200		$V_{GS} = -15\text{V}$ , $V_{DS} = 0$ , $T_A = 100^\circ\text{C}$	
$V_{GS(off)}$	Gate-Source Cutoff Voltage	2N5457	-0.5	-6.0	V	$V_{DS} = 15\text{V}$ , $I_D = 10\text{nA}$
		2N5458	-1.0	-7.0		
		2N5459	-2.0	-8.0		
$V_{GS}$	Gate-Source Voltage	2N5457	2.5		V	$V_{DS} = 15\text{V}$ , $I_D = 100\mu\text{A}$ , Typical $V_{DS} = 15\text{V}$ , $I_D = 200\mu\text{A}$ , Typical $V_{DS} = 15\text{V}$ , $I_D = 400\mu\text{A}$ , Typical
		2N5458	3.5			
		2N5459	4.5			
$I_{DSS}$	Zero-Gate-Voltage Drain Current (Note 1)	2N5457	1.0	5.0	mA	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$
		2N5458	2.0	9.0		
		2N5459	4.0	16		
$ y_{fs} $	Forward Transfer Admittance	2N5457	1000	5000	$\mu\text{S}$	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$ , $f = 1\text{kHz}$
		2N5458	1500	5500		
		2N5459	2000	6000		
$ y_{os} $	Output Admittance		50	$\mu\text{S}$	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$ , $f = 1\text{kHz}$	
$C_{iss}$	Input Capacitance (Note 2)		7.0	pF	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$ , $f = 1\text{MHz}$	
$C_{rss}$	Reverse Transfer Capacitance (Note 2)		3.0	pF	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$ , $f = 1\text{MHz}$	
NF	Noise Figure (Note 2)		3.0	dB	$V_{DS} = 15\text{V}$ , $V_{GS} = 0$ , $R_G = 1\text{MHz}$ , $BW = 1\text{Hz}$ , $f = 1\text{kHz}$	

**NOTES:** 1. Pulse test required.  $PW \leq 630\text{ms}$ , duty cycle  $\leq 10\%$ .  
2. For design reference only, not 100% tested.

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Datasheets for electronics components.