

# P-Channel JFET



## J270 – J271 / SST270 – SST271

### FEATURES

- Surface Mount

### APPLICATIONS

- P-Channel Amplifier

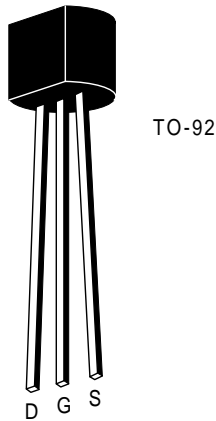
### DESCRIPTION

The J270/SST270 Series is an all-purpose amplifier for designs requiring P-channel operation. These devices feature high gain, low noise and tight  $V_{GS(OFF)}$  limits for simple circuit design. They are available in low-cost SOT-23 and TO-92 packages and are fully compatible with automatic insertion techniques.

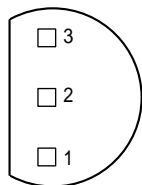
### ORDERING INFORMATION

Part	Package	Temperature Range
J270-271	Plastic TO-92	-55°C to +135°C
SST270-271	Plastic SOT-23	-55°C to +135°C

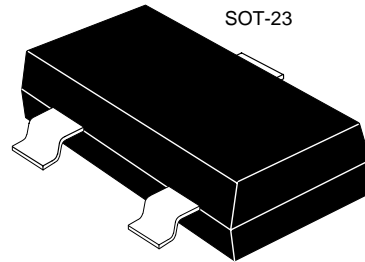
### PIN CONFIGURATION



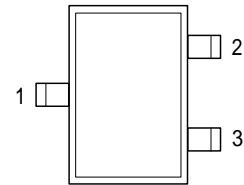
- 1 DRAIN
- 2 GATE
- 3 SOURCE



BOTTOM VIEW



- 1 GATE
- 2 SOURCE
- 3 DRAIN



TOP VIEW

### PRODUCT MARKING (SOT-23)

SST270	P20
SST271	P21

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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMIT	UNIT
Gate-Drain Voltage	$V_{GD}$	30	V
Gate-Source Voltage	$V_{GS}$	30	V
Gate Current	$I_G$	-50	mA
Power Dissipation	$P_D$	350	mW
Power Derating		2.8	mW/ $^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to 150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to 150	$^\circ\text{C}$
Lead Temperature (1/16" from case for 10 seconds)	$T_L$	300	$^\circ\text{C}$

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

SYMBOL	PARAMETER	TYP <sup>1</sup>	270		271		UNIT	TEST CONDITIONS
			MIN	MAX	MIN	MAX		
STATIC								
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	45	30		30		V	$I_G = 1\mu\text{A}, V_{DS} = 0\text{V}$
$V_{GS(OFF)}$	Gate-Source Cutoff Voltage		0.5	2.0	1.5	4.5		$V_{DS} = -15\text{V}, I_D = -1\text{nA}$
$I_{DSS}$	Saturation Drain Current <sup>2</sup>		-2	-15	-6	-50	mA	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}$
$I_{GSS}$	Gate Reverse Current	10		200		200	pA	$V_{GS} = 20\text{V}, V_{DS} = 0\text{V}$
		5					nA	$T_A = 125^\circ\text{C}$
$I_G$	Gate Operating Current	10					pA	$V_{DG} = -15\text{V}, I_D = -1\text{mA}$
$V_{GS(F)}$	Gate-Source Forward Voltage	-0.7					V	$I_G = -1\text{mA}, V_{DS} = 0\text{V}$
DYNAMIC								
$g_{fs}$	Common-Source Forward Transconductance		6	15	8	18	mS	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{kHz}$
$g_{os}$	Common-Source Output Conductance			200		500	$\mu\text{S}$	
$C_{iss}$	Common-Source Input Capacitance	20					pF	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{MHz}$
$C_{rss}$	Common-Source Reverse Transfer Capacitance	4						
$e_n$	Equivalent Input Noise Voltage	20					$\frac{\text{nV}}{\sqrt{\text{Hz}}}$	$V_{DS} = -10\text{V}, V_{GS} = 0\text{V}$ $f = 1\text{kHz}$

NOTES: 1. For design aid only, not subject to production testing.  
 2. Pulse test;  $PW = 300\mu\text{s}$ , duty cycle  $\leq 3\%$ .



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