

LINEAR SYSTEMS

Improved Standard Products®

LS5564 SERIES

MONOLITHIC DUAL N-CHANNEL
JFET AMPLIFIER

FEATURES

Replacement for SILICONIX & NATIONAL: 2N5564 Series

ABSOLUTE MAXIMUM RATINGS¹

@ 25 °C (unless otherwise stated)

Maximum Temperatures

Storage Temperature	-55 to +150 °C
Operating Junction Temperature	-55 to +150 °C

Maximum Power Dissipation

Continuous Power Dissipation (Total) ⁴	500mW
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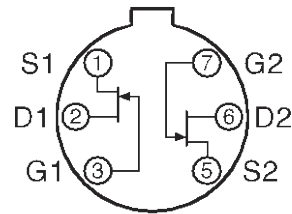
Maximum Currents

Gate Current	50mA
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Maximum Voltages

Gate to Drain	-40V
Gate to Source	-40V

TO-71
TOP VIEW



MATCHING ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	TYP	LS5564		LS5565		LS5566		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
$ V_{GS1} - V_{GS2} $	Differential Gate to Source Cutoff Voltage			5		10		20	mV	$V_{DG} = 15V, I_D = 2mA$
$\frac{\Delta V_{GS1} - V_{GS2} }{\Delta T}$	Differential Gate to Source Voltage Change with Temperature			10		25		50	$\mu V/^\circ C$	$V_{DG} = 15V, I_D = 2mA$ $T_A = -55 \text{ to } +125^\circ C$
$\frac{I_{DSS1}}{I_{DSS2}}$	Saturation Drain Current Ratio		0.95	1	0.95	1	0.95	1		$V_{DS} = 15V, V_{GS} = 0V$
$\frac{g_{fs1}}{g_{fs2}}$	Forward Transconductance Ratio		0.95	1	0.90	1	0.90	1		$V_{DS} = 15V, I_D = 2mA$ $f = 1kHz^3$
CMRR	Common Mode Rejection Ratio	76							dB	$V_{DG} = 10V \text{ to } 20V$ $I_D = 2mA$

STATIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

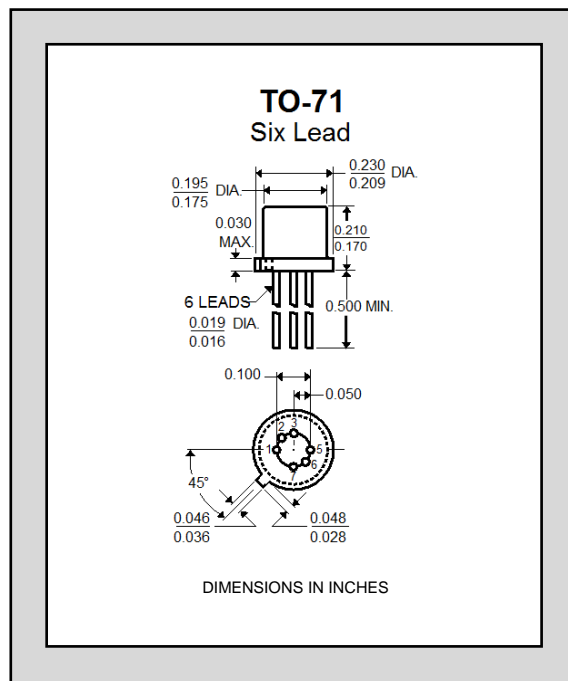
SYM.	CHARACTERISTIC	TYP	LS5564		LS5565		LS5566		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
BV_{GSS}	Gate to Source Breakdown Voltage		-40		-40		-40		V	$I_G = -1\mu A, V_{DS} = 0V$
$V_{GS(off)}$	Gate to Source Cutoff Voltage		-0.5	-3.0	-0.5	-3.0	-0.5	-3.0		$V_{DS} = 15V, I_D = 1nA$
$V_{GS(F)}$	Gate to Source Forward Voltage	0.7		1		1		1		$I_G = 2mA, V_{DS} = 0V$
V_{GS}	Gate to Source Voltage	-1.2								$V_{DG} = 15V, I_G = -2mA$
I_{DSS}	Drain to Source Saturation Current ²		7	40	7	40	7	40	mA	$V_{DS} = 10V, V_{GS} = 0V$
I_{GSS}	Gate Leakage Current			-100		-100		-100	pA	$V_{GS} = -20V, V_{DS} = 0V$
I_G	Gate Operating Current	-3								$V_{DG} = 10V, I_D = 5mA$
$R_{DS(on)}$	Drain-Source on Resistance	50		100		100		100	Ω	$V_{GS} = 0V, I_D = 1mA$
I_{G1}/I_{G2}	Gate to Gate Isolation Current			± 1		± 1		± 1	μA	$V_{G1}-V_{G2} = \pm 80V, I_D = I_S = 0$

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DYNAMIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC		TYP	LS5564		LS5565		LS5566		UNIT	CONDITIONS
				MIN	MAX	MIN	MAX	MIN	MAX		
g _{fs}	Forward Transconductance	f = 1kHz	9	7.5	20	7.5	20	7.5	20	mS	V _{DS} = 15V, I _D = 2mA
		f = 100MHz									
g _{os}	Output Conductance	f = 1kHz	55		100		100		100	μS	
		f = 100MHz	120								
C _{iss}	Input Capacitance		25							pF	V _{DS} = 15V, I _D = 2mA f = 1MHz
C _{rss}	Reverse Transfer Capacitance		5.5								
NF	Noise Figure		1							dB	V _{DS} = 15V, I _D = 2mA f = 10Hz, R _G = 10MΩ
e _n	Equivalent Input Noise Voltage	f = 10Hz	12		50		50		50	nV/√Hz	V _{DS} = 15V, I _D = 2mA f = 10Hz

PACKAGE OPTIONS:



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW ≤ 300μs Duty Cycle ≤ 3%
3. Assumes smaller value in numerator.
4. Derate 4mW/°C above 25°C.

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