

Linear Systems replaces discontinued Siliconix J507

The Linear Systems LSJ507 is a $\pm 20\%$ range current regulator

The LSJ507 is a $\pm 20\%$ range current regulator designed for demanding applications in test equipment and instrumentation. The LSJ507 utilizes JFET techniques to produce a single two-lead device which is extremely simple to operate.

- Two-Lead Plastic Package
- Guaranteed $\pm 20\%$ Tolerance
- Operation up to 50V
- Excellent Temperature Stability
- Simple Series Circuitry, No Separate Voltage Source
- Tight Guaranteed Circuit Performance
- Excellent Performance in Low-Voltage/Battery Circuits and High-Voltage Spike Protection
- High Circuit Stability vs. Temperature.

LSJ507 Applications:

- Constant-Current Supply
- Current-Limiting
- Timing Circuits

FEATURES

REPLACEMENT SECOND SOURCE FOR SILICONIX J507

WIDE CURRENT RANGE $1.80\text{mA} \pm 20\%$

BIASING NOT REQUIRED $V_{GS} = 0\text{V}$

ABSOLUTE MAXIMUM RATINGS¹

@ 25°C (unless otherwise noted)

Maximum Temperatures

Storage Temperature -55°C to $+150^\circ\text{C}$

Operating Junction Temperature -55°C to $+135^\circ\text{C}$

Maximum Power Dissipation

Continuous Power Dissipation @ 125°C 360mW

Maximum Currents

Forward Current 20mA

Reverse Current 50mA

Maximum Voltages

Peak Operating Voltage $P_{OV} = 50\text{V}$

ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

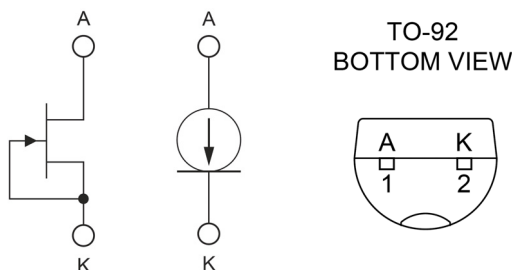
SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
P_{OV}	Peak Operating Voltage ²	50	--	--	V	$I_F = 1.1 I_{F(MAX)}$
V_R	Reverse Voltage	--	0.8	--	V	$I_R = 1\text{mA}$
C_F	Forward Capacitance	--	2.2	--	pF	$V_F = 25\text{V}, f = 1\text{MHz}$

SPECIFIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

PART	FORWARD CURRENT ³ I_F			DYNAMIC IMPEDANCE ⁴ Z_d		KNEE IMPEDANCE Z_K	LIMITING VOLTAGE ⁵ V_L	
	$V_F = 25\text{V}$			$V_F = 25\text{V}$		$V_F = 6\text{V}$	$I_F = 0.8 I_{F(MIN)}$	
	MIN	NOM	MAX	MIN	TYP	TYP	TYP	MAX
LSJ507	1.44	1.80	2.16	0.20	1	0.19	2.8	1.3

Notes:

1. Absolute Maximum ratings are limiting values above which serviceability may be impaired
2. Pulsed, $t = 2\text{ms}$. Maximum V_F where $I_F < 1.1 I_{F(MAX)}$
3. Pulsed, $t = 2\text{ms}$. Continuous currents may vary.
4. Pulsed, $t = 2\text{ms}$. Continuous impedances may vary.
5. Min V_F required to ensure $I_F = 0.8 I_{F(MIN)}$



V-I CHARACTERISTICS CURRENT REGULATING DIODE

