LINEAR SYSTEMS

J507
Current Regulator Diode

micross

Linear Systems replaces discontinued Siliconix J507

The Linear Systems J507 is a ± 20% range current regulator

The J507 is a ±20% range current regulator designed for demanding applications in test equipment and instrumentation. The J507 utilizes JFET techniques to produce a single two-leaded device which is extremely simple to operate.

- Two-Lead Plastic Package
- Guaranteed ±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

J507 Applications:

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

FEATURES	
REPLACEMENT SOURCE FOR SILICONIX J507	
WIDE CURRENT RANGE	1.80mA ± 20%
BIASING NOT REQUIRED	V_{GS} = 0V
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to 150°C
Junction Operating Temperature	-55 to 135°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} = 50V

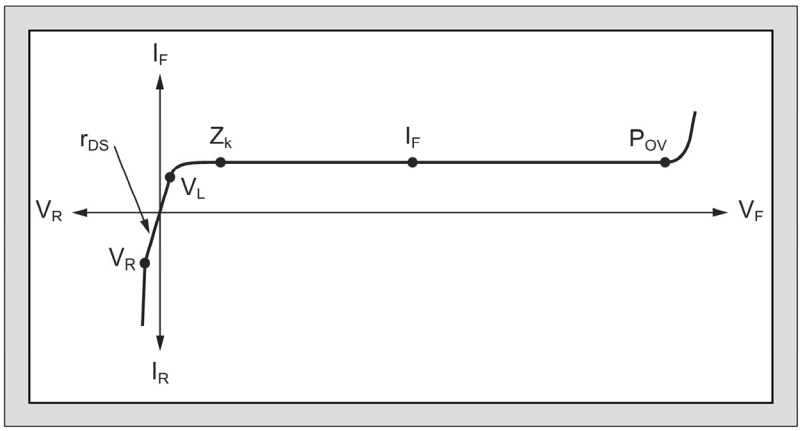
ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

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

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

PART	Forward Current[3] I_F			Dynamic Impedance[4] Z_d		Knee Impedance Z_k	Limiting Voltage[5] V_L	
	V_F = 25V			V_F = 25V		V_F = 6V	$I_F = 0.8I_{F(min)}$	
	MIN	NOM	MAX	MIN	TYP	TYP	TYP	MAX
J507	1.440	1.80	2.160	0.20	1	0.19	2.8	1.3

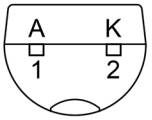
V-I CHARACTERISTICS CURRENT REGULATING DIODE

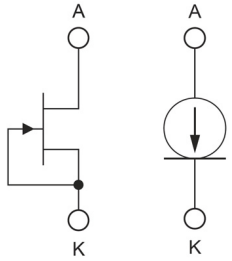


Available Packages:

TO-92 Bare Die.

TO-92
BOTTOM VIEW





Please contact Micross for full package and die dimensions

Notes:
1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, t = 2ms. Maximum V_F where IF < 1.1_{IF}(max).
3. Pulsed, t = 2ms. Continuous currents may vary.
4. Pulsed, t = 2ms. Continuous impedances may vary.
5. Min V_F required to ensure $I_F = 0.8_{IF}$(min).

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