

Linear Systems replaces discontinued Siliconix J503

The Linear Systems J503 is a $\pm 20\%$ range current regulator

The J503 is a $\pm 20\%$ range current regulator designed for demanding applications in test equipment and instrumentation. The J503 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

J503 Applications:

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

FEATURES

REPLACEMENT SOURCE FOR SILICONIX J503

WIDE CURRENT RANGE	$0.56\text{mA} \pm 20\%$
BIASING NOT REQUIRED	$V_{GS} = 0\text{V}$

ABSOLUTE MAXIMUM RATINGS¹

@ 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
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Maximum Currents

Forward Current	20mA
Reverse Current	50mA

Maximum Voltages

Peak Operating Voltage	$P_{OV} = 50\text{V}$
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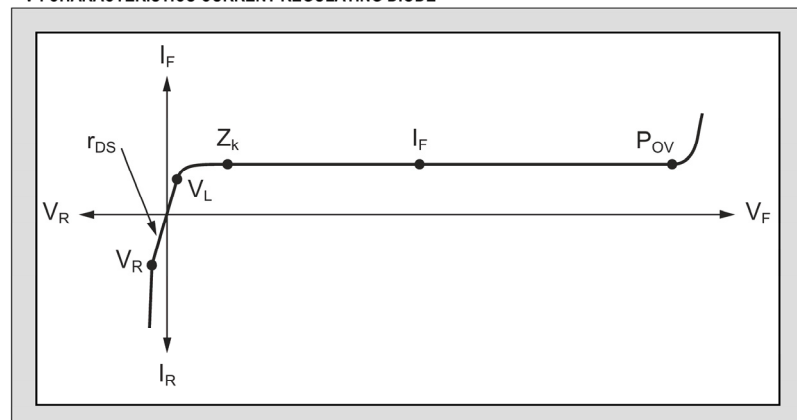
ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

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	$I_R = 1\text{mA}$
C_F	Forward Capacitance		2.2		pF	$V_F = 25\text{V}, f = 1\text{MHz}$

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

PART	Forward Current ³ I_F			Dynamic Impedance ⁴ Z_d		Knee Impedance Z_k	Limiting Voltage ⁵ V_L	
	$V_F = 25\text{V}$			$V_F = 25\text{V}$		$V_F = 6\text{V}$	$I_F = 0.8I_{F(min)}$	
	MIN	NOM	MAX	MIN	TYP	TYP	TYP	MAX
J503	0.448	0.56	0.672	1.20	5	0.80	1.7	0.7

V-I CHARACTERISTICS CURRENT REGULATING DIODE



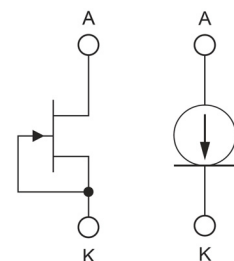
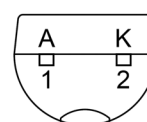
Notes:

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, $t = 2\text{ms}$. Maximum V_F where $I_F < 1.1I_{F(max)}$.
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 $I_F = 0.8I_{F(min)}$.

Available Packages:

TO-92
Bare Die.

TO-92
BOTTOM VIEW



Please contact Micross for full package and die dimensions

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