

# **Current Regulator Diode**



## Linear Systems replaces discontinued Siliconix J504

The Linear Systems J504 is a ± 20% range current regulator

The J504 is a ±20% range current regulator designed for demanding applications in test equipment and instrumentation. The J504 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

### J504 Applications:

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

FEATURES						
REPLACEMENT SOURCE FOR SILICONIX J504						
WIDE CURRENT RANGE	0.75mA ± 20%					
BIASING NOT REQUIRED V <sub>GS</sub> = 0V						
ABSOLUTE MAXIMUM RATINGS <sup>1</sup>						
@ 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 <sub>OV</sub> = 50V					

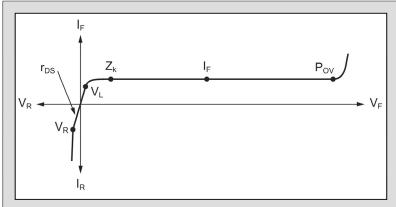
#### ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
Pov	Peak Operating Voltage <sup>2</sup>	50			V	$I_{F} = 1.1I_{F(max)}$
$V_R$	Reverse Voltage		0.8		٧	$I_R = 1mA$
C <sub>F</sub>	Forward Capacitance		2.2		рF	$V_F = 25V, f = 1MHz$

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

PART	Fo	Forward Current <sup>3</sup>		Dynamic Ir Z	, <del>"</del>	Knee Impedance Z <sub>k</sub>	Limiting Voltage⁵ V <sub>L</sub>	
	V <sub>F</sub> = 25V			V <sub>F</sub> = 25V		V <sub>F</sub> = 6V	$I_{F} = 0.8I_{F(min)}$	
	MIN	NOM	MAX	MIN	TYP	TYP	TYP	MAX
J504	0.600	0.75	0.900	0.80	3.5	0.55	1.9	0.8

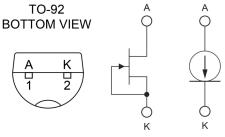
#### V-I CHARACTERISTICS CURRENT REGULATING DIODE



- 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).

Available Packages:

TO-92 Bare Die.



Please contact Micross for full package and die dimensions

Micross Components Europe



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