

n-channel JFETs current regulator diodes designed for . . .



- Current Regulation
- Current Limiting
- Biasing
- Linear Ramp and Staircase Generator

Performance Curves NCL
See Section 5

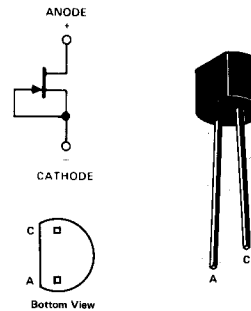
BENEFITS

- Low Cost
- Simple Two Lead Current Source
- Simplifies Floating Current Sources
No Power Supplies Required
- Good Operating Current Tolerance
±20%

TO-92
See Section 7

ABSOLUTE MAXIMUM RATINGS (25°C)

Peak Operating Voltage	50 V
Forward Current	20 mA
Reverse Current	50 mA
Total Device Dissipation at 25°C Ambient (Derate 3.27 mW/°C)	360 mW
Operating Temperature Range	-55 to 135°C
Storage Temperature Range	-55 to 150°C
Lead Temperature Range (1/16" from case for 10 seconds)	300°C



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic			J506	J507	J508	J509	J510	J511	Unit	Test Conditions	
1 2 3 S T A T I C	I _{F1}	Forward Current (Note 1)	Min	1.120	1.440	1.9	2.4	2.9	3.8	mA	V _F = 25 V
		Nominal	1.400	1.800	2.4	3.0	3.6	4.7			
		Max	1.680	2.160	2.9	3.6	4.3	5.6			
4 5 6 C	POV	Peak Operating Voltage (Notes 1 and 2)	Min	50	50	50	50	50	50	V	I _F = 1.1 I _{F1} (Max)
		V _L	Limiting Voltage (Note 3)	Max	2.5	2.8	3.1	3.5	3.9		4.2
7 8 9 D Y N	Z _{F1}	Small-Signal Dynamic Impedance (Note 1)	Min	0.4	0.25	0.25	0.20	0.20	0.15	MΩ	V _F = 25 V, f = 1 kHz
		C _F	Anode-Cathode Capacitance	Typ	1.4	1.0	0.70	0.60	0.50		
			Typ	2	2	2	2	2	2	pF	V _F = 25 V, f = 1 MHz

NOTES:

1. Pulse test duration = 2 ms.
2. Maximum V_F where I_F < 1.1 I_{F1}(Max) is guaranteed.
3. Minimum V_F required to insure I_F > 0.9 I_{F1}(Min).

NCL

Current-Limiter Diode
V-I Characteristic

