

current regulator diodes

designed for . . .



Performance Curves NCL
See Section 4

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

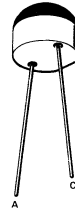
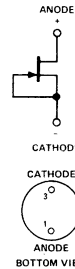
BENEFITS

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

TO-106
See Section 5

ABSOLUTE MAXIMUM RATINGS (25°C)

Peak Operating Voltage	50 V
Forward Current	20 mA
Reverse Current	50 mA
Total Device Dissipation (25°C Free Air Temperature)	350 mW
Power Derating (to +125°C)	3.5 mW/°C
Storage Temperature Range	-55 to +125°C
Operating Temperature Range	-55 to +125°C
Lead Temperature (1/16" from case for 10 seconds)	300°C



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

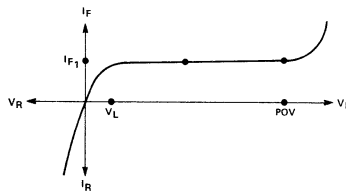
Characteristic		E500	E501	E502	E503	E504	E505	E506	E507	Unit	Test Conditions	
S T A T I C	I _{F1} Forward Current (Note 1)	Min	192	264	344	448	600	800	1120	1440	μA	V _F = 25 V
		Nominal	240	330	430	560	750	1000	1400	1800		
		Max	288	396	516	672	900	1200	1680	2160		
C	POV Peak Operating Voltage (Notes 1 and 2)	Min	50	50	50	50	50	50	50	50	V	I _F = 1.1 I _{F1} (Max)
		Max	1.2	1.3	1.5	1.7	1.9	2.1	2.5	2.8		I _F = 0.9 I _{F1} (Min)
D Y N	V _L Limiting Voltage (Note 3)	Min	5.0	3.0	2.0	1.4	1.0	0.6	0.4	0.25	MΩ	V _F = 25 V, f = 1 kHz
		Typ	0.8	0.9	1.1	1.2	1.4	1.5	1.8	2.0		
N	Z _{F1} Small-Signal Dynamic Impedance (Note 1)	Min	5.0	3.0	2.0	1.4	1.0	0.6	0.4	0.25	MΩ	V _F = 25 V, f = 1 kHz
		Typ	8.0	6.0	4.4	3.4	2.5	1.9	1.4	1.0		
	C _F Anode-Cathode Capacitance	Typ	2	2	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



E500 E501 E502 E503 E504 E505 E506 E507

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