

Performance Curves NCL

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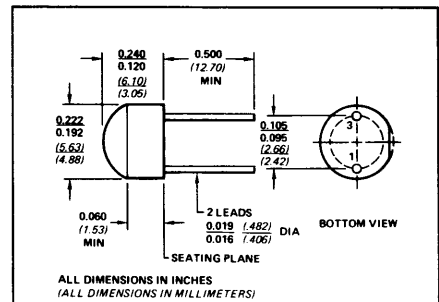
N-CHANNEL SILICON JUNCTION FET CURRENT-LIMITER DIODES



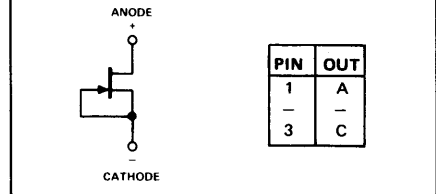
FOR CURRENT-LIMITING, REGULATING AND BIASING

This series of epoxy-encapsulated FET diodes is characterized for constant-current applications which require wide operating voltage range and high dynamic impedance. Applications include over-current protection, transistor biasing, linear ramp and staircase generators, timers, precision voltage reference sources, and linear-scale ohmmeters.

- **Maximum Operating Voltage = 50 V**
- **Wide Current Range: from 240 μ A (E500) to 1800 μ A (E507)**
- **High Dynamic Impedance = 1.0 M Ω Min (E504)**
- **Limiting Current Tolerance = \pm 20%**

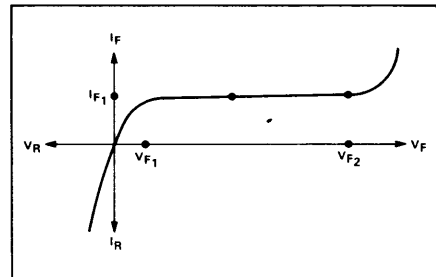


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ABSOLUTE MAXIMUM RATINGS (25°C)

Anode-Cathode Voltage	+60 V
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	I_{F1} Forward Current (Notes 1 & 2)	240	330	430	560	750	1,000	1,400	1,800	μ A	$V_F = 25$ V
	V_{F2} Maximum Operating Voltage	50	50	50	50	50	50	50	50	V	$I_F = 1.3 I_{F1}$
	V_{F1} Maximum Limiting Voltage	1.2	1.3	1.5	1.7	1.9	2.1	2.5	2.8	V	$I_F = 0.7 I_{F1}$
D Y N	Z_{F1} Minimum Small-Signal Dynamic Impedance	5.0	3.0	2.0	1.4	1.0	0.6	0.4	0.25	M Ω	$V_F = 25$ V, $f = 1$ kHz
	C_F Typical Anode-Cathode Capacitance	12	12	12	12	12	12	12	12	pF	$V_F = 25$ V, $f = 1$ MHz

NOTES:

1. Nominal value shown; tolerance is \pm 20%.
2. Pulse test duration = 2 ms.

NCL