

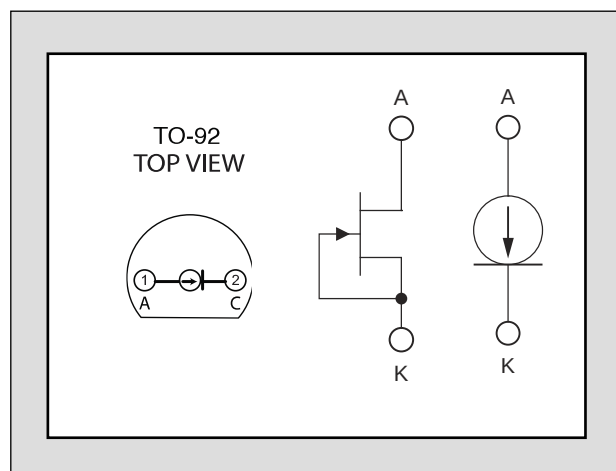
LINEAR SYSTEMS

Improved Standard Products®

J500 SERIES

CURRENT REGULATING DIODES

FEATURES	
REPLACES SILICONIX/VISHAY J500 SERIES	
WIDE CURRENT RANGE	0.192 to 5.6mA
BIASING NOT REQUIRED	$V_{GS} = 0V$
ABSOLUTE MAXIMUM RATINGS ¹	
@ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to 150°C
Junction Operating Temperature	-55 to 150°C
Maximum Power Dissipation	
Continuous Power Dissipation @25°C	350mW
Maximum Currents	
Forward Current	20mA
Reverse Current	50mA
Maximum Voltages	
Peak Operating Voltage	$P_{OV} = 50V$



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

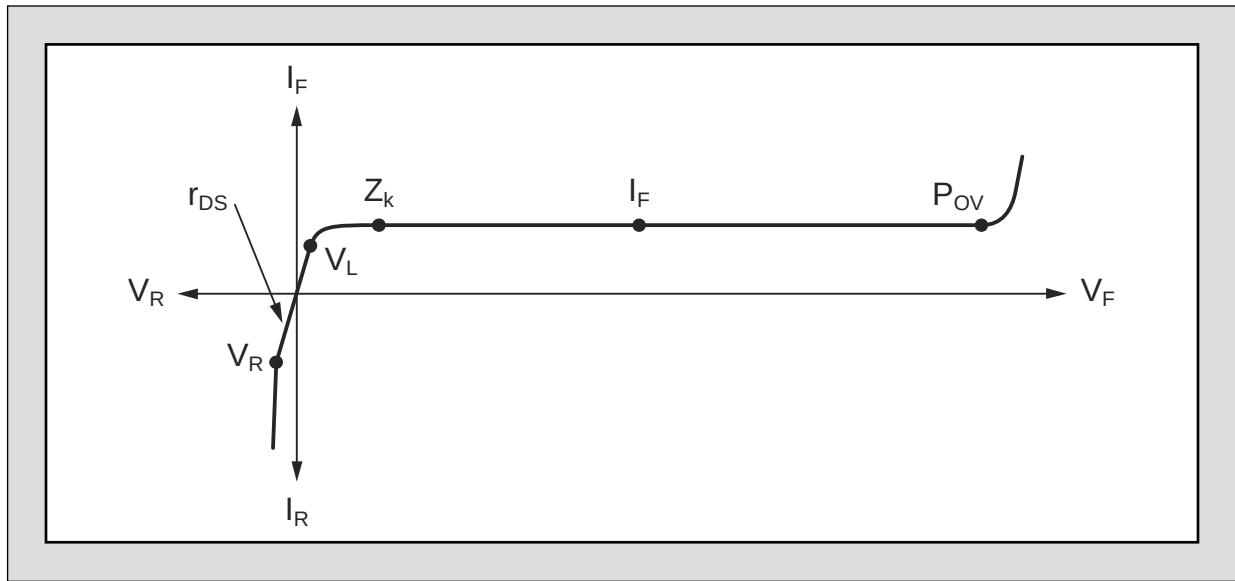
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
P_{OV}	Peak Operating Voltage ⁶	50			V	$I_F = 1.1I_{F(max)}$
V_R	Reverse Voltage		0.8		V	$I_R = 1mA$
C_F	Forward Capacitance		2.2		pF	$V_F = 25V, f = 1MHz$

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

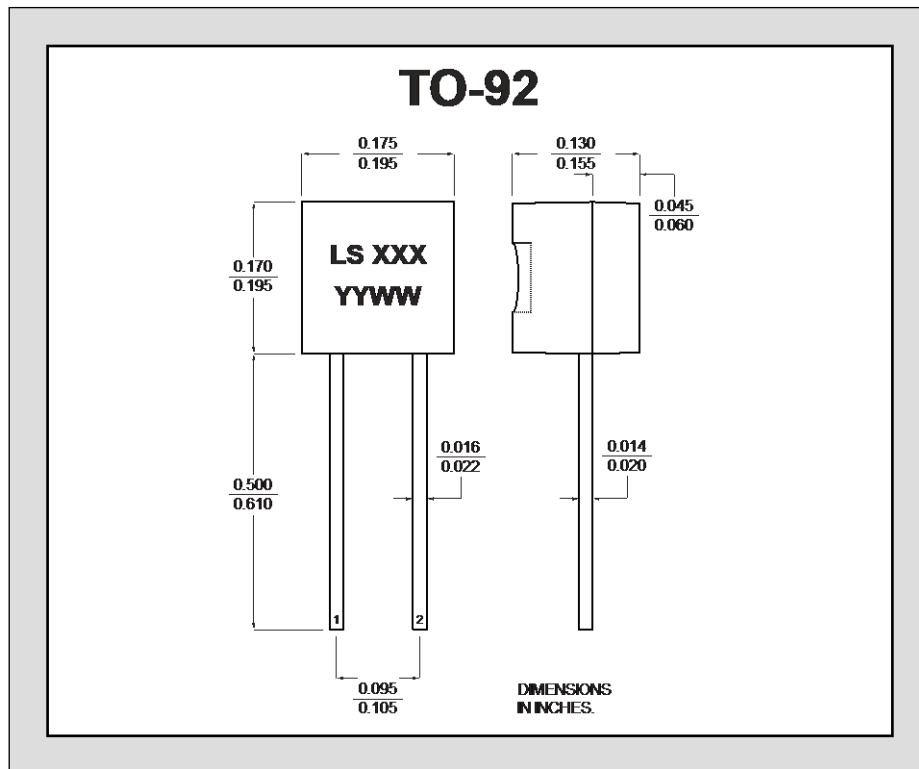
PART	Forward Current ³ $I_{F(mA)}$			Dynamic Impedance ⁴ $Z_d(M\Omega)$		Knee Impedance $Z_k(M\Omega)$	Limiting Voltage ⁵ $V_L(V)$	
	$V_F = 25V$			$V_F = 25V$		$V_F = 6V$	$I_F = 0.8I_{F(min)}$	
	MIN	NOM	MAX	MIN	TYP	TYP	TYP	MAX
J500	0.192	0.24	0.288	4.00	15	2.50	0.4	1.2
J501	0.264	0.33	0.396	2.20	10	1.60	0.5	1.3
J502	0.344	0.43	0.516	1.50	7	1.10	0.6	1.5
J503	0.448	0.56	0.672	1.20	5	0.80	0.7	1.7
J504	0.600	0.75	0.900	0.80	3.5	0.55	0.8	1.9
J505	0.800	1.00	1.200	0.50	2.	0.40	0.9	2.1
J506	1.120	1.40	1.680	0.33	1.5	0.25	1.1	2.5
J507	1.440	1.80	2.160	0.20	1	0.19	1.3	2.8
J508	1.900	2.40	2.900	0.20	0.7	0.13	1.5	3.1
J509	2.400	3.00	3.600	0.15	0.5	0.09	1.7	3.5
J510	2.900	3.60	4.300	0.15	0.4	0.07	1.9	3.9
J511	3.800	4.70	5.600	0.12	0.3	0.05	2.1	4.2

Linear Integrated Systems

V-I CHARACTERISTICS CURRENT REGULATING DIODE



PACKAGING DETAILS



Notes

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, $t = 2\text{ms}$. Steady state currents may vary.
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 $I_F = 0.8I_{F(\text{min})}$.
6. Max V_F where $I_F = 1.1I_{F(\text{max})}$ is guaranteed. Pulsed test $\leq 2\text{ms}$.

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Linear Integrated Systems (LIS), established in 1987, is a third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company Founder John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, Co-Founder and Vice President of R&D at Intersil, and Founder/President of Micro Power Systems.