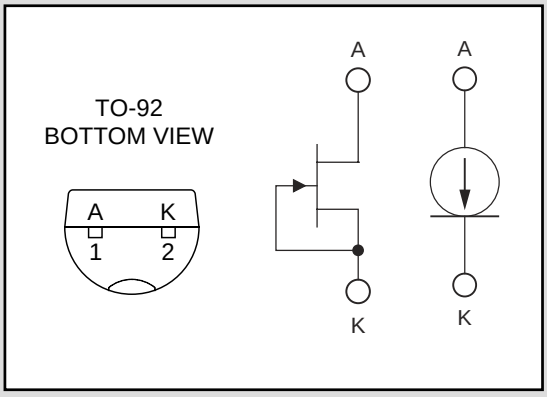
LINEAR SYSTEMS

Linear Integrated Systems

J500 SERIES

CURRENT REGULATING DIODES

FEATURES	
SECOND SOURCE FOR SILICONIX 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 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_{OV} = 50V



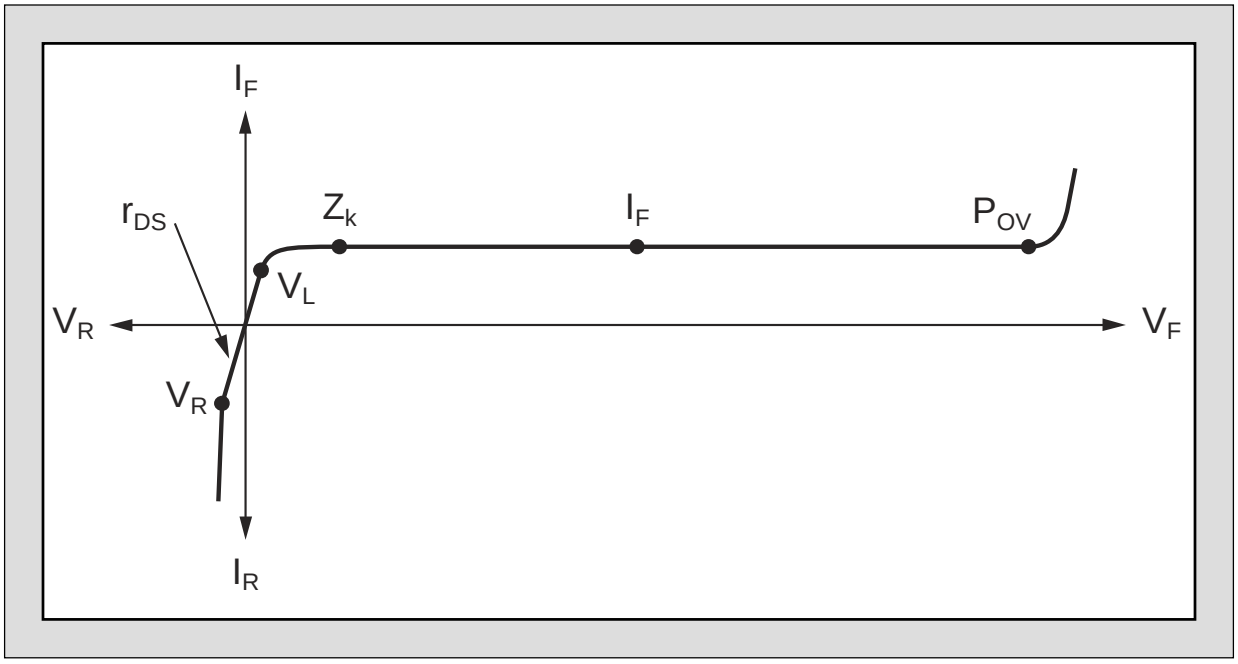
COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
P_{OV}	Peak Operating Voltage[2]	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

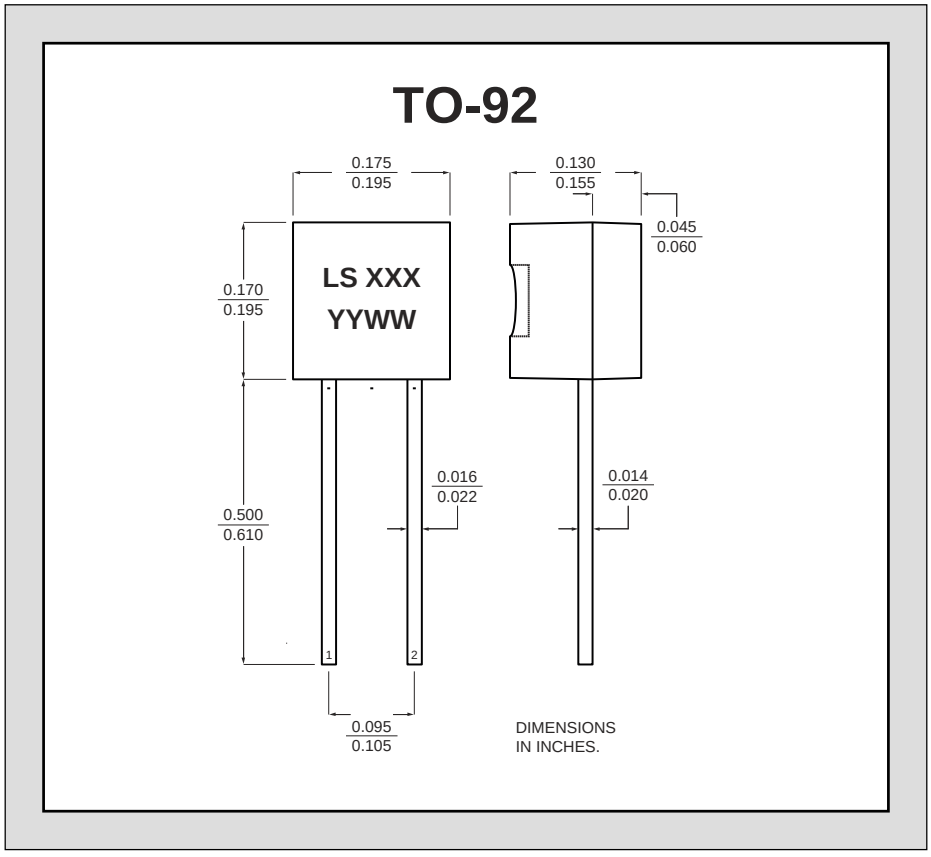
SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

PART	Forward Current[3] I_F			Dynamic Impedance[4] Z_d		Knee Impedance Z_k	Limiting Voltage[5] V_L	
	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	1.2	0.4
J501	0.264	0.33	0.396	2.20	10	1.60	1.3	0.5
J502	0.344	0.43	0.516	1.50	7	1.10	1.5	0.6
J503	0.448	0.56	0.672	1.20	5	0.80	1.7	0.7
J504	0.600	0.75	0.900	0.80	3.5	0.55	1.9	0.8
J505	0.800	1.00	1.200	0.50	2.	0.40	2.1	0.9
J506	1.120	1.40	1.680	0.33	1.5	0.25	2.5	1.1
J507	1.440	1.80	2.160	0.20	1	0.19	2.8	1.3
J508	1.900	2.40	2.900	0.20	0.7	0.13	3.1	1.5
J509	2.400	3.00	3.600	0.15	0.5	0.09	3.5	1.7
J510	2.900	3.60	4.300	0.15	0.4	0.07	3.9	1.9
J511	3.800	4.70	5.600	0.12	0.3	0.05	4.2	2.1

V-I CHARACTERISTICS CURRENT REGULTING DIODE



PACKAGING DETAILS



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, t = 2ms. Maximum V_F where $I_F < 1.1I_{F(max)}$.
3. Pulsed, t = 2ms. Continuous currents may vary.
4. Pulsed, t = 2ms. Continuous impedances may vary.
5. Min V_F required to ensure $I_F = 0.8I_{F(min)}$.

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