

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 RATINGS¹

@ 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

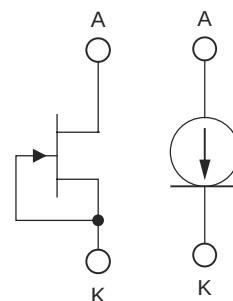
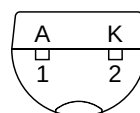
Forward Current 20mA

Reverse Current 50mA

Maximum Voltages

Peak Operating Voltage $P_{OV} = 50V$

TO-92
BOTTOM VIEW



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	$V_F = 25V, f = 1MHz$

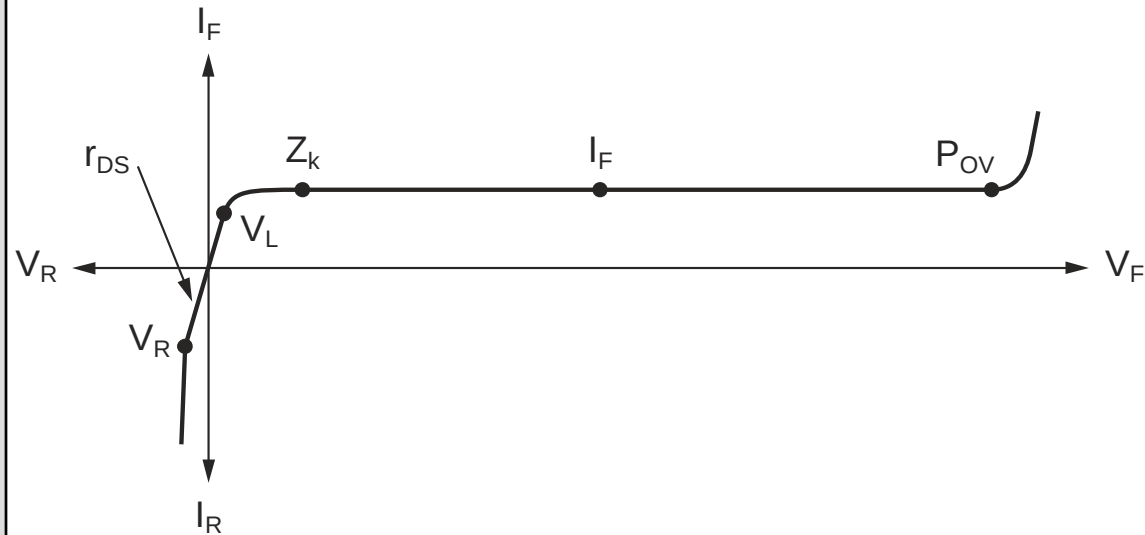
SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

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

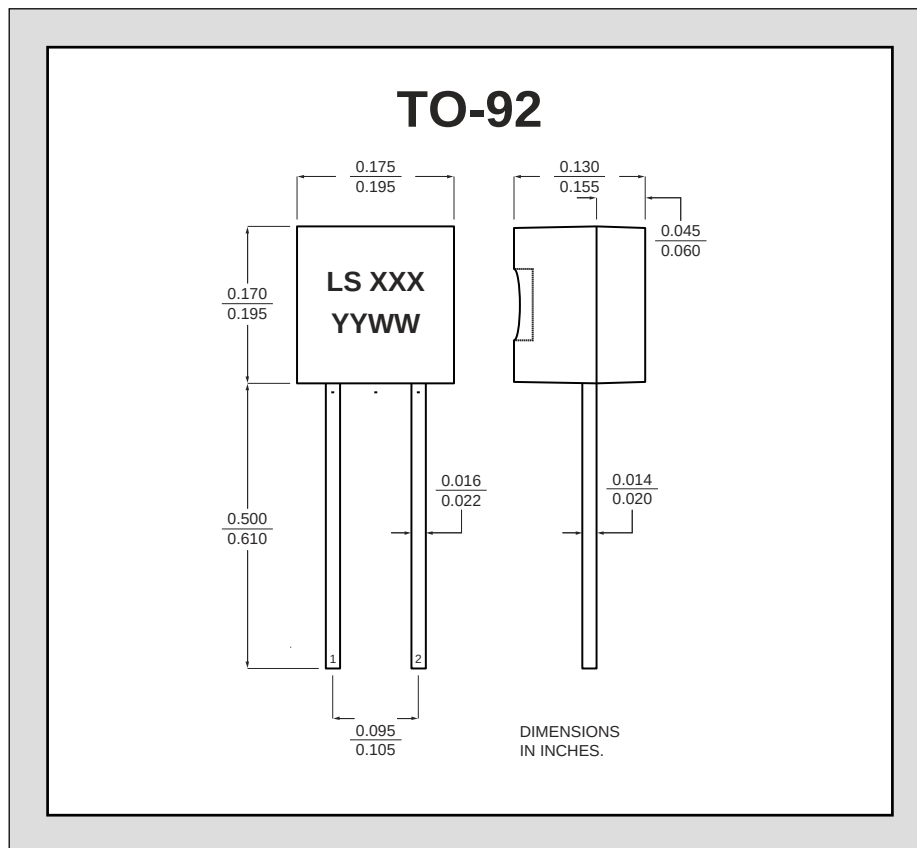
Linear Integrated Systems

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V-I CHARACTERISTICS CURRENT REGULATING DIODE



PACKAGING DETAILS



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed, $t = 2\text{ms}$. Maximum V_F where $I_F < 1.1I_{F(\text{max})}$.
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 $I_F = 0.8I_{F(\text{min})}$.

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