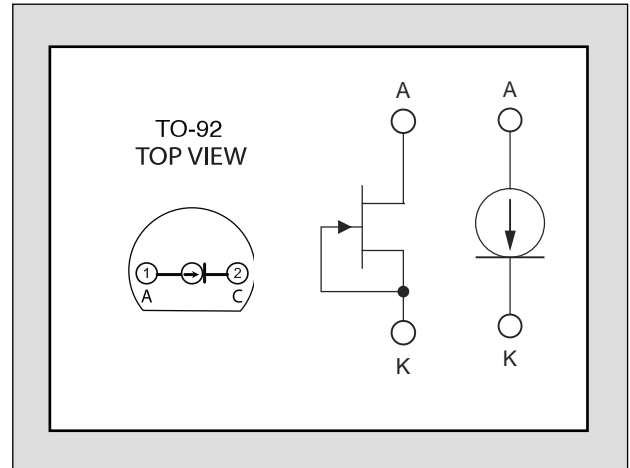


# LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

## J500 SERIES CURRENT REGULATING DIODES

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



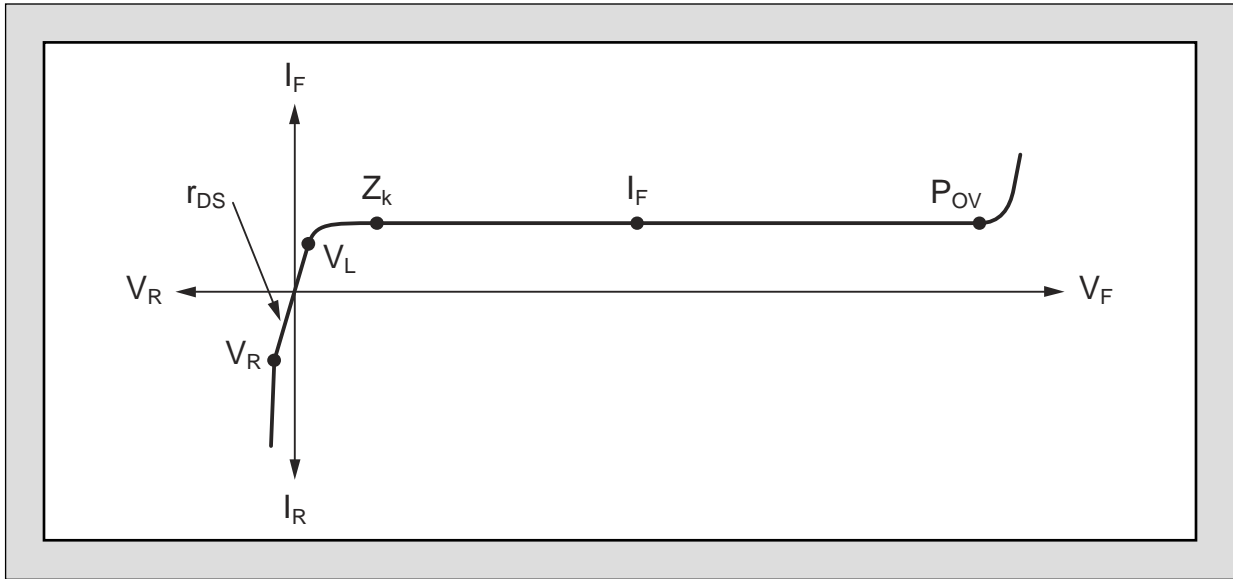
### COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
$P_{OV}$	Peak Operating Voltage <sup>6</sup>	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	$V_F = 25V, f = 1MHz$

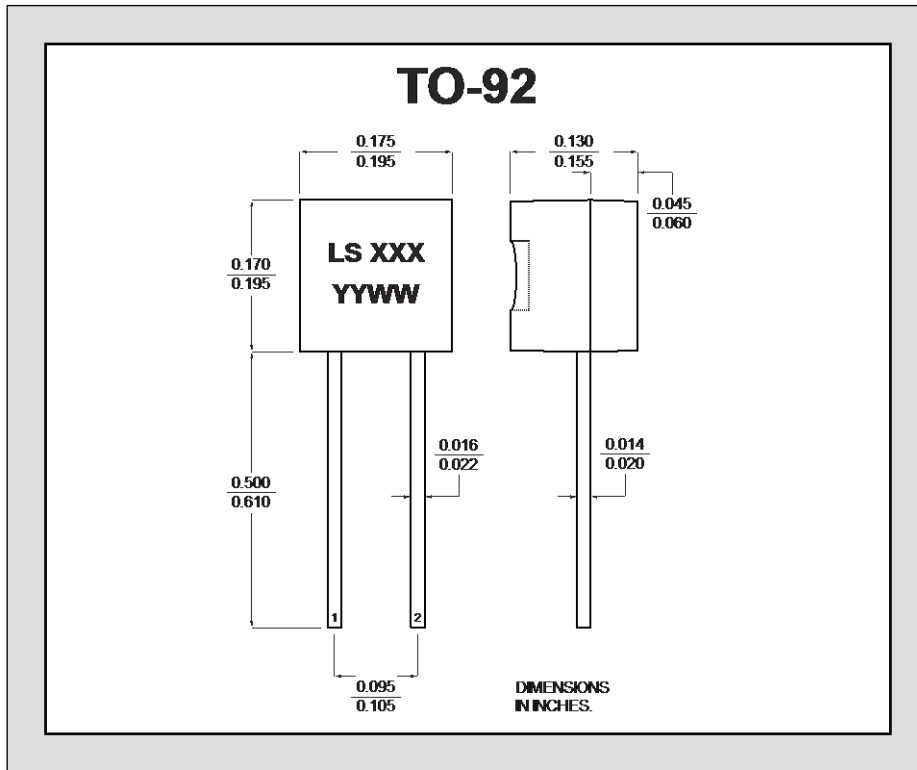
### SPECIFIC ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

PART	Forward Current <sup>3</sup> $I_{F(mA)}$			Dynamic Impedance <sup>4</sup> $Z_d(M\Omega)$		Knee Impedance $Z_k(M\Omega)$	Limiting Voltage <sup>5</sup> $V_L(V)$	
	$V_F = 25V$			$V_F = 25V$		$V_F = 6V$	$I_F = 0.8I_{F(min)}$	
	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

## V-I CHARACTERISTICS CURRENT REGULATING DIODE



## PACKAGING DETAILS



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed,  $t = 2\text{ms}$ . 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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