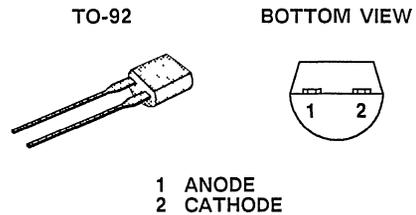


The J553 Series is a low cost family of current regulators designed for demanding applications in test equipment and instrumentation. These devices utilize the proven JFET techniques to produce a single two-lead device which is extremely simple to operate. With nominal current ranges from 0.5 mA to 4.5 mA, the J553 Series will meet a wide array of design requirements. In addition to its two-lead construction, this series feature improved current control over wide temperature ranges and simple "floating" operation as no power supplies are required for biasing. Several of the devices provide effective current control operating down to even 2 volts. Finally, its low-cost TO-92 package ensures a cost effective design solution.

For additional design information please see performance curves NCL, which are located in Section 7.

PART	$I_F$ (mA)
J553	0.50
J554	1.00
J555	2.00
J556	3.00
J557	4.50



### SIMILAR PRODUCTS

- TO-18, See CR022 Series
- Chips, Order J5XXCHP

### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMIT	UNITS
Peak Operating Voltage	$P_{OV}$	50	v
Forward Current	$I_F$	20	mA
Reverse Current	$I_R$	50	
Power Dissipation	$P_D$	360	mW
Power Derating		3.27	mW/ $^\circ\text{C}$
Operating Junction Temperature	$T_J$	-55 to 150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to 200	

ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

SYMBOL	$I_F$			$Z_d$	$Z_k$	$V_L$		POV		$C_F$	$\theta_1$
PARAMETER	REGULATOR CURRENT			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE		PEAK OPERATING VOLTAGE		CAPACITANCE	TEMPERATURE COEFFICIENT (TYPICALS)
TEST CONDITIONS	$V_F = 25\text{ V}$ (Note 1)			$V_F = 25\text{ V}$ (Note 2)	$V_F = 6\text{ V}$	$I_F = 0.8 I_{F(MIN)}$ (Note 3)		$I_F = 1.1 I_{F(MAX)}$ (Note 4)		$V_F = 25\text{ V}$ $f = 1\text{ MHz}$	$V_F = 25\text{ V}$ $0^\circ\text{C} \leq T_A \leq 100^\circ\text{C}$
UNITS	mA			M $\Omega$	M $\Omega$	V		V		pF	ppm/ $^\circ\text{C}$
	NOM	MIN	MAX	TYP	TYP	MAX	TYP	MIN	TYP	TYP	TYP
J553	0.50	0.180	0.750	13.0	1.00	1.30	0.7	50	100	2.2	-200
J554	1.00	0.600	1.600	5.0	0.40	1.75	0.9	50	100	2.2	-1300
J555	2.00	1.400	2.600	1.8	0.17	2.15	1.4	50	100	2.2	-2300
J556	3.00	2.400	3.800	1.0	0.09	2.60	1.7	50	100	2.2	-2800
J557	4.50	3.600	5.300	0.6	0.06	3.00	2.1	50	100	2.2	-3100

- NOTES: 1. Pulse test - steady state currents may vary.  
 2. Pulse test - steady state impedances may vary.  
 3. Min  $V_F$  required to insure  $I_F > 0.8 I_{F(MIN)}$ .  
 4. Max  $V_F$  where  $I_F > 1.1 I_{F(MAX)}$  is guaranteed.