

CRR0240 SERIES



Current Regulator Diodes

T-11-21

The CRR0240 Series is a family of precision current regulators designed for demanding applications in test equipment and instrumentation. These devices combine the proven performance of a JFET with an integrated resistor to produce a single two-lead device which is extremely simple to operate. With nominal current ranges from 0.24 mA to 4.3 mA, the CRR0240 Series will meet a wide array of design requirements. In addition to its two-lead construction, this series features $\pm 25\%$ current ranges, current control over wide temperature ranges, and simple "floating" operation as no power supplies are required for biasing. Finally, its TO-18 hermetically sealed package is available with military processing per MIL-S-19500. (See Section 1.)

For additional design information please see typical performance curves as follows (Section 7):

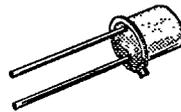
CRR0240-CRR0560 . . NKL
 CRR0800-CRR1250 . . NKM
 CRR1950-CRR4300 . . NKO

SIMILAR PRODUCTS

- TO-92, See J500 Series
- 10% Ranges, See CR022 Series
- Chips, Order CRRXXXXCHP

PART	I_F (mA)
CRR0240	0.24
CRR0360	0.36
CRR0560	0.56
CRR0800	0.80
CRR1250	1.25
CRR1950	1.95
CRR2900	2.90
CRR4300	4.30

TO-18 2 LEADS



BOTTOM VIEW



1 ANODE
 2 CATHODE

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

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMIT	UNITS
Peak Operating Voltage	P_{OV}	100	V
Reverse Current	I_R	50	mA
Thermal Resistance	θ_{JC}	100	$^\circ\text{C}/\text{W}$
Power Dissipation at $T_C = 25^\circ\text{C}$	P_D	1.25	W
Operating Junction Temperature	T_J	-55 to 150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to 200	



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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

SYMBOL	I _F			Z _d		Z _k	V _L		POV		C _F	θ ₁
	REGULATOR CURRENT			DYNAMIC IMPEDANCE		KNEE IMPEDANCE	LIMITING VOLTAGE		OPERATING VOLTAGE		CAPACITANCE	TEMPERATURE COEFFICIENT (TYPICALS)
PARAMETER	V _F = 25 V (Note 1)			V _F = 25 V (Note 2)		V _F = 6 V	I _F = 0.8 I _{F(MIN)} (Note 3)		I _F = 1.1 I _{F(MAX)} (Note 4)		V _F = 25 V f = 1 MHz	0°C ≤ T _A ≤ 100°C
TEST CONDITIONS	mA			MΩ		MΩ	V		V		pF	ppm/°C
	NOM	MIN	MAX	MIN	TYP	TYP	MAX	TYP	MIN	TYP	TYP	TYP
CRR0240	0.24	0.180	0.300	5.00	15.50	3.00	1.00	0.45	100	180	2.2	1800
CRR0360	0.56	0.270	0.450	2.50	9.50	1.70	1.05	0.65	100	180	2.2	650
CRR0560	0.56	0.420	0.700	1.20	6.00	0.90	1.30	0.82	100	180	2.2	-200
CRR0800	0.80	0.600	1.000	0.80	7.80	1.40	1.35	0.95	100	180	4.2	-550
CRR1250	1.25	0.937	1.560	0.50	3.70	0.80	1.60	1.20	100	180	4.2	-1050
CRR1950	1.95	1.460	2.440	0.37	0.90	0.28	1.95	0.80	100	175	6.0	300
CRR2900	2.90	2.160	3.600	0.28	0.65	0.16	2.35	1.00	100	175	6.0	-400
CRR4300	4.30	3.240	5.400	0.22	0.40	0.10	3.00	1.25	100	175	6.0	-1125

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.

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