1N5283-1 thru 1N5314-1 & 1N7048-1 thru 1N7055-1



0.5 W Current Regulators

Rev. V1

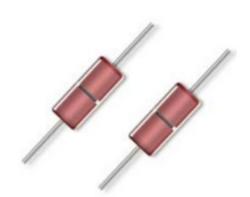
Features

- High Source Impedance
- Internal Metallurgical Bond
- Double Plug Construction
- Regulates Current over Broad Operating Range
- JAN, JANTX, JANTXV and JANS Qualification per MIL-PRF-19500/463 Available
- Hermetically Sealed Glass, DO-7
- Flexible Axial-lead Mounting Terminals
- RoHS* Compliant
- Non sensitive to ESD

Description

The popular 1N5283-1 thru 1N5314-1 and 1N7041-1 thru 1N7055-1 series of 0.5 watt current regulators provides a selection from 0.22 mA to 10 mA in standard 10% tolerances. These devices regulate current over a broad voltage range as a counter part offering to Zeners that regulate voltage over a broad current range. The somewhat larger D0-7 packaging option offers a double-plug internal bond connection with a larger active die element for its unique function as a current limiter.

Hermetically Sealed Glass, DO-7



Absolute Maximum Ratings^{1,2}

Parameter	Absolute Maximum		
Steady State Power Dissipation (T _L = +50°C, L = 3/8 ³)	500 mV		
Working Peak Voltage	100 V		
Thermal Impedance	25°C/W		
Thermal Resistance (junction to lead @ L = 0.375 in.)	250°C/W		
Junction & Storage Temperature	-65°C to +175°C		
Solder Pad Temperature @ 10 s	+260°C		

- 1. Exceeding any one or combination of these limits may cause permanent damage to this device.
- 2. MACOM does not recommend sustained operation near these survivability limits.
- 3. Derate @ 4 mW/°C above +50°C.

^{*} Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

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Electrical Specifications: $T_A = +25^{\circ}C$ (unless otherwise specified)

Part #	Regulator Current I _P (mA) @ V _S = 25 V			Dynamic Impedance ⁴ V _S = 25 V Z _S (M)	Knee Impedance ⁵ $V_K = 6 V$ $Z_K (M\Omega)$	Limiting Voltage I _L = 0.8 I _S V _L (V)	Peak Operating Voltage
	Nom.	Min.	Max.	Min.	Min.	Max.	(V)
1N5283-1 1N5284-1 1N5285-1 1N5286-1 1N5287-1	0.22 0.24 0.27 0.30 0.33	0.198 0.216 0.243 0.270 0.297	0.242 0.264 0.297 0.330 0.363	25 19 14 9 8	2.75 2.35 1.95 1.60 1.35	1.00	100
1N5288-1	0.39	0.351	0.429	4.10	1.000	1.05	100
1N5289-1	0.43	0.387	0.473	3.30	0.870	1.05	
1N5290-1	0.47	0.423	0.517	2.70	0.750	1.05	
1N5291-1	0.56	0.504	0.616	1.90	0.560	1.10	
1N5292-1	0.62	0.558	0.682	1.55	0.470	1.13	
1N5293-1	0.68	0.612	0.748	1.35	0.400	1.15	100
1N5294-1	0.75	0.675	0.825	1.15	0.335	1.20	
1N5295-1	0.82	0.738	0.902	1.00	0.290	1.25	
1N5296-1	0.91	0.819	1.001	0.88	0.240	1.29	
1N5297-1	1.00	0.900	1.100	0.80	0.205	1.35	
1N5298-1	1.10	0.99	1.21	0.70	0.180	1.40	100
1N5299-1	1.20	1.08	1.32	0.64	0.155	1.45	
1N5300-1	1.30	1.17	1.43	0.58	0.135	1.50	
1N5301-1	1.40	1.26	1.54	0.54	0.115	1.55	
1N5302-1	1.50	1.35	1.65	0.51	0.105	1.60	
1N5303-1	1.60	1.44	1.76	0.475	0.092	1.65	100
1N5304-1	1.80	1.62	1.98	0.420	0.074	1.75	
1N5305-1	2.00	1.80	2.20	0.395	0.061	1.85	
1N5306-1	2.20	1.98	2.42	0.370	0.052	1.95	
1N5307-1	2.40	2.16	2.54	0.345	0.044	2.00	
1N5308-1	2.70	2.43	2.97	0.320	0.035	2.15	100
1N5309-1	3.00	2.70	3.30	0.300	0.029	2.25	
1N5310-1	3.30	2.97	3.63	0.280	0.024	2.35	
1N5311-1	3.60	3.24	3.96	0.265	0.020	2.50	
1N5312-1	3.90	3.51	4.29	0.255	0.017	2.60	
1N5313-1	4.30	3.87	4.73	0.245	0.014	2.75	100
1N5314-1	4.70	4.23	5.17	0.235	0.012	2.90	
1N7048-1	5.10	4.59	5.61	100	4.0	3.67	80
1N7049-1	5.60	5.04	6.16	90	4.0	4.03	80
1N7050-1	6.20	5.58	6.82	80	3.0	4.46	70
1N7051-1	6.80	6.12	7.48	70	2.0	4.90	70
1N7052-1	7.50	6.75	8.25	50	1.5	5.40	60
1N7053-1	8.20	7.38	9.02	30	1.5	5.90	60
1N7054-1	9.10	8.19	10.01	20	1.0	6.55	50
1N7055-1	10.00	9.00	11.10	10	1.0	7.20	50

^{4.} Z_S is derived by superimposing a 90 Hz RMS signal equal to 10% of V_S on V_S .

^{5.} Z_K is derived by superimposing a 90 HZ RMS signal equal to 10% of V_K on V_K .

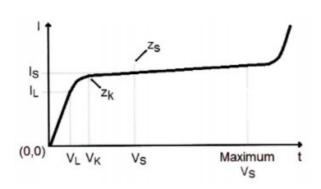


0.5 W Current Regulators

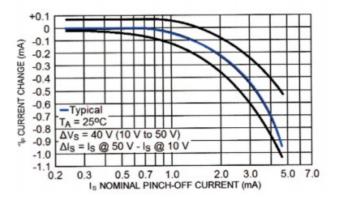
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Typical Performance Curves

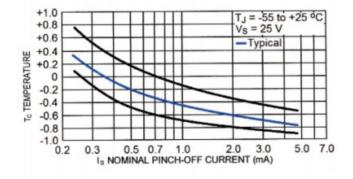
Current Regulator Characteristics



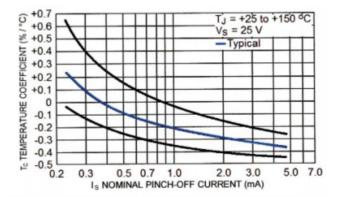
Current Regulator Factor



Temperature Coefficient



Output Return Loss

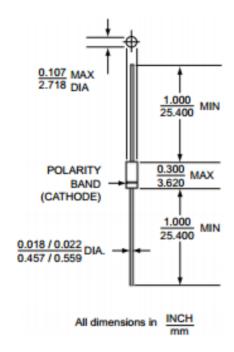




0.5 W Current Regulators

Rev. V1

Hermetically Sealed Glass, DO-7



Lead Material: copper clad steel

Lead Finish: tin/lead

Marking: part number and cathode band

Weight: 0.2 grams

Polarity: diode to be operated with the cathode band end negative

Mounting Position: any

1N5283-1 thru 1N5314-1 & 1N7048-1 thru 1N7055-1



0.5 W Current Regulators

Rev. V1

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