CD5283 thru CD5314 & CD7048 thru CD7055
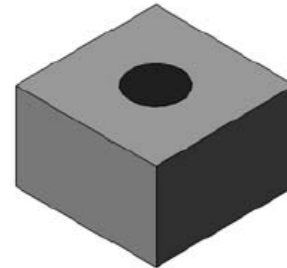
![MACOM logo]

Current Regulator Diode Chips

Rev. V1

Features

- All Junctions Completely Protected with Silicon Dioxide
- Constant Current over Wide Voltage Range
- Electrically Equivalent to 1N5283 - 1N5314 & 1N7048 - 1N7055

Description

These 0.5 W zener diodes are electrically equivalent to the 1N5283 - 1N5314, 1N7048 - 1N7055 series diodes. They are compatible with all wire bonding and die attach techniques with the exception of solder reflow.

These diodes are available in JANHC and JANKC per MIL-PRF-19500/463.

Die

Electrical Specifications: T_A = +25°C (unless otherwise specified)

Part #	Regulator Current V_S = 25 V I_P (mA)			Dynamic Impedance @ V_S = 25 V Z_S (M) (Note 1)	Knee Impedance @ V_K = 6.0 V Z_K (M) (Note 2)	Limiting Voltage @ I_L = 0.8 I_P (min) V_L (V)	Peak Operating Voltage (V)
	Nominal	Minimum	Maximum	Minimum	Minimum	Maximum	
CD5283	0.22	0.198	0.242	25.0	2.75	1.00	100
CD5284	0.24	0.216	0.264	19.0	2.35	1.00	100
CD5285	0.27	0.243	0.297	14.0	1.95	1.00	100
CD5286	0.30	0.270	0.330	9.0	1.60	1.00	100
CD5287	0.33	0.297	0.363	8.0	1.35	1.00	100
CD5288	0.39	0.351	0.429	4.10	1.000	1.05	100
CD5289	0.43	0.387	0.473	3.30	0.870	1.05	100
CD5290	0.47	0.423	0.517	2.70	0.750	1.05	100
CD5291	0.56	0.504	0.616	1.90	0.560	1.10	100
CD5292	0.62	0.558	0.682	1.55	0.470	1.13	100
CD5293	0.68	0.612	0.748	1.35	0.400	1.15	100
CD5294	0.75	0.675	0.825	1.15	0.335	1.20	100
CD5295	0.82	0.738	0.902	1.00	0.290	1.25	100
CD5296	0.91	0.819	1.001	0.88	0240	1.29	100
CD5297	1.00	0.900	1.100	0.80	0.205	1.35	100
CD5298	1.10	0.99	1.21	0.70	0.180	1.40	100
CD5299	1.20	1.08	1.32	0.64	0.155	1.45	100

(Continued next page)

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

For further information and support please visit:
*https://www.macom.com/support*

MACOM™

Current Regulator Diode Chips

Rev. V1

Electrical Specifications: T_A = +25°C (unless otherwise specified)

Part #	Regulator Current V_S = 25 V I_P (mA)			Dynamic Impedance @ V_S = 25 V Z_S (M) (Note 1)	Knee Impedance @ V_K = 6.0 V Z_K (M) (Note 2)	Limiting Voltage @ I_L = 0.8 I_P (min) V_L (V)	Peak Operating Voltage (V)
	Nominal	Minimum	Maximum	Minimum	Minimum	Maximum	
CD5300	1.30	1.17	1.43	0.58	0.135	1.50	100
CD5301	1.40	1.26	1.54	0.54	0.115	1.55	100
CD5302	1.50	1.35	1.65	0.51	0.105	1.60	100
CD5303	1.60	1.44	1.76	0.475	0.092	1.65	100
CD5304	1.80	1.62	1.98	0.420	0.074	1.75	100
CD5305	2.00	1.80	2.20	0.395	0.061	1.85	100
CD5306	2.20	1.98	2.42	0.370	0.052	1.95	100
CD5307	2.40	2.16	2.54	0.345	0.044	2.00	100
CD5308	2.70	2.43	2.97	0.320	0.035	2.15	100
CD5309	3.00	2.70	3.30	0.300	0.029	2.25	100
CD5310	3.30	2.97	3.63	0.280	0.024	2.35	100
CD5311	3.60	3.24	3.96	0.265	0.020	2.50	100
CD5312	3.90	3.51	4.29	0.255	0.017	2.60	100
CD5313	4.30	3.87	4.73	0.245	0.014	2.75	100
CD5314	4.70	4.23	5.17	0.235	0.012	2.90	100
CD7048	5.10	4.59	5.61	100	4.0	3.67	80
CD7049	5.60	5.04	6.16	90	4.0	4.03	80
CD7050	6.20	5.58	6.82	80	3.0	4.46	70
CD7051	6.80	6.12	7.48	70	2.0	4.90	70
CD7052	7.50	6.75	8.25	50	15	5.40	60
CD7053	8.20	7.38	9.02	30	1.5	5.90	60
CD7054	9.10	8.19	10.01	20	1.0	6.55	50
CD7055	10.00	9.00	11.10	10	1.0	7.20	50

1. Z_S is derived by superimposing A 90 Hz RMS signal equal to 10% of V_T on V_T.
2. Z_K is derived by superimposing A 90Hz RMS signal equal to 10% of V_K on V_K.

For further information and support please visit:
https://www.macom.com/support

Temperature Coefficient
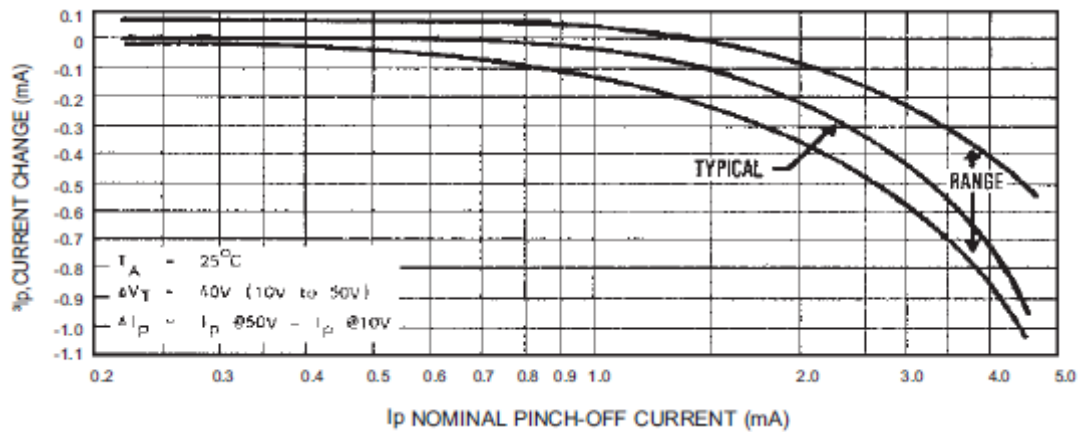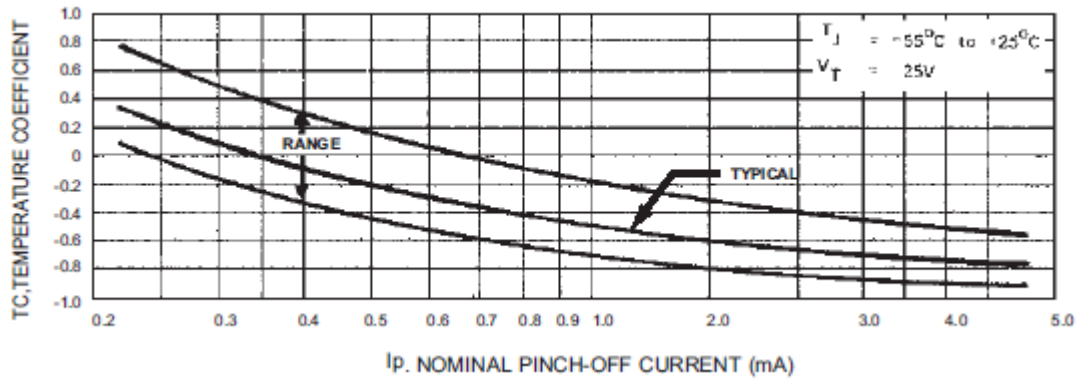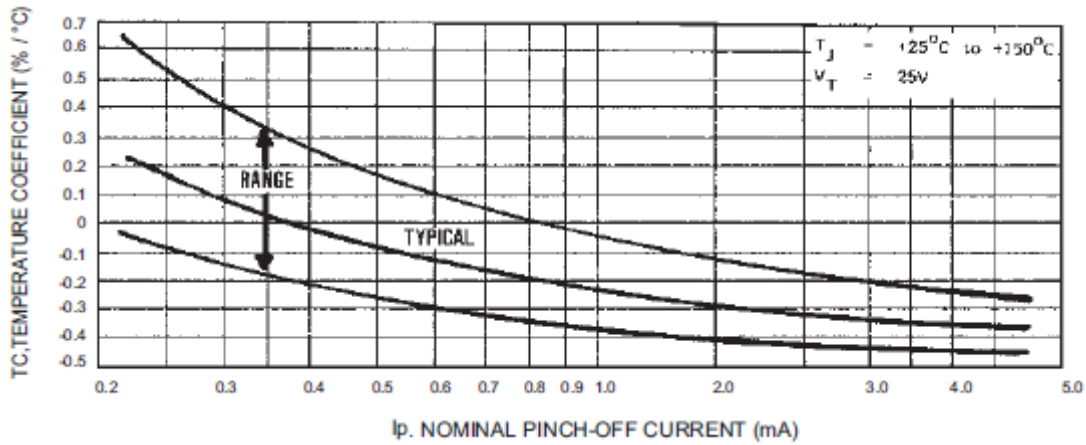
Absolute Maximum Ratings[3,4]

Parameter	Absolute Maximum
Operating Temperature	-65°C to +175°C
Storage Temperature	-65°C to +175°C

3. Exceeding any one or combination of these limits may cause permanent damage to this device.
4. MACOM does not recommend sustained operation near these survivability limits.

Die

Metallization: Top: (anode) AL
                  Back: (cathode) Au
AL Thickness: 25,000 Å Minimum
Gold Thickness: 4,000 Å Minimum
Chip Thickness: 10 mils
Circuit Layout Data: For Zener operation, cathode must be operated positive with respect to anode.

5

M/A-COM Technology Solutions Inc. (MACOM) and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.
Visit www.macom.com for additional data sheets and product information.

For further information and support please visit:
https://www.macom.com/support