



Current Limiting Diode

CCL0035 Thru CCL5750

JEDEC DO-35 Case

FEATURES:

- LOW COST
- HIGH RELIABILITY
- SMALLER CASE SIZE THAN COMPETITION
- SPECIAL SELECTIONS AVAILABLE
- SUPERIOR LOT-TO-LOT CONSISTENCY
- SURFACE MOUNT DEVICES AVAILABLE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CCL0035 series types are silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective DO-35 double plug case which provides many benefits to the user, including space savings and improved thermal characteristics. Special selections of I_P (regulator current) are available for critical applications. This series is the most cost-effective of the current limiting diode product family.

MAXIMUM RATINGS: ($T_L = 75^\circ\text{C}$)

	SYMBOL		UNITS
Peak Operating Voltage	POV	100	V
Power Dissipation	P_D	600	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS: ($T_A = 25^\circ\text{C}$)

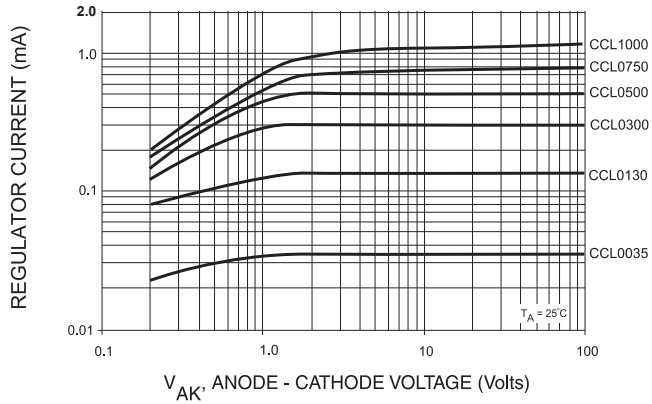
TYPE NO.	REGULATOR CURRENT (1)			DYNAMIC IMPEDANCE	KNEE IMPEDANCE	LIMITING VOLTAGE	TEMPERATURE COEFFICIENT
	$I_P @ V_T = 25\text{V}$			$Z_T @ V_T = 25\text{V}$	$Z_K @ V_K = 6.0\text{V}$	$V_L @ I_L = 0.8 I_P \text{ MIN}$	TC*
	mA			$\text{M}\Omega$	$\text{M}\Omega$	V	% / $^\circ\text{C}$
	MIN	NOM	MAX	MIN	MIN	MAX	
CCL0035	0.010	0.035	0.060	8.0	4.0	0.4	+2.10 to +0.10
CCL0130	0.050	0.130	0.210	6.0	2.0	0.6	+2.10 to +0.10
CCL0300	0.200	0.310	0.420	4.0	1.0	0.8	+0.40 to -0.20
CCL0500	0.400	0.515	0.630	2.0	0.5	1.1	+0.15 to -0.25
CCL0750	0.600	0.760	0.920	1.0	0.2	1.4	0.0 to -0.32
CCL1000	0.880	1.100	1.320	0.65	0.1	1.7	-0.10 to -0.37
CCL1500	1.280	1.500	1.720	0.45	0.07	2.0	-0.13 to -0.40
CCL2000	1.680	2.000	2.320	0.35	0.05	2.3	-0.15 to -0.42
CCL2700	2.280	2.690	3.100	0.30	0.03	2.7	-0.18 to -0.45
CCL3500	3.000	3.550	4.100	0.25	0.02	3.2	-0.20 to -0.47
CCL4500	3.900	4.500	5.100	0.20	0.01	3.7	-0.22 to -0.50
CCL5750	5.000	5.750	6.500	0.05	0.005	4.5	-0.25 to -0.53

(1) PULSED METHOD. PULSE WIDTH (ms) = $\frac{27.5}{I_P \text{ NOM (mA)}}$

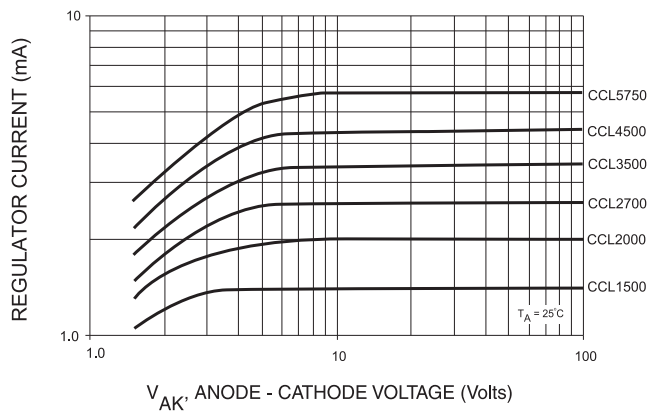
* The Temperature Coefficient is measured between $+25^\circ\text{C}$ and $+50^\circ\text{C}$

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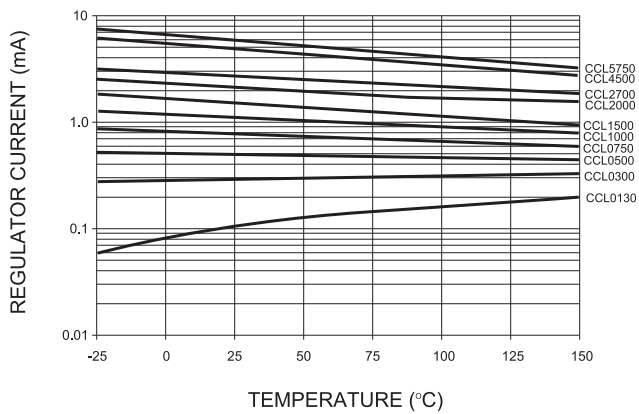
Typical Regulator Current vs. Voltage



Typical Regulator Current vs. Voltage



Typical Regulator Current vs. Temperature





Current Limiting Diode

1N5283 Thru 1N5314

JEDEC DO-35 Case

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- SUPERIOR LOT-TO-LOT CONSISTENCY
- SURFACE MOUNT DEVICES AVAILABLE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 1N5283 series types are silicon field effect current regulator diodes designed for applications requiring a constant current over a wide voltage range. These devices are manufactured in the cost effective DO-35 double plug case which provides many benefits to the user, including space savings and improved thermal characteristics. Special selection of I_P (regulator current) are available for critical applications. Lower cost units are available in the CCL0035 series.

MAXIMUM RATINGS: ($T_L = 75^\circ\text{C}$)

Peak Operating Voltage

Power Dissipation

Junction Temperature

SYMBOL

POV

P_D

T_J, T_{stg}

100

600

-65 to +200

UNITS

V

mW

$^\circ\text{C}$

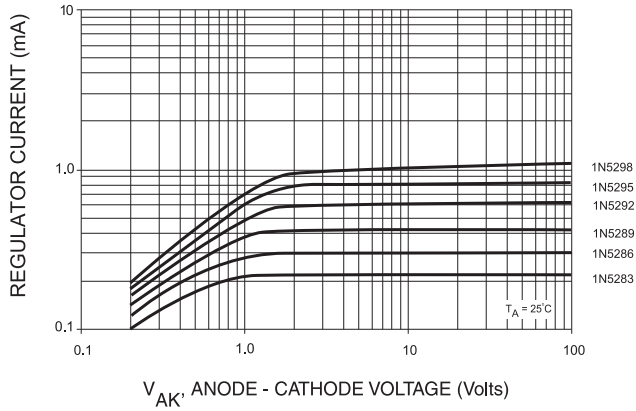
ELECTRICAL CHARACTERISTICS: ($T_A = 25^\circ\text{C}$)

Type	Regulator Current (Note 1) $I_P @ V_T = 25V$			Minimum Dynamic Impedance $Z_T @ V_T = 25V$	Minimum Knee Impedance $Z_K @ V_K = 6.0V$	Maximum Limiting Voltage $V_L @ I_L = 0.8 \times I_P \text{ MIN}$
	MIN mA	NOM mA	MAX mA	$M\Omega$	$M\Omega$	V
1N5283	0.187	0.22	0.253	25	2.75	1.0
1N5284	0.204	0.24	0.276	19	2.35	1.0
1N5285	0.230	0.27	0.311	14	1.95	1.0
1N5286	0.255	0.30	0.345	9.0	1.60	1.0
1N5287	0.281	0.33	0.380	6.6	1.35	1.0
1N5288	0.332	0.39	0.449	4.1	1.00	1.05
1N5289	0.366	0.43	0.495	3.3	0.87	1.05
1N5290	0.400	0.47	0.541	2.7	0.75	1.05
1N5291	0.476	0.56	0.644	1.90	0.56	1.10
1N5292	0.527	0.62	0.713	1.55	0.47	1.13
1N5293	0.578	0.68	0.782	1.35	0.40	1.15
1N5294	0.638	0.75	0.863	1.15	0.335	1.20
1N5295	0.697	0.82	0.943	1.00	0.29	1.25
1N5296	0.774	0.91	1.05	0.88	0.24	1.29
1N5297	0.850	1.00	1.15	0.80	0.205	1.35
1N5298	0.935	1.10	1.27	0.70	0.18	1.40
1N5299	1.02	1.20	1.38	0.640	0.155	1.45
1N5300	1.11	1.30	1.50	0.580	0.135	1.50
1N5301	1.19	1.40	1.61	0.540	0.115	1.55
1N5302	1.28	1.50	1.73	0.510	0.105	1.60
1N5303	1.36	1.60	1.84	0.475	0.092	1.65
1N5304	1.53	1.80	2.07	0.420	0.074	1.75
1N5305	1.70	2.00	2.30	0.395	0.061	1.85
1N5306	1.87	2.20	2.53	0.370	0.052	1.95
1N5307	2.04	2.40	2.76	0.345	0.044	2.00
1N5308	2.30	2.70	3.11	0.320	0.035	2.15
1N5309	2.55	3.00	3.45	0.300	0.029	2.25
1N5310	2.81	3.30	3.80	0.280	0.024	2.35
1N5311	3.06	3.60	4.14	0.265	0.020	2.50
1N5312	3.32	3.90	4.49	0.255	0.017	2.60
1N5313	3.66	4.30	4.95	0.245	0.014	2.75
1N5314	4.00	4.70	5.41	0.235	0.012	2.90

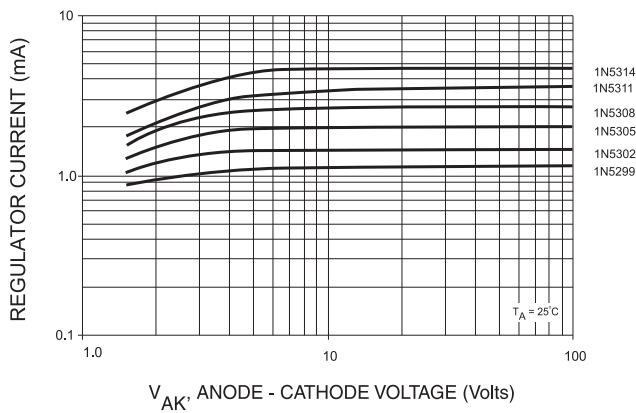
(1) PULSED METHOD. PULSE WIDTH (ms) = $\frac{27.5}{I_P \text{ NOM (mA)}}$

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Typical Regulator Current vs. Voltage



Typical Regulator Current vs. Voltage



Typical Regulator Current vs. Temperature

