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CURRENT REGULATOR DIODES

A CRD is a diode which supplies constant current to an electronic circuit, even when power supply voltage fluctuations or load impedance fluctuations occur. A CRD is used for current stabilization and current limiting.

JEDEC REGISTERED LINE

DO-35 Package High Source Impedance
Standard Tolerance = +/- 10%
Constant Current Over Wide Voltage Range

Part Number	Ip mA Nom.	VK V Max.	Zt Min Meg Ohm	Zk Min Meg Ohm	Base Type
1N5283	0.22	1.00	25.0	2.750	E-301
1N5284	0.24	1.00	19.0	2.350	E-301
1N5285	0.27	1.00	14.0	1.950	E-301
1N5286	0.30	1.00	9.0	1.600	E-301
1N5287	0.33	1.00	6.6	1.350	E-301
1N5288	0.39	1.05	4.10	1.000	E-301
1N5289	0.43	1.05	3.30	0.870	E-501
1N5290	0.47	1.05	2.70	0.750	E-501
1N5291	0.56	1.10	1.90	0.560	E-501
1N5292	0.62	1.13	1.55	0.470	E-701
1N5293	0.68	1.15	1.35	0.400	E-701
1N5294	0.75	1.20	1.15	0.335	E-701
1N5295	0.82	1.25	1.00	0.290	E-701
1N5296	0.91	1.29	0.880	0.240	E-102
1N5297	1.00	1.35	0.800	0.205	E-102
1N5298	1.10	1.40	0.700	0.180	E-102
1N5299	1.20	1.45	0.640	0.155	E-102
1N5300	1.30	1.50	0.580	0.135	E-152
1N5301	1.40	1.55	0.540	0.115	E-152
1N5302	1.50	1.60	0.510	0.105	E-152
1N5303	1.60	1.65	0.475	0.092	E-152
1N5304	1.80	1.75	0.420	0.074	E-202
1N5305	2.00	1.85	0.395	0.061	E-202
1N5306	2.20	1.95	0.370	0.052	E-202
1N5307	2.40	2.00	0.345	0.044	E-272
1N5308	2.70	2.15	0.320	0.035	E-272
1N5309	3.00	2.25	0.300	0.029	E-272
1N5310	3.30	2.35	0.280	0.024	E-352
1N5311	3.60	2.50	0.265	0.020	E-352
1N5312	3.90	2.60	0.255	0.017	E-452
1N5313	4.30	2.75	0.245	0.014	E-452
1N5314	4.70	2.90	0.235	0.012	E-452

Ip = Pinch-Off Current: measured by pulse at 25 C
Vk = Voltage which produces 0.81 Ip or greater current
Zt = Minimum AC impedance when small AC signal voltage of 10 KHz is added to 25 Volt DC bias.
Zk = Minimum knee impedance when the small AC signal voltage is added to Vk.

HIGH CURRENT LINE

DO-35 Package High Source Impedance
Standard Tolerance = +/- 10%
Constant Current Over Wide Voltage Range

Part Number	Ip mA Nom.	Vk V Max.	Zt Min K Ohm	Zk Min K Ohm	Base Type
CR250	5.1	3.67	40	12	E-562
CR251	5.6	4.03	40	12	E-562
CR252	6.2	4.50	40	12	E-562
CR253	6.8	3.00	320	10	E-822
CR254	7.5	3.10	320	10	E-822
CR255	8.2	3.20	170	10	E-103
CR256	9.1	3.40	170	9	E-103
CR257	10.0	3.50	170	9	E-103
CR258	11.0	3.65	80	6	E-123
CR259	12.0	3.80	80	5	E-123
CR260	13.0	3.97	30	4	E-153
CR261	14.0	4.14	30	3	E-153
CR262	15.0	4.31	30	2	E-153

ECONOMY LINE

DO-35 & MELF Packages High Source Impedance
Constant Current Over Wide Voltage Range
Connect in parallel for higher current

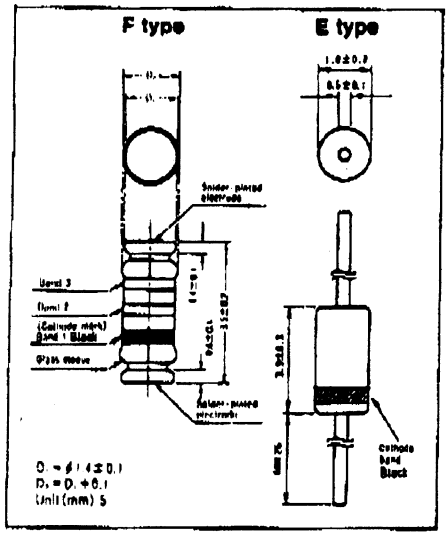
Part Number	Ip - milliamps Min.	Max.	VK Max Volts	Zt Min Meg Ohm
E-101L	0.01	0.08	0.4	8.00
E-101	0.05	0.21	0.5	6.00
E-301	0.20	0.42	0.8	4.00
E-501	0.40	0.63	1.1	2.00
E-701	0.60	0.92	1.4	1.00
E-102	0.88	1.32	1.7	0.65
E-152	1.28	1.72	2.0	0.40
E-202	1.68	2.32	2.3	0.25
E-272	2.28	3.10	2.7	0.15
E-352	3.00	4.10	3.2	0.10
E-452	3.90	5.10	3.7	0.07
E-562	5.00	6.50	4.5	0.04
E-822	6.56	9.84	3.1	0.32
E-103	8.00	12.0	3.5	0.17
E-123	9.60	14.4	3.8	0.08
E-153	12.00	18.0	4.3	0.03

This line of devices is available in surface mount MELF package. Change prefix from "E" to "F".

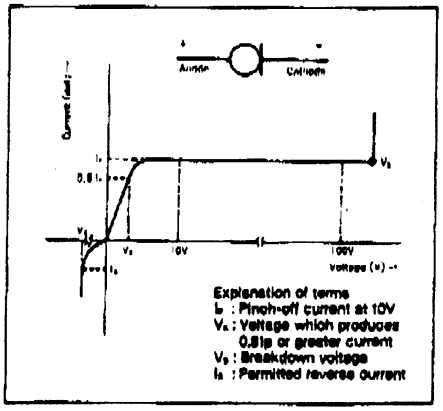
NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However, NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Quality Semi-Conductors

CURRENT REGULATOR DIODES



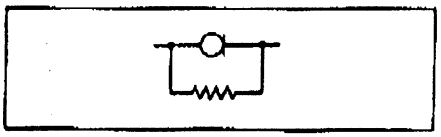
Basic characteristics



The compensation of current reduction due to self heating

Placing resistors in parallel with CRD can correct any current decrease when the applied voltage increases. The following values are typical for correction resistors.

102	1 MΩ
152	390 kΩ
202	240 kΩ
272	120 kΩ
332	82 kΩ

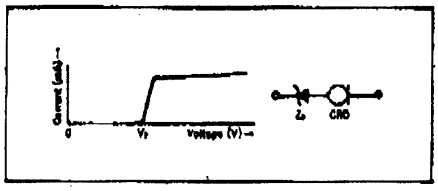


CRD in parallel

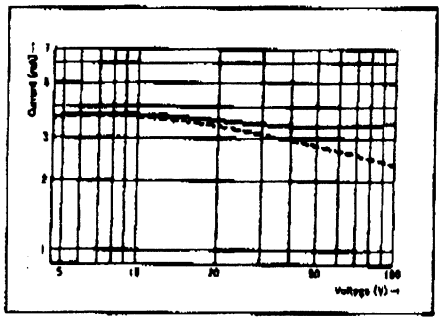
The use of CRD in parallel increases their current handling capabilities.

Increasing the voltage range using a zener diode

Connecting zener diodes in series with the line ensures that the current is constant in high-voltage area.



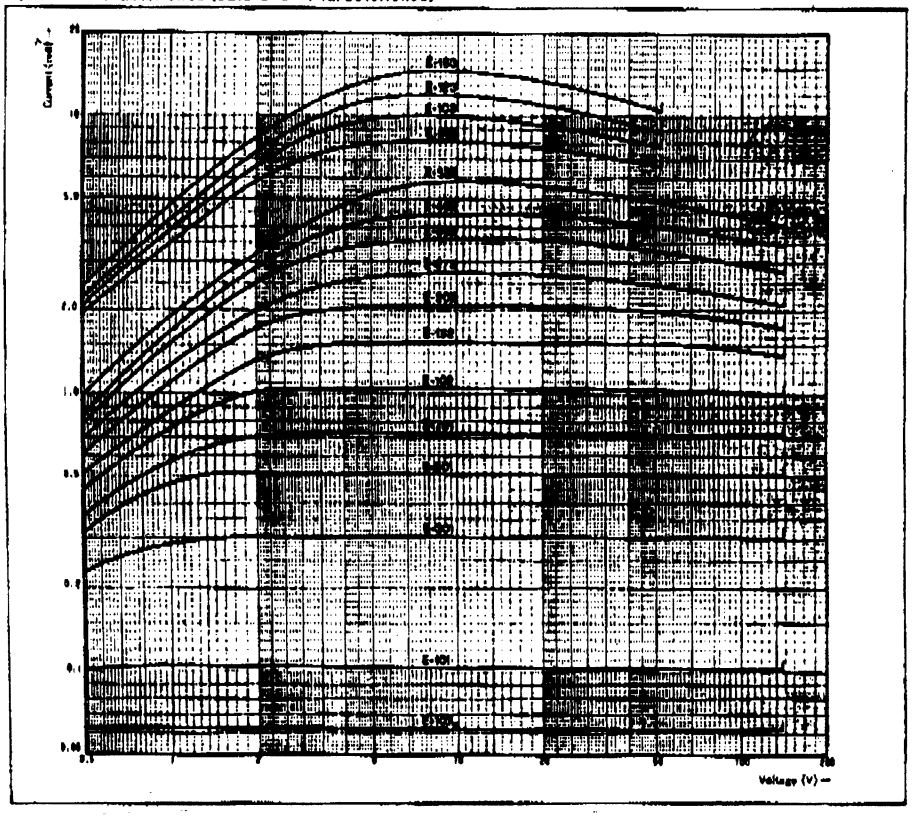
Compensative resistor is not necessary if the current value is less then 1 mA.



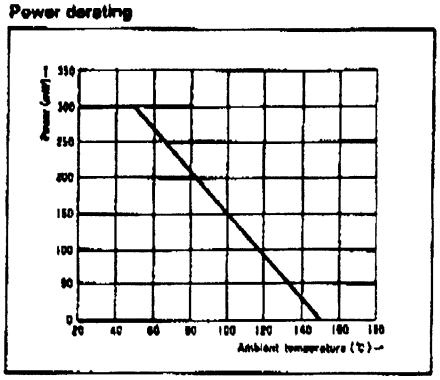
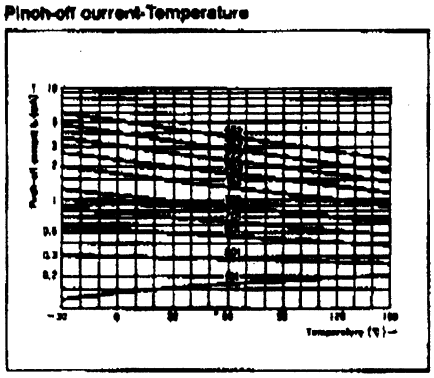
Maximum ratings

Type	E type	F type
Rating power	300mW	400mW
Thermal resistance	300°C/W	150°C/W
Maximum rating voltage	100V	
Reverse current	50mA	
Operating temp.	−30°C~150°C	

Dynamic characteristics (saturation characteristics)



Power derating



Pinch-off current-Temperature