DIGITRON SEMICONDUCTORS

1N5283-1N5314, 1N7048-1N7055 CURRENT REGULATOR DIODES

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).
Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

MAXIMUM RATINGS

Parameters	Symbol	Value	Unit
Junction and storage temperature range	T_J, T_{stg}	-65 to +175	°C
Thermal resistance, junction to lead @ L = 0.375"	$R_{\Theta JL}$	250	°C/W
Thermal impedance	$Z_{\Theta JX}$	25	°C/W
Steady state power dissipation @ T_L = 50°C, L = 3/8"(1):	P_D	500	mW
Working peak voltage	V_{WM}	100	Volts
Solder pad temperature @ 10 seconds maximum	T_{SP}	260	°C

Note 1: Derate at 4mW/°C above 50°C.

ELECTRICAL CHARACTERISTICS (@ 25°C, unless otherwise specified)

Part number	Regulator current I_P (mA) @ V_S = 25V			Minimum dynamic impedance @ V_S = 25V Z_S (MΩ)(2)	Minimum knee impedance @ V_K = 6.0 V Z_K = (MΩ)(3)	Maximum limiting voltage @ I_L = 0.8 I_S(min) V_L (volts)	Peak operating voltage volts
	NOM	MIN	MAX				
1N5283	0.22	0.198	0.242	25.0	2.75	1.00	100
1N5284	0.24	0.216	0.264	19.0	2.35	1.00	100
1N5285	0.27	0.243	0.297	14.0	1.95	1.00	100
1N5286	0.30	0.270	0.330	9.0	1.60	1.00	100
1N5287	0.33	0.297	0.363	8.0	1.35	1.00	100
1N5288	0.39	0.351	0.429	4.10	1.00	1.05	100
1N5289	0.43	0.387	0.473	3.30	0.870	1.05	100
1N5290	0.47	0.423	0.517	2.70	0.750	1.05	100
1N5291	0.56	0.504	0.616	1.90	0.560	1.10	100
1N5292	0.62	0.558	0.682	1.55	0.470	1.13	100
1N5293	0.68	0.612	0.748	1.35	0.400	1.15	100
1N5294	0.75	0.675	0.825	1.15	0.335	1.20	100
1N5295	0.82	0.738	0.902	1.00	0.290	1.25	100
1N5296	0.91	0.819	1.001	0.880	0.240	1.29	100
1N5297	1.00	0.900	1.100	0.800	0.205	1.35	100
1N5298	1.10	0.990	1.210	0.700	0.180	1.40	100
1N5299	1.20	1.08	1.32	0.640	0.155	1.45	100
1N5300	1.30	1.17	1.43	0.580	0.135	1.50	100
1N5301	1.40	1.26	1.54	0.540	0.115	1.55	100
1N5302	1.50	1.35	1.65	0.510	0.105	1.60	100
1N5303	1.60	1.44	1.76	0.475	0.092	1.65	100
1N5304	1.80	1.62	1.98	0.420	0.074	1.75	100
1N5305	2.00	1.80	2.20	0.395	0.061	1.85	100
1N5306	2.20	1.98	2.42	0.370	0.052	1.95	100
1N5307	2.40	2.16	2.54	0.345	0.044	2.00	100
1N5308	2.70	2.43	2.97	0.320	0.035	2.15	100
1N5309	3.00	2.70	3.30	0.300	0.029	2.25	100
1N5310	3.30	2.97	3.63	0.280	0.024	2.35	100
1N5311	3.60	3.24	3.96	0.265	0.020	2.50	100
1N5312	3.90	3.51	4.29	0.255	0.017	2.60	100
1N5313	4.30	3.87	4.73	0.245	0.014	2.75	100

144 Market Street
Kenilworth NJ 07033 USA

phone +1.908.245-7200
fax +1.908.245-0555

sales@digitroncorp.com
www.digitroncorp.com

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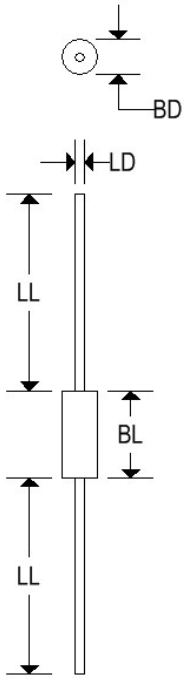
ELECTRICAL CHARACTERISTICS (@ 25°C, unless otherwise specified)

Part number	Regulator current I_P (mA) @ V_S = 25V			Minimum dynamic impedance @ V_S = 25V Z_S (MΩ)(2)	Minimum knee impedance @ V_K = 6.0 V Z_K (MΩ)(3)	Maximum limiting voltage @ I_L = 0.8 I_S(min) V_L (volts)	Peak operating voltage volts
	NOM	MIN	MAX				
1N5314	4.70	4.23	5.17	0.235	0.012	2.90	100
1N7048	5.10	4.59	5.61	100	4.0	3.67	80
1N7049	5.60	5.04	6.16	90	4.0	4.03	80
1N7050	6.20	5.58	6.82	80	3.0	4.46	70
1N7051	6.80	6.12	7.48	70	2.0	4.90	70
1N7052	7.50	6.75	8.25	50	1.5	5.40	60
1N7053	8.20	7.38	9.02	30	1.5	5.90	60
1N7054	9.10	8.19	10.01	20	1.0	6.55	50
1N7055	10.00	9.00	11.10	10	1.0	7.20	50

Note 2: Z_S is derived by superimposing a 90Hz RMS signal equal to 10% of V_S on V_S.
Note 3: Z_K is derived by superimposing a 90Hz RMS signal equal to 10% of V_K on V_K.

MECHANICAL CHARACTERISTICS

Case:	DO-35
Marking:	Body painted, alpha-numeric
Polarity:	Cathode Band



	DO-35			
	Inches		Millimeters	
	Min	Max	Min	Max
BD	0.055	0.090	1.400	2.290
BL	0.120	0.200	3.050	5.080
LD	0.018	0.022	0.460	0.560
LL	1.000	1.500	25.400	38.100

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D I G I T R O N S E M I C O N D U C T O R S

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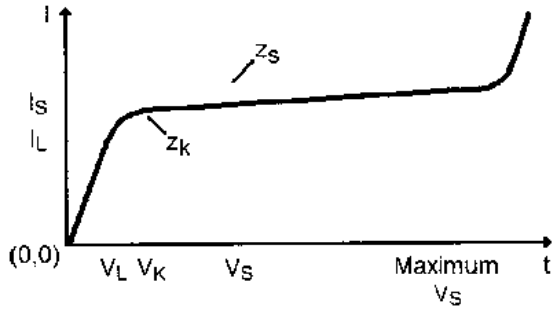


FIGURE 1 – CURRENT-REGULATOR CHARACTERISTICS

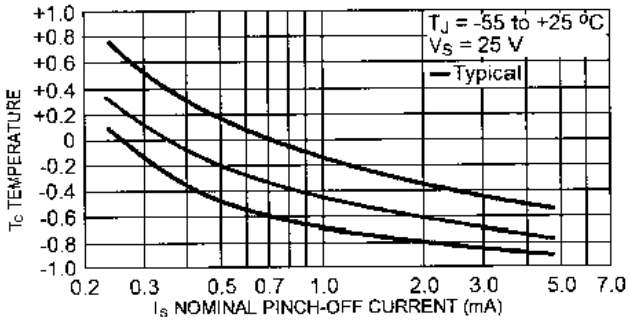


FIGURE 3 – TEMPERATURE COEFFICIENT

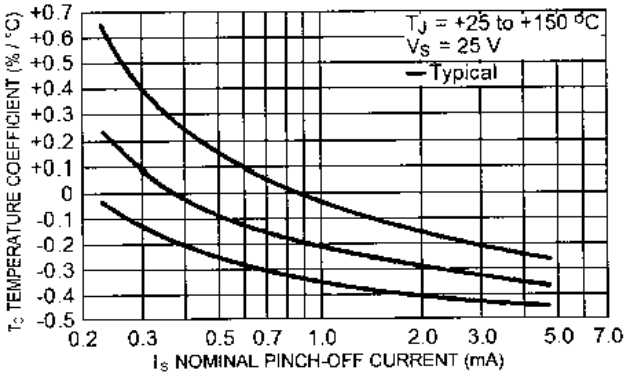


FIGURE 2 – TEMPERATURE COEFFICIENT

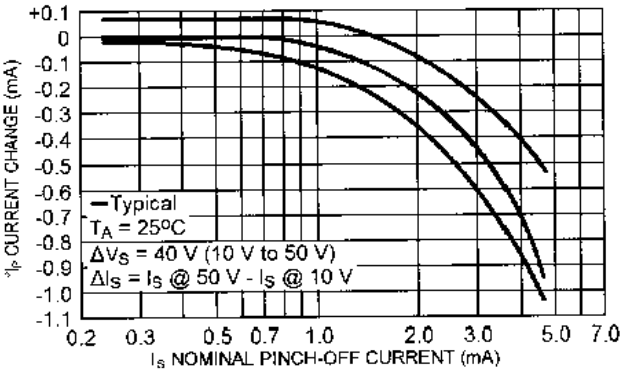


FIGURE 4 – CURRENT REGULATION FACTOR

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