

1PMT5283 thru 1PMT5314

CURRENT REGULATOR DIODES



D0-216

FEATURES:

- Surface-mount equivalent to 1N5283 thru 1N5314 series
- Popular Microsemi Powermite® surface-mount package
- Nominal current regulation from 0.22 and 4.70 mA
- Broad operating voltage
- Constructed with an Oxide Passivated All Diffused Die
- Full metallic bottom eliminates flux entrapment
- Integral Heat Sink Locking Tabs for excellent thermal dissipation and improved current regulation

MAXIMUM RATINGS:

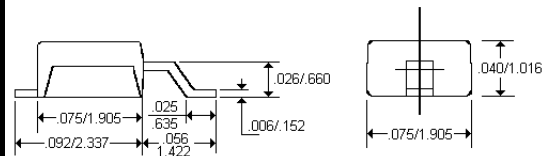
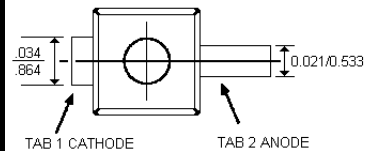
- Operating and Storage Temperature: -55°C to +150°C
- DC Power Dissipation: 600mW @ $T_L = 135^\circ\text{C}$
- Power Derating: 40mW/°C @ $T_L > 135^\circ\text{C}$
- Peak operating voltage: 100 Volts

MECHANICAL CHARACTERISTICS

- Terminals: Leads tin plated
- Thermal resistance: 30°C/W junction to Tab 1
- Polarity: Cathode indicated by a band
- Packaging: Tape and Reel (EIA Standard RS-481)
- Weight 0.016 gram
- Mounting position any way

PACKAGING

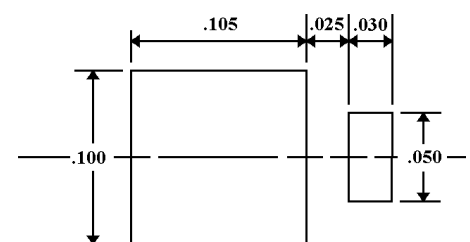
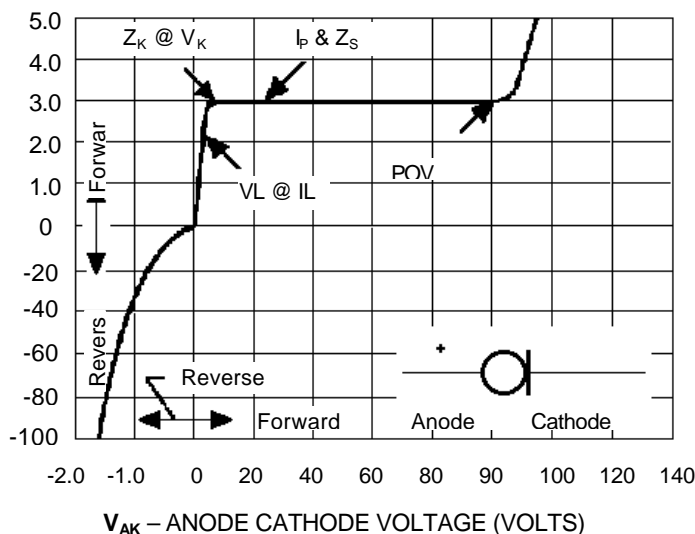
- Tape and Reel Standard 481
- 7 inch Reel 3,000 Pieces
- 13 inch Reel 12,000 Pieces



INCHES/MM

All dimensions +/- .005 inches/0.127mm

TYPICAL CURRENT REGULATOR CHARACTERISTICS



Mounting Pad Dimensions in Inches

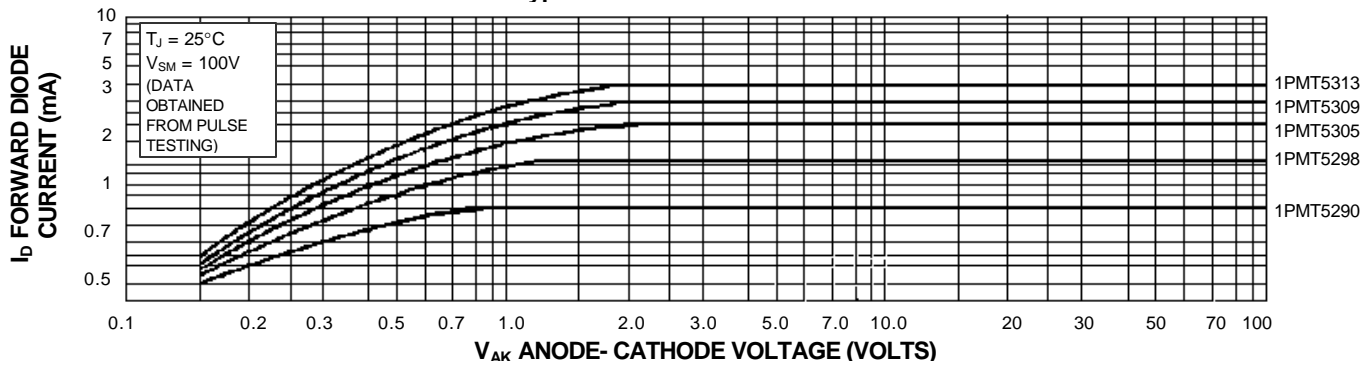
Electrical Characteristics @ TL=30°C

PART NUMBER	REGULATOR CURRENT I_p (mA) @ $V_S = 25V$			MINIMUM DYNAMIC IMPEDANCE @ $V_S = 25V$ Z_S (M) (NOTE 1)	MINIMUM KNEE IMPEDANCE @ $V_K = 6.0V$ Z_K (M) (NOTE 2)	MAXIMUM LIMITING VOLTAGE @ $I_L = 0.8 I_p$ (min) V_L (VOLTS)
	NOM	MIN	MAX			
1PMT5283	0.22	0.198	0.242	25.0	2.75	1.00
1PMT5284	0.24	0.216	0.264	19.0	2.35	1.00
1PMT5285	0.27	0.243	0.297	14.0	1.95	1.00
1PMT5286	0.30	0.270	0.330	9.0	1.60	1.00
1PMT5287	0.33	0.297	0.363	6.6	1.35	1.00
1PMT5288	0.39	0.351	0.429	4.10	1.00	1.05
1PMT5289	0.43	0.387	0.473	3.30	0.870	1.05
1PMT5290	0.47	0.423	0.517	2.70	0.750	1.05
1PMT5291	0.56	0.504	0.616	1.90	0.560	1.10
1PMT5292	0.62	0.558	0.682	1.55	0.470	1.13
1PMT5293	0.68	0.612	0.748	1.35	0.400	1.15
1PMT5294	0.75	0.675	0.825	1.15	0.335	1.20
1PMT5295	0.82	0.738	0.902	1.00	0.290	1.25
1PMT5296	0.91	0.819	1.001	0.880	0.240	1.29
1PMT5297	1.00	0.900	1.100	0.800	0.205	1.35
1PMT5298	1.10	0.990	1.210	0.700	0.180	1.40
1PMT5299	1.20	1.06	1.32	0.640	0.155	1.45
1PMT5300	1.30	1.17	1.43	0.580	0.135	1.50
1PMT5301	1.40	1.26	1.54	0.540	0.115	1.55
1PMT5302	1.50	1.35	1.65	0.510	0.105	1.60
1PMT5303	1.60	1.44	1.76	0.475	0.092	1.65
1PMT5304	1.80	1.62	1.98	0.420	0.074	1.75
1PMT5305	2.00	1.80	2.20	0.395	0.061	1.85
1PMT5306	2.20	1.98	2.42	0.370	0.052	1.95
1PMT5307	2.40	2.16	2.64	0.345	0.044	2.00
1PMT5308	2.70	2.43	2.97	0.320	0.035	2.15
1PMT5309	3.00	2.70	3.30	0.300	0.029	2.25
1PMT5310	3.30	2.97	3.63	0.280	0.024	2.35
1PMT5311	3.60	3.24	3.96	0.265	0.020	2.50
1PMT5312	3.90	3.51	4.29	0.255	0.017	2.60
1PMT5313	4.30	3.87	4.73	0.245	0.014	2.75
1PMT5314	4.70	4.23	5.17	0.235	0.012	2.90

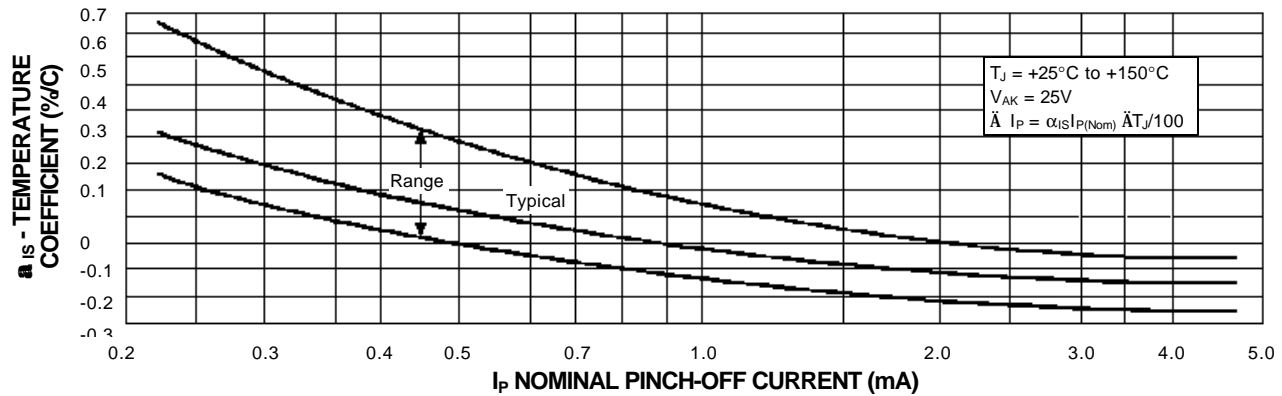
NOTE 1: Z_S is measured by superimposing a 90 Hz rms signal to 10% of V_S on V_S .

NOTE 2: Z_K is derived by superimposing a 90 Hz rms signal to 10% of V_K on V_K .

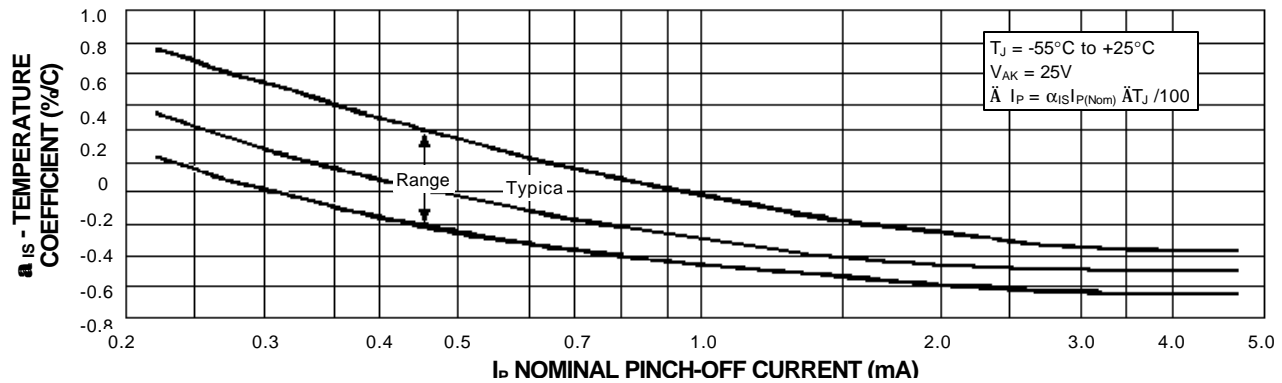
Typical Forward Characteristics



Temperature Coefficient



Temperature Coefficient



SYMBOLS AND DEFINITIONS

- I_b Diode Current
- α_{IS} Current Temperature Coefficient.
- I_P Pinch-off Current: Regulator current at specified Test Voltage, V_S . I_P is some times identified as I_S
- POV Peak Operating Voltage: Maximum voltage to be applied to the device.
- V_K Knee Impedance test voltage: Specified voltage used to establish Knee Impedance
- V_L Limiting Voltage: Measured at I_L , V_L , together with Knee ac Impedance, Z_K , indicates the Knee characteristic of the device
- V_S TEST VOLTAGE: Voltage at which I_P and Z_S are specified
- Z_K Knee ac impedance at Test Voltage: To test Z_K a 90Hz signal V_K with rms value equal to 10% of test voltage V_K is superimposed on V_K : $Z_K = V_K / i_k$ where i_k is the resultant ac current due to v_k . To provide the most constant current from the diode, Z_K should be as high as possible, therefore, a minimum value of Z_K is specified.
- Z_S AC Impedance at Test Voltage: Specified as a minimum value. To test for Z_S , a 90 Hz signal V_S with rms value equal to 10% of test voltage, V_S is superimposed on V_S : $Z_S = v_s / i_s$ where i_s is the current due to v_s .
- I_L Limiting Current 80% of I_P minimum used to determine Limiting Voltage, V_L
- V_{AK} anode to cathode Voltage