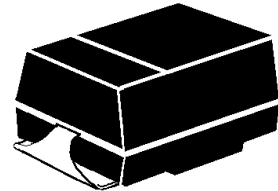


SMAJ5283 thru SMAJ5314

CURRENT REGULATOR DIODES



DO-214AC

FEATURES:

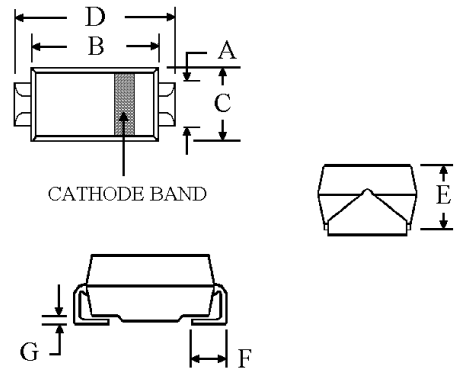
- Surface-mount equivalent to 1N5283 thru 1N5314 series
- Popular SMA Package DO-214AC outline-Small and Rugged
- Nominal Current regulation 0.22 to 4.70 mA
- Broad operating voltage
- Constructed with an Oxide Passivated All Diffused Die
- Good thermal dissipation for current regulation

MAXIMUM RATINGS:

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

MECHANICAL CHARACTERISTICS

- Case: DO-214AC
- Terminals: Leads tin plated
- Thermal resistance: 25°C/W
- Polarity: Cathode indicated by a band
- Packaging: Standard 12 mm tape 2500 per 13 inch reel see (EIA Standard RS-481)
- Weight 0.1 gram

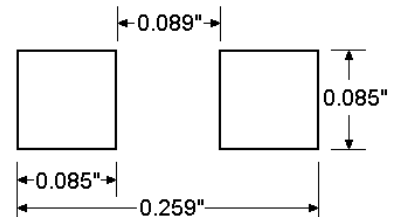


CATHODE BAND

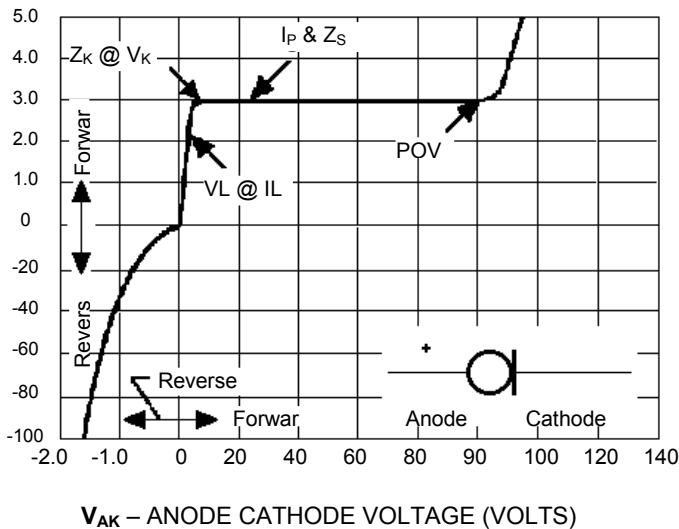
DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
*A	.052	.103	1.32	2.62
*B	.160	.180	4.06	4.57
C	.100	.110	2.54	2.79
D	.194	.216	4.93	5.49
E	.078	.115	1.98	2.92
F	.030	.060	0.76	1.52
G	--	.005	--	0.13

NOTE * INDICATES MAXIMUM DIMENSION IS LARGER THAN STANDARD JEDEC CALL OUT.

DO-214AC PC BOARD FOOTPRINT



TYPICAL CURRENT REGULATOR CHARACTERISTICS



Electrical Characteristics @ TL=30°C

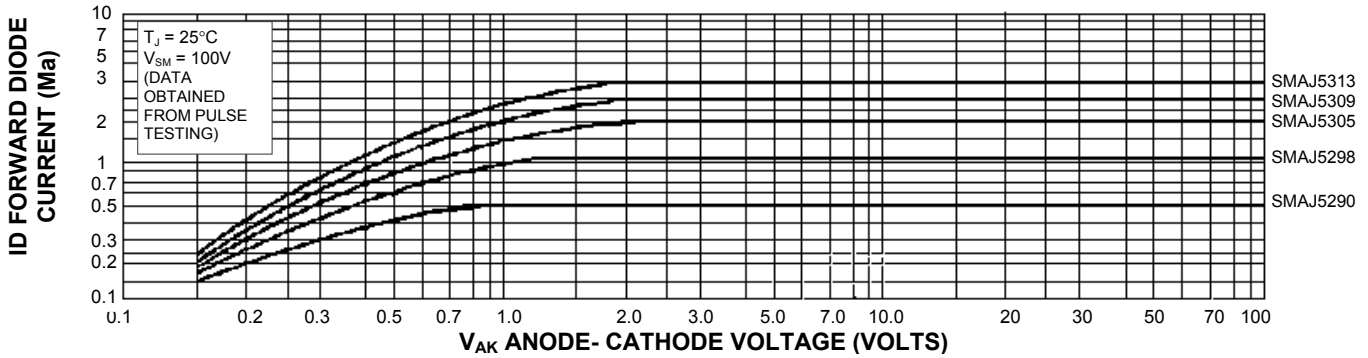
PART NUMBER	REGULATOR CURRENT $I_P(\text{mA})@V_S = 25\text{v}$			MINIMUM DYNAMIC IMPEDANCE $Z_S(\text{M}\Omega)$ (NOTE 1)	MINIMUM KNEE IMPEDANCE $Z_K(\text{M}\Omega)$ (NOTE 2)	MAXIMUM LIMITING VOLTAGE $V_L(\text{VOLTS})$ $@I_L = 0.8 I_P(\text{min})$
	NOM	MIN	MAX			
SMAJ5283	0.22	0.198	0.242	25.0	2.75	1.00
SMAJ5284	0.24	0.216	0.264	19.0	2.35	1.00
SMAJ5285	0.27	0.243	0.297	14.0	1.95	1.00
SMAJ5286	0.30	0.270	0.330	9.0	1.60	1.00
SMAJ5287	0.33	0.297	0.363	6.6	1.35	1.00
SMAJ5288	0.39	0.351	0.429	4.10	1.00	1.05
SMAJ5289	0.43	0.387	0.473	3.30	0.870	1.05
SMAJ5290	0.47	0.423	0.517	2.70	0.750	1.05
SMAJ5291	0.56	0.504	0.616	1.90	0.560	1.10
SMAJ5292	0.62	0.558	0.682	1.55	0.470	1.13
SMAJ5293	0.68	0.612	0.74 8	1.35	0.400	1/15
SMAJ5294	0.75	0.675	0.825	1.15	0.335	1.20
SMAJ5295	0.82	0.738	0.902	1.00	0.290	1.25
SMAJ5296	0.91	0.819	1.001	0.880	0.240	1.29
SMAJ5297	1.00	0.900	1.100	0.800	0.205	1.35
SMAJ5298	1.10	0.990	1.210	0.700	0.180	1.40
SMAJ5299	1.20	1.06	1.32	0.640	0.155	1.45
SMAJ5300	1.30	1.17	1.43	0.580	0.135	1.50
SMAJ5301	1.40	1.26	1.54	0.540	0.115	1.55
SMAJ5302	1.50	1.35	1.65	0.510	0.105	1.60
SMAJ5303	1.60	1.44	1.76	0.475	0.092	1.65
SMAJ5304	1.80	1.62	1.98	0.420	0.074	1.75
SMAJ5305	2.00	1.80	2.20	0.395	0.061	1.85
SMAJ5306	2.20	1.98	2.42	0.370	0.052	1.95
SMAJ5307	2.40	2.16	2.64	0.345	0.044	2.00
SMAJ5308	2.70	2.43	2.97	0.320	0.035	2.15
SMAJ5309	3.00	2.70	3.30	0.300	0.029	2.25
SMAJ5310	3.30	2.97	3.63	0.280	0.024	2.35
SMAJ5311	3.60	3.24	3.96	0.265	0.020	2.50
SMAJ5312	3.90	3.51	4.29	0.255	0.017	2.60
SMAJ5313	4.30	3.87	4.73	0.245	0.014	2.75
SMAJ5314	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 .

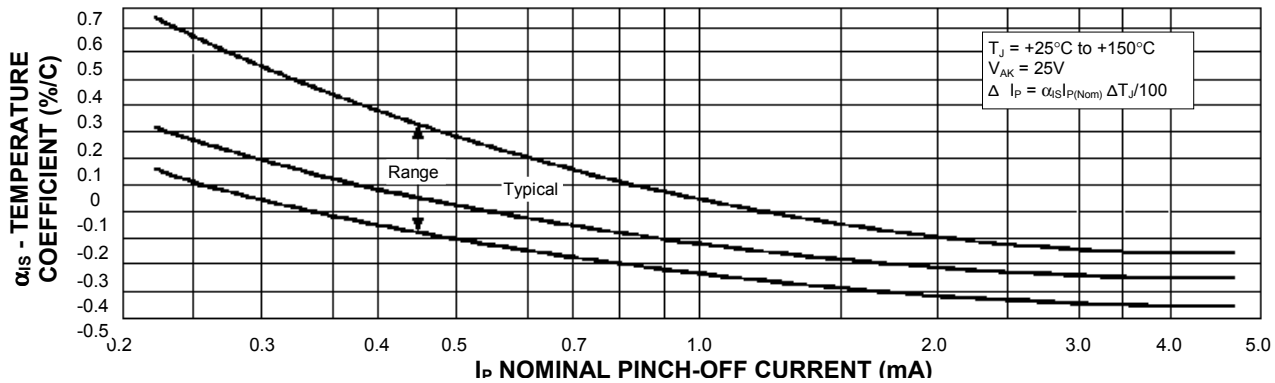
NOTE 2: Z_K is derived by superimposing a 90 Hz rms signal to 10% of V_K on V_K .

ISO 9001 CERTIFIED

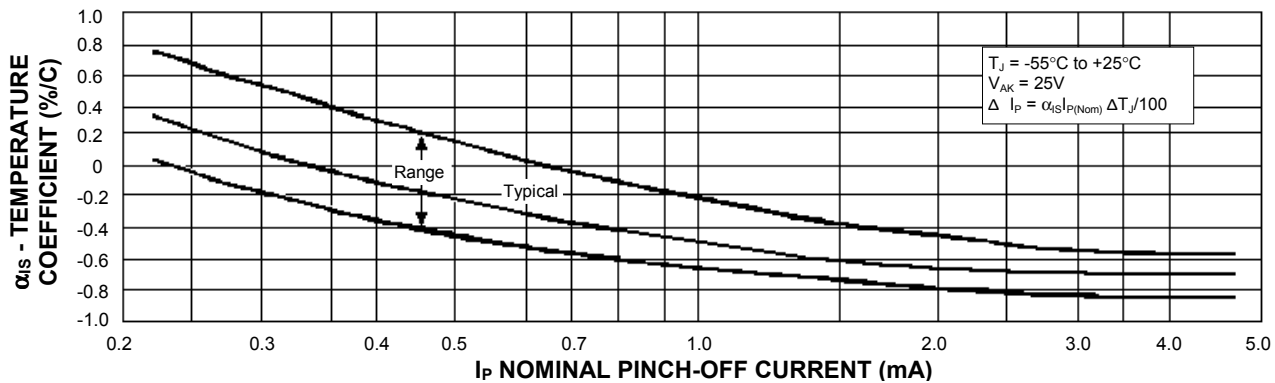
Typical Forward Characteristics



Temperature Coefficient



Temperature Coefficient



SYMBOLS AND DEFINITIONS

- I_D Diode Current
- V_L Limiting Voltage: Measured at I_L , V_L , together with Knee ac Impedance, Z_K , indicates the Knee characteristic of the device
- α_{IS} Current Temperature Coefficient.
- V_{AK} anode to cathode Voltage
- 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_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,

ISO 9001 CERTIFIED