



1N4741A THRU 1M200Z

Glass Passivated Junction Silicon Zener Diode



Voltage Range
11 to 200 Volts
1.0 Watts Peak Power

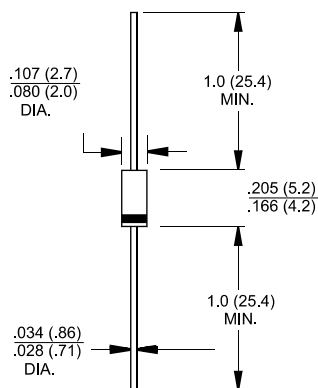
Features

- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Glass passivated junction
- ✧ Low inductance
- ✧ Typical I_R less than $5.0 \mu A$ above 11V
- ✧ High temperature soldering guaranteed:
260°C / 10 seconds at terminals
- ✧ Plastic package has Underwriters Laboratory
Flammability Classification 94V-0

Mechanical Data

- ✧ Case: Molded plastic DO-41
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Lead: Axial leads, solderable per MIL-STD-202,
Method 2025
- ✧ Polarity: Color Band denotes cathode end
- ✧ Mounting position : Any
- ✧ Weight: 0.012 ounces, 0.3 gram

DO-41



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A=50^\circ C$, Derate above 50°C (Note 1)	P_D	1.0 6.67	Watts mW/°C
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 2)	I_{FSM}	10.0	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150	°C

Notes: 1. Mounted on $5.0mm^2$ (0.013mm thick) land areas.

2. Measured on 8.3ms Single Half Sine-wave or Equivalent Square Wave,
Duty Cycle=4 Pulses Per Minute Maximum.

ELECTRICAL CHARACTERISTICS (TA=25°C unless otherwise noted) VF=1.2V max, IF=200mA for all types.

Device (Note 1)	Nominal Zener Voltage V _z @ I _{zt} Voltage (Notes 2 & 3)	Test Current I _{zt} mA	Maximum Zener Impedance (Note 4)			Leakage Current		Surge Current @ T _A = 25°C I _r - mA (Note 5)	
			Z _{zt} @ I _{zt}	Z _{zk} @ I _{zk}		I _r @ V _r			
				Ohms	Ohms	mA	uA Max		Volts
1N4741A	11	23	8	700	0.25	5.0	8.4	414	
1N4742A	12	21	9	700	0.25	5.0	9.1	380	
1N4743A	13	19	10	700	0.25	5.0	9.9	344	
1N4744A	15	17	14	700	0.25	5.0	11.4	304	
1N4745A	16	15.5	16	700	0.25	5.0	12.2	285	
1N4746A	18	14.0	20	750	0.25	5.0	13.7	250	
1N4747A	20	12.5	22	750	0.25	5.0	15.2	225	
1N4748A	22	11.5	23	750	0.25	5.0	16.7	205	
1N4749A	24	10.5	25	750	0.25	5.0	18.2	190	
1N4750A	27	9.5	35	750	0.25	5.0	20.6	170	
1N4751A	30	8.5	40	1000	0.25	5.0	22.8	150	
1N4752A	33	7.5	45	1000	0.25	5.0	25.1	135	
1N4753A	36	7.0	50	1000	0.25	5.0	27.4	125	
1N4754A	39	6.5	60	1000	0.25	5.0	29.7	115	
1N4755A	43	6.0	70	1500	0.25	5.0	32.7	110	
1N4756A	47	5.5	80	1500	0.25	5.0	35.8	95	
1N4757A	51	5.0	95	1500	0.25	5.0	38.8	90	
1N4758A	56	4.5	110	2000	0.25	5.0	42.6	80	
1N4759A	62	4.0	125	2000	0.25	5.0	47.1	70	
1N4760A	68	3.7	150	2000	0.25	5.0	51.7	65	
1N4761A	75	3.3	175	2000	0.25	5.0	56.0	60	
1N4762A	82	3.0	200	3000	0.25	5.0	62.2	55	
1N4763A	91	2.8	250	3000	0.25	5.0	69.2	50	
1N4764A	100	2.5	350	3000	0.25	5.0	76.0	45	
1M110Z	110	2.3	450	4000	0.25	5.0	83.6	-	
1M120Z	120	2.0	550	4500	0.25	5.0	91.2	-	
1M130Z	130	1.9	700	5000	0.25	5.0	98.8	-	
1M150Z	150	1.7	1000	6000	0.25	5.0	114.0	-	
1M160Z	160	1.6	1100	6500	0.25	5.0	121.6	-	
1M180Z	180	1.4	1200	7000	0.25	5.0	136.8	-	
1M200Z	200	1.2	1500	8000	0.25	5.0	152.0	-	

Notes: 1: Tolerance and Type Number Designation. The type numbers listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.

2. Specials Available Include:

- A. Nominal zener voltages between the voltages shown and tighter voltage tolerances.
- B. Matched sets.

3. Zener Voltage (Vz) Measurement. Guarantees the zener voltage when measured at 90 seconds while maintaining the lead temperature (TL) at $30^{\circ}\text{C} \pm 1^{\circ}\text{C}$, from the diode body.

4. Zener Impedance (Zz) Derivation. The zener impedance is derived from the 60 cycle ac voltage, which results when an ac current having and rms value equal to 10% of the dc zener current (Izt or Izk) is superimposed on Izt or Izk.

5. Surge Current (Ir) Non-Repetitive. The rating listed in the electrical characteristics table is maximum peak, non-repetitive, reverse surge current of 1/2 square wave or equivalent sine wave pulse of 1/120 second duration superimposed on the test current, Izt, per JEDEC registration; however, actual device capability is as described in Figure 10.

RATINGS AND CHARACTERISTIC CURVES (1N4741A THRU 1M200Z)

FIG.1- POWER TEMPERATURE DERATING CURVE

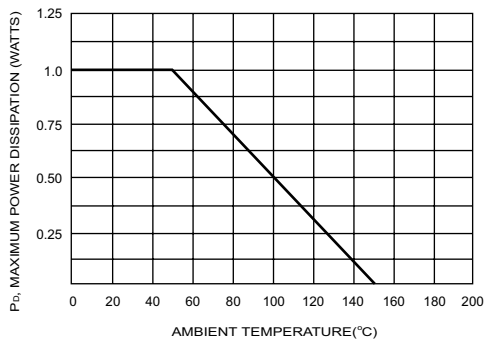


FIG.2- TYPICAL FORWARD CHARACTERISTICS

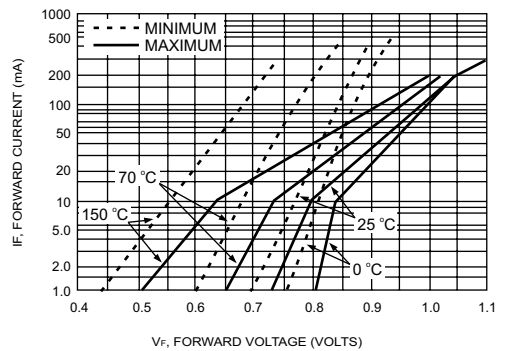


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

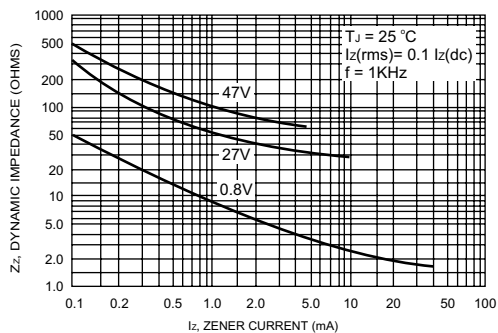


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

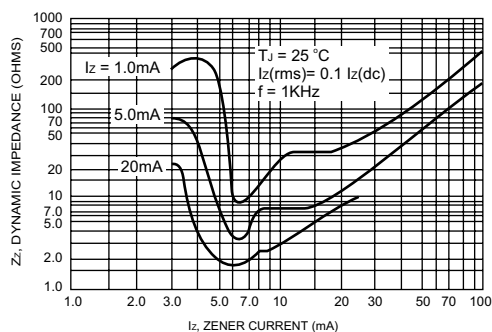
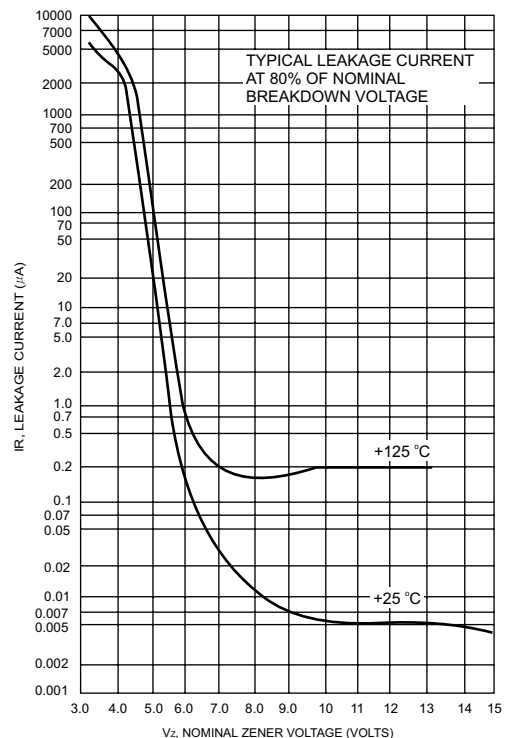


FIG.5- TYPICAL LEAKAGE CURRENT



RATINGS AND CHARACTERISTIC CURVES (1N4741A THRU 1M200Z)

FIG.6- TYPICAL CAPACITANCE versus V_z

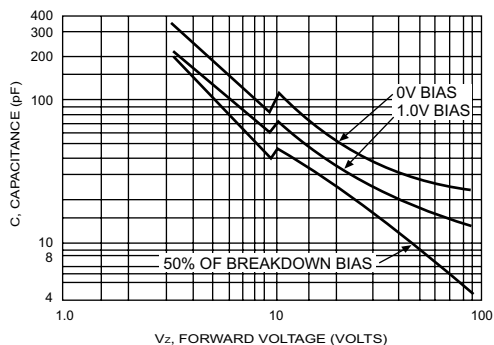


FIG.7- TEMPERATURE COEFFICIENTS

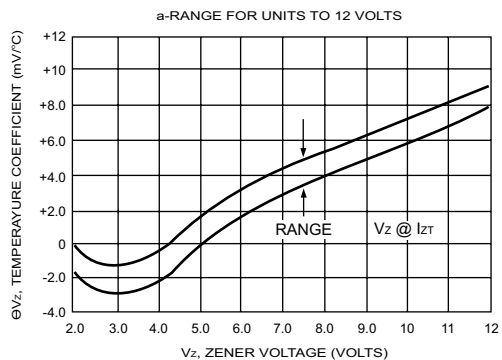


FIG.7- TEMPERATURE COEFFICIENTS

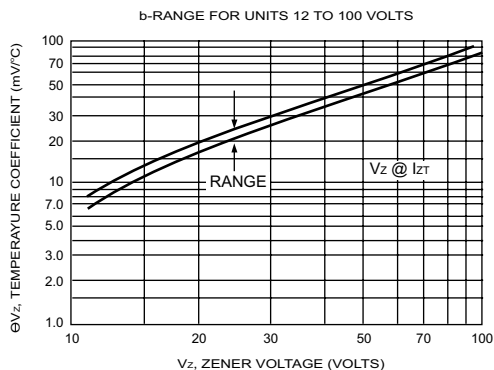


FIG.8- EFFECT OF ZENER CURRENT

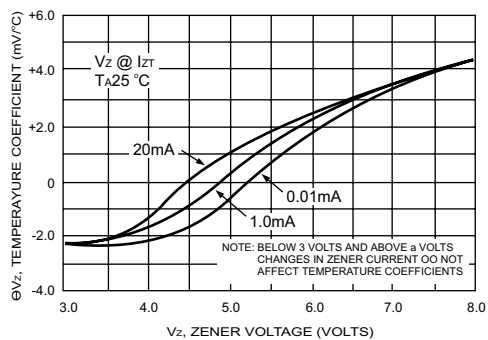
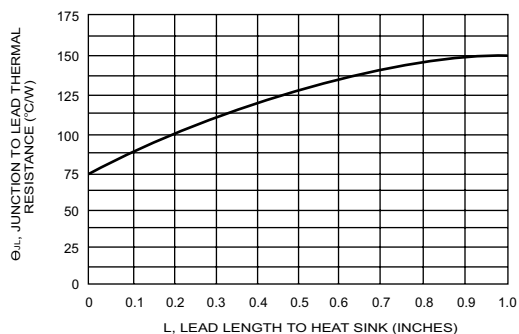


FIG.9- TYPICAL THERMAL RESISTANCE
versus LEAD LENGTH



RATINGS AND CHARACTERISTIC CURVES (1N4741A THRU 1M200Z)

FIG.10- MAXIMUM SURGE POWER

