

1N4741A - 1M200Z

Glass Passivated Junction Silicon Zener Diode

DO-41

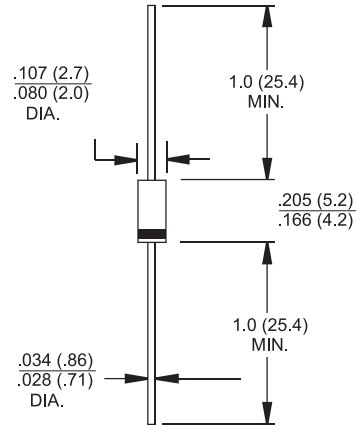


Features

- ◇ Low profile package
- ◇ Built-in strain relief
- ◇ Glass passivated junction
- ◇ Low inductance
- ◇ Typical I_R less than 5.0 μ 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: Pure tin plated lead free,, solderable per
MIL-STD-202, Method 2025
- ◇ Polarity: Color Band denotes cathode end
- ◇ Mounting position : Any
- ◇ Weight: 0.012 ounces, 0.3 gram



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 $T_A=50^\circ\text{C}$, 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 Rang	T_J, T_{STG}	-55 to + 150	°C

- Notes:
1. Mounted on 5.0mm² (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)	Zener Voltage Vz @ Izt Voltage			Test Current Izt mA	Maximum Zener Impedance (Note 4)			Leakage Current		Surge Current @ TA = 25°C Ir - mA (Note 5)
	Nom. (Notes 2&3)	Min.	Max.		Zzt @ Izt Ohms	Zzk @ Izk Ohms	mA	IR @ VR uA Max	Volts	
	1N4741A	11	10.45	11.55	23	8	700	0.25	5.0	
1N4742A	12	11.40	12.60	21	9	700	0.25	5.0	9.1	380
1N4743A	13	12.35	13.65	19	10	700	0.25	5.0	9.9	344
1N4744A	15	14.25	15.75	17	14	700	0.25	5.0	11.4	304
1N4745A	16	15.20	16.80	15.5	16	700	0.25	5.0	12.2	285
1N4746A	18	17.10	18.90	14.0	20	750	0.25	5.0	13.7	250
1N4747A	20	19.00	21.00	12.5	22	750	0.25	5.0	15.2	225
1N4748A	22	20.90	23.10	11.5	23	750	0.25	5.0	16.7	205
1N4749A	24	22.80	25.20	10.5	25	750	0.25	5.0	18.2	190
1N4750A	27	25.65	28.35	9.5	35	750	0.25	5.0	20.6	170
1N4751A	30	28.50	31.50	8.5	40	1000	0.25	5.0	22.8	150
1N4752A	33	31.35	34.65	7.5	45	1000	0.25	5.0	25.1	135
1N4753A	36	34.20	37.80	7.0	50	1000	0.25	5.0	27.4	125
1N4754A	39	37.05	40.95	6.5	60	1000	0.25	5.0	29.7	115
1N4755A	43	40.85	45.15	6.0	70	1500	0.25	5.0	32.7	110
1N4756A	47	44.65	49.35	5.5	80	1500	0.25	5.0	35.8	95
1N4757A	51	48.45	53.55	5.0	95	1500	0.25	5.0	38.8	90
1N4758A	56	53.20	58.80	4.5	110	2000	0.25	5.0	42.6	80
1N4759A	62	58.90	65.10	4.0	125	2000	0.25	5.0	47.1	70
1N4760A	68	64.60	71.40	3.7	150	2000	0.25	5.0	51.7	65
1N4761A	75	71.25	78.75	3.3	175	2000	0.25	5.0	56.0	60
1N4762A	82	77.90	86.10	3.0	200	3000	0.25	5.0	62.2	55
1N4763A	91	86.45	95.55	2.8	250	3000	0.25	5.0	69.2	50
1N4764A	100	95.00	105.0	2.5	350	3000	0.25	5.0	76.0	45
1M110Z	110	104.5	115.5	2.3	450	4000	0.25	5.0	83.6	-
1M120Z	120	114.0	126.0	2.0	550	4500	0.25	5.0	91.2	-
1M130Z	130	123.5	136.5	1.9	700	5000	0.25	5.0	98.8	-
1M150Z	150	142.5	157.5	1.7	1000	6000	0.25	5.0	114.0	-
1M160Z	160	152.0	168.0	1.6	1100	6500	0.25	5.0	121.6	-
1M180Z	180	171.0	189.0	1.4	1200	7000	0.25	5.0	136.8	-
1M200Z	200	190.0	210.0	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

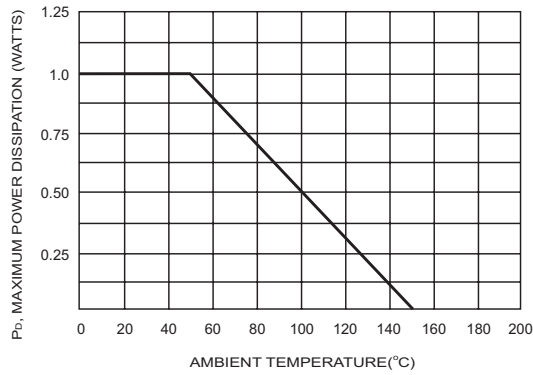


FIG.2- TYPICAL FORWARD CHARACTERISTICS

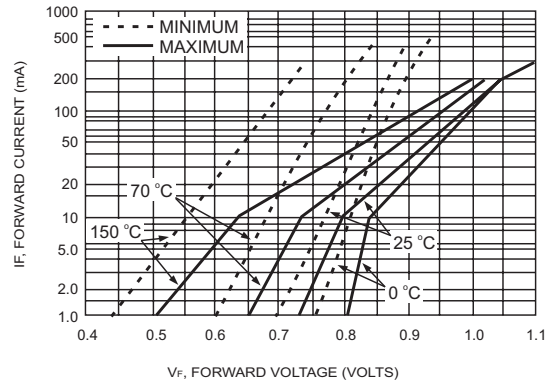


FIG.3- EFFECT OF ZENER CURRENT ON ZENER IMPEDANCE

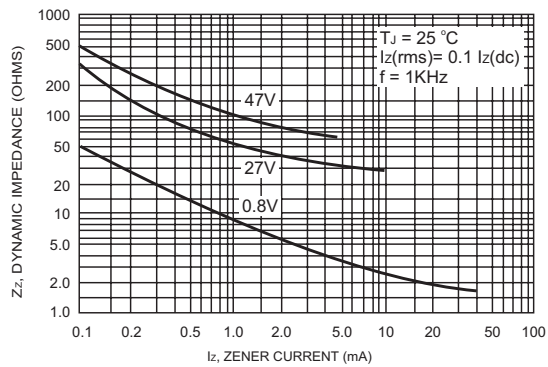


FIG.4- EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

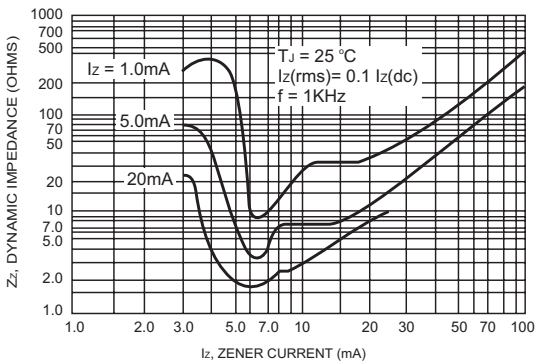
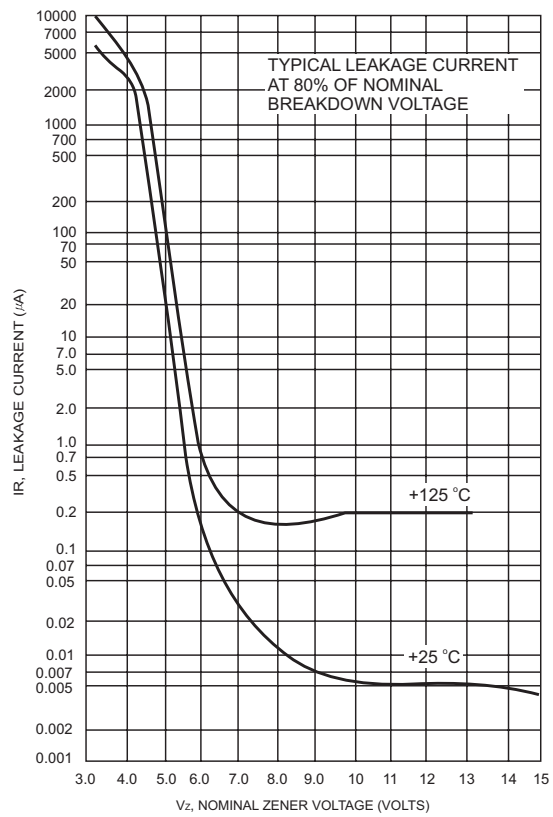


FIG.5- TYPICAL LEAKAGE CURRENT



RATINGS AND CHARACTERISTIC CURVES (1N4741A THRU 1M200Z)

FIG.6- TYPICAL CAPACITANCE versus V_z

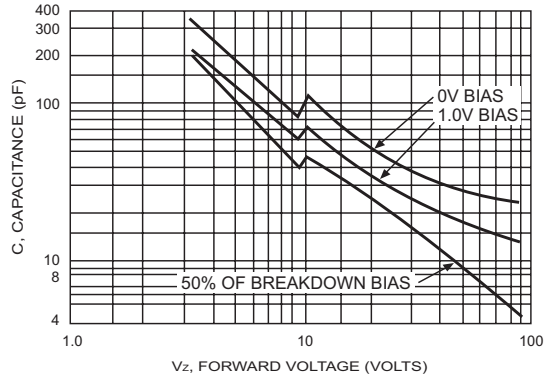


FIG.7- TEMPERATURE COEFFICIENTS

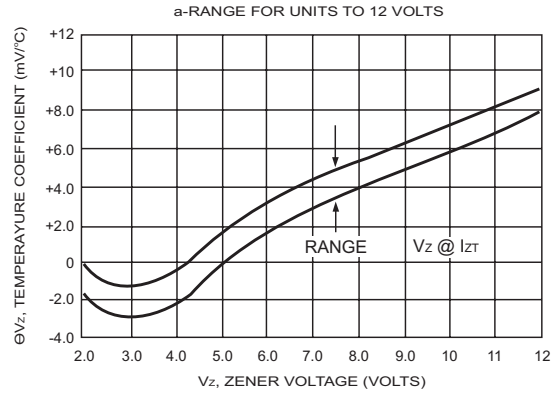


FIG.7- TEMPERATURE COEFFICIENTS

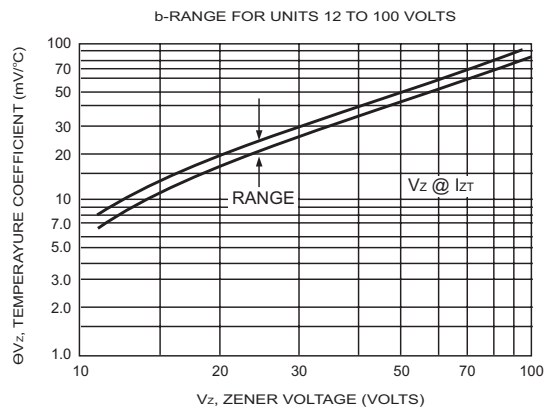


FIG.8- EFFECT OF ZENER CURRENT

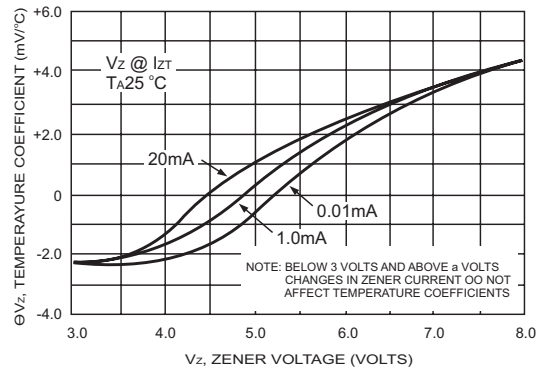
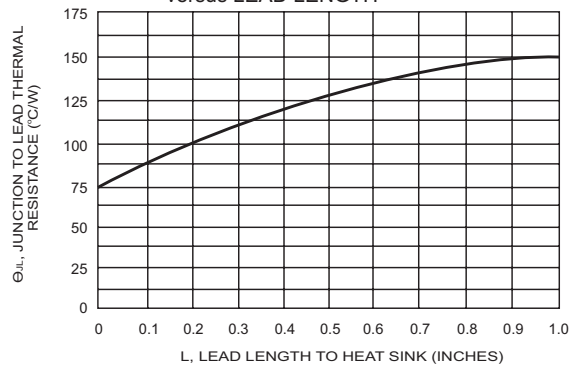


FIG.9- TYPICAL THERMAL RESISTANCE versus LEAD LENGTH



RATINGS AND CHARACTERISTIC CURVES (1N4741A THRU 1M200Z)

FIG.10- MAXIMUM SURGE POWER

