

1N4448

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Taping & bulk specifications for AXIAL devices.....	4
Suggested thermal profiles for soldering processes.....	5
High reliability test capabilities.....	6

1N4448

150mA Axial Led Type Switching Diode-100V

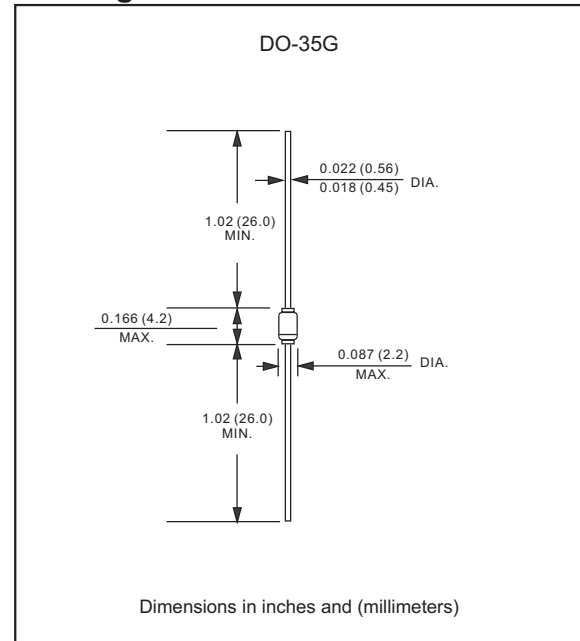
Features

- Axial lead type devices for through hole design.
- Fast speed switching.
- Silicon epitaxial planar chip structruction.
- Hermetically sealed glass.
- Small surface mounting type.
- Lead-free parts meet RoHS requirments.

Mechanical data

- Case : Glass, DO-35G
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.125 gram

Package outline



Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Repetitive peak reverse voltage		V_{RRM}			100	V
Reverse voltage		V_R			75	V
Peak forward surge current	$t_p = 1 \text{ us}$	I_{FSM}			2.0	A
Repetitive peak forward voltage		I_{FRM}			500	mA
Forward current		I_F			300	mA
Average forward current		I_{FAV}			150	mA
Power dissipation		P_V			500	mW
Junction temperature		T_J	-55		+150	$^\circ\text{C}$
Storage temperature		T_{STG}	-65		+150	$^\circ\text{C}$
Forward voltage	$I_F = 5\text{mA}$ $I_F = 100\text{mA}$	V_F	0.62		0.72 1.00	V
Reverse current	$V_R = 20 \text{ V}$	I_R			25	nA
	$V_R = 20 \text{ V}, T_J = 150^\circ\text{C}$	I_R			50	μA
	$V_R = 75 \text{ V}$	I_R			5.0	μA
Breakdown current	$I_R = 100\mu\text{A}, t_p/T = 0.01, t_p = 0.3\text{ms}$	$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0 \text{ V}, f = 1\text{MHz}, V_{HF} = 50\text{mV}$	C_D			4.0	pF
Rectification efficiency	$V_{HF} = 2 \text{ V}, f = 100\text{MHz}$	η_R	45			%
Reverse recovery time	$I_F = I_R = 10\text{mA}, I_{RR} = 1\text{mA}$	t_{rr}			8	ns
	$I_F = 10 \text{ mA}, V_R = 6\text{V}, I_{RR} = 0.1 \times I_R, R_L = 100\Omega$	t_{rr}			4	ns

Rating and characteristic curves (1N4448)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

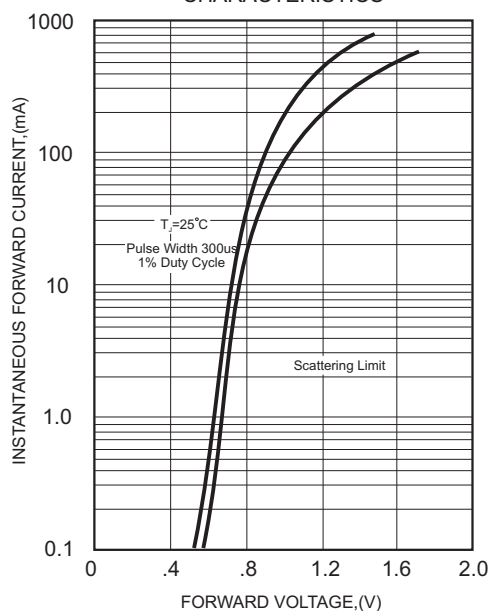


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

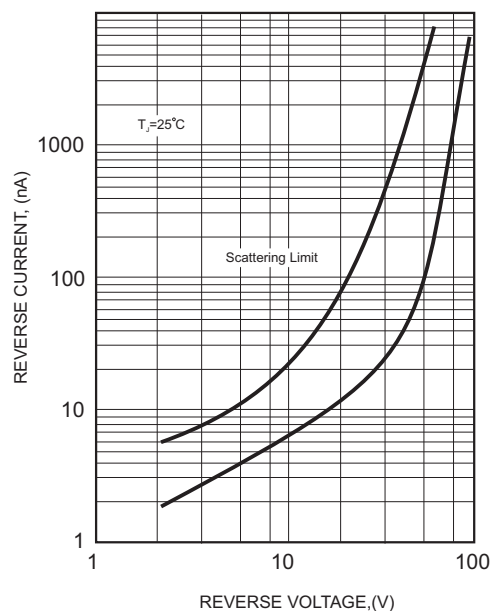


FIG.2 - TYPICAL DIODE CAPACITANCE

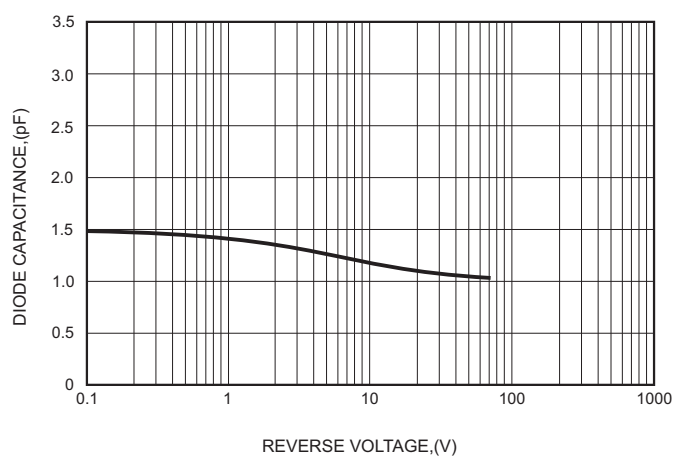
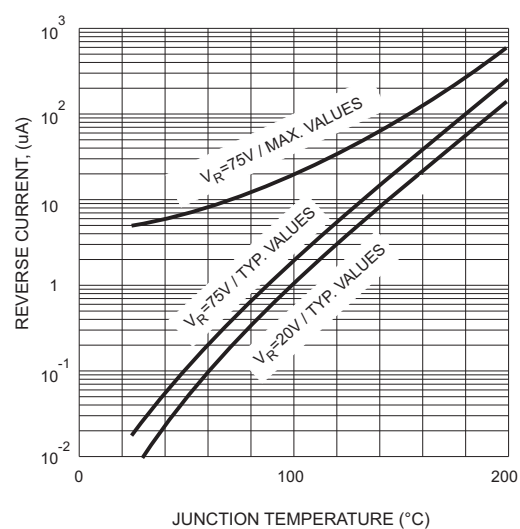


FIG.4 - REVERSE CURRENT VS JUNCTION TEMPERATURE



1N4448

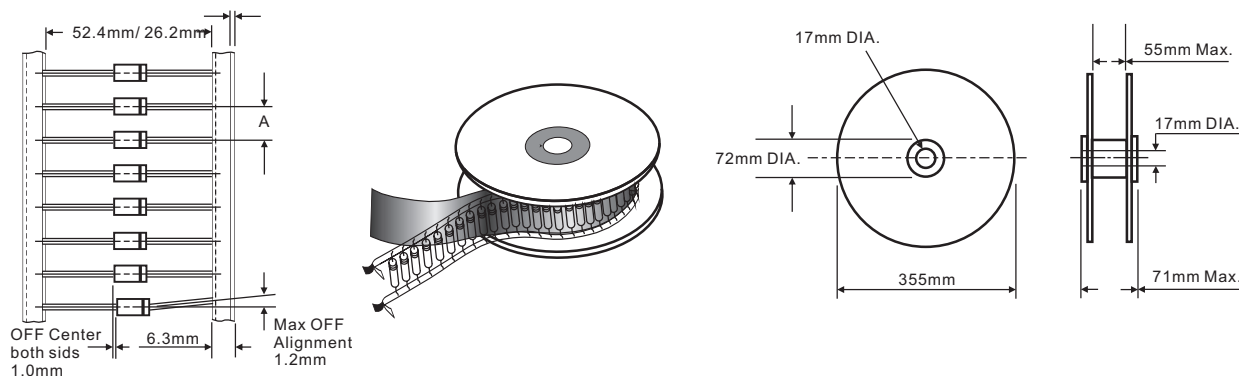
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1  2	1  2

Marking

Type number	Marking code
1N4448	1N4448

Taping & bulk specifications for AXIAL devices



REEL PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / REEL)	COMPONENT SPACING "A" in FIG. A	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G/52mm	10,000	5 mm	360 * 360 * 395	50,000	11.4

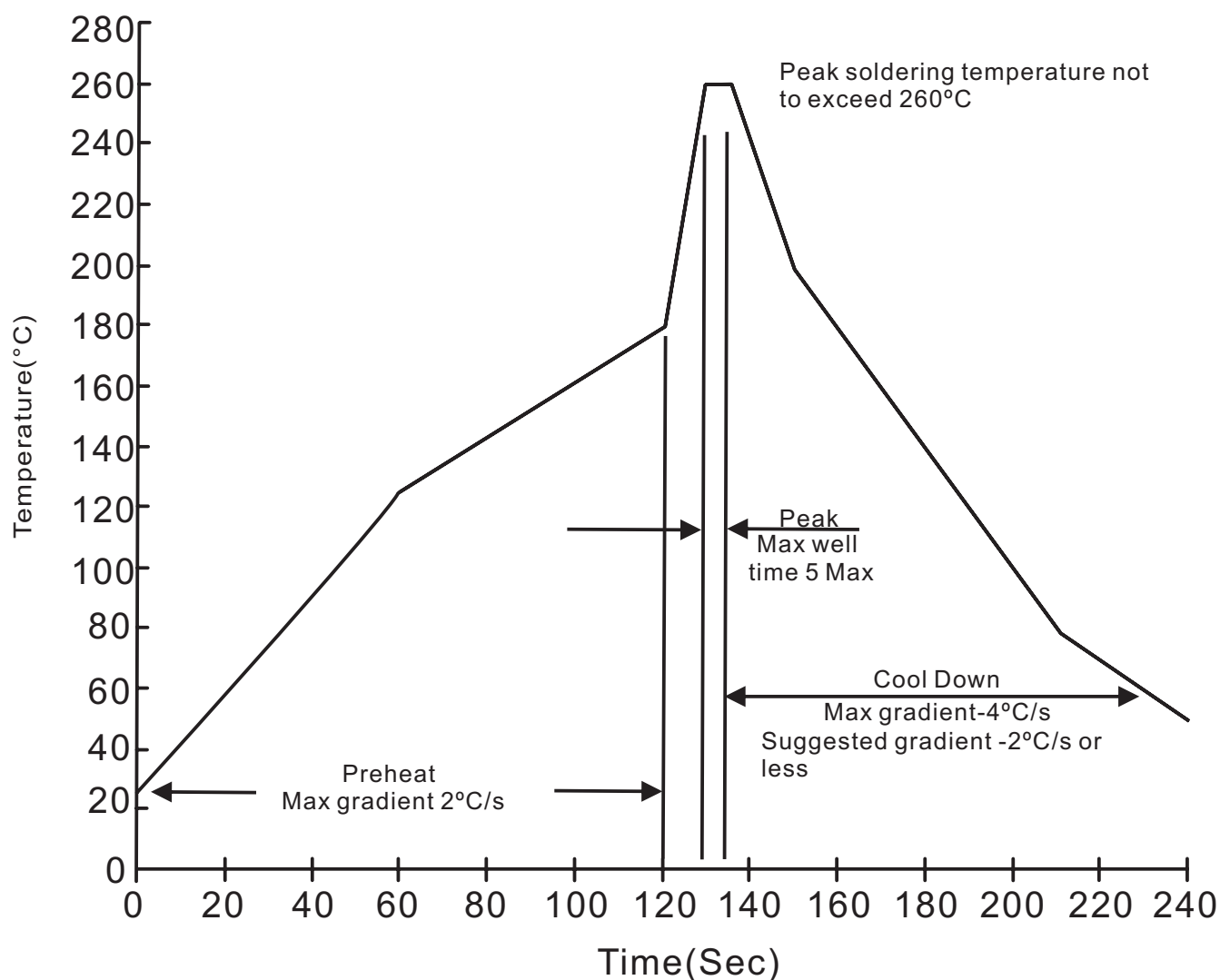
AMMO PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G/26mm	5,000	250 * 78 * 48	420 * 270 * 330	150,000	16.7
DO-35G/52mm	5,000	250 * 78 * 78	420 * 270 * 330	100,000	15.0

1N4448

BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-35G	2,000	96 * 80 * 42	410 * 335 * 265	120,000	17.4

Suggested thermal profiles for soldering processes**1. Lead free temperature profile wave-soldering**

1N4448

High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec.}$ immerse body into solder $1/16''\pm 1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. Pull Test	0.25kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036
4. Bend Lead	0.25kg weight applied to each lead bending arc $90^{\circ}\pm 5^{\circ}$ for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=150^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
6. Forward Operation Life	Rated average rectifier current at $T_A=25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_O$ On state: power on for 5 min. off state: power off for 5 min, on and off for 500 cycles.	MIL-STD-750D METHOD-1036
8. Pressure Cooker	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
9. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
11. Forward Surge	Peak forward surge current $t_p = 1\text{ us}$	MIL-STD-750D METHOD-4066-2
12. Humidity	at $T_A=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
13. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031