1N4148

List

1N4148

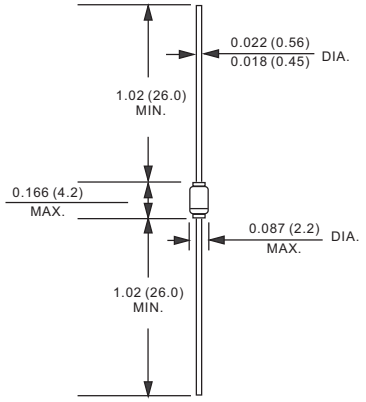
150mA Axial Leaded Type Switching Diode-100V

Features

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

Package outline

DO-35G



Dimensions in inches and (millimeters)

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

Maximum ratings (AT T_A=25°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	tp=1μs	I_{FSM}			2.0	A
Repetitive peak forward current		I_{FRM}			500	mA
Forward continuous current		I_F			300	mA
Average forward current		$I_{F(AV)}$			150	mA
Power dissipation		P_D			500	mW
Operating junction temperature range		T_J	-55		+150	°C
Storage temperature range		T_{STG}	-55		+150	°C

Electrical characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	I_F=10mA	V_F		0.86	1.00	V
Reverse current	V_R=20V	I_R			25	nA
	V_R=20V , T_J=150°C	I_R			50	μA
	V_R=75V	I_R			5.0	μA
Breakdown voltage	I_R=100μA, tp/T=0.01,tp=0.3ms	$V_{(BR)}$	100			V
Diode capacitance	V_R=0V , f=1MHz , V_{HF}=50mV	C_D			4.0	pF
Rectification efficiency	V_{HF}=2V , f=100MHz	ηr	45			%
Reverse recovery time	I_F=I_R=10mA , I_{RR}=1mA	t_{rr}			8.0	ns
	I_F=10mA , V_R=6V , I_{RR}=0.1 X I_R , R_L=100Ω	t_{rr}			4.0	ns

Rating and characteristic curves (1N4148)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

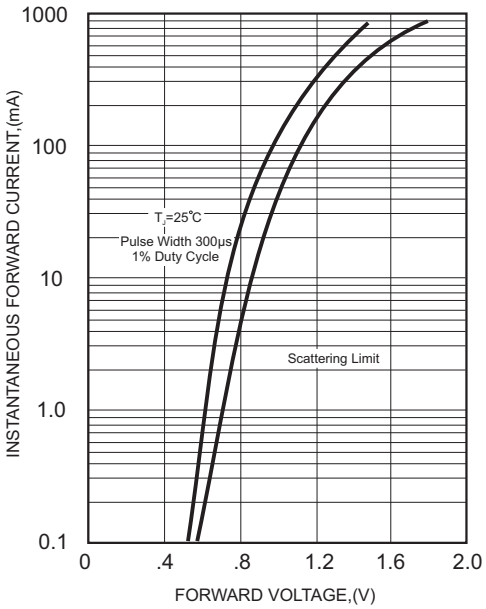


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

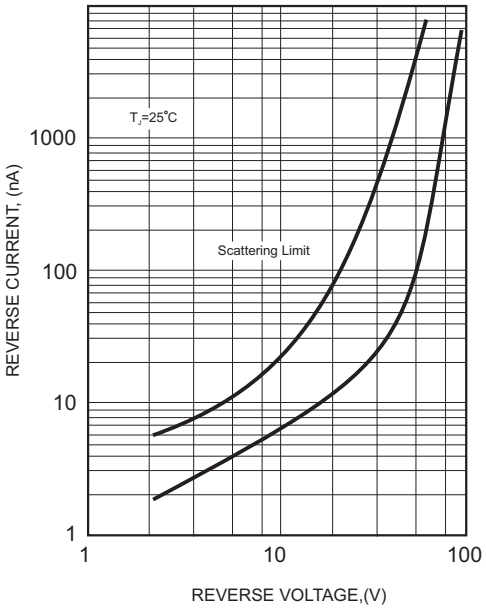


FIG.2 - TYPICAL DIODE CAPACITANCE

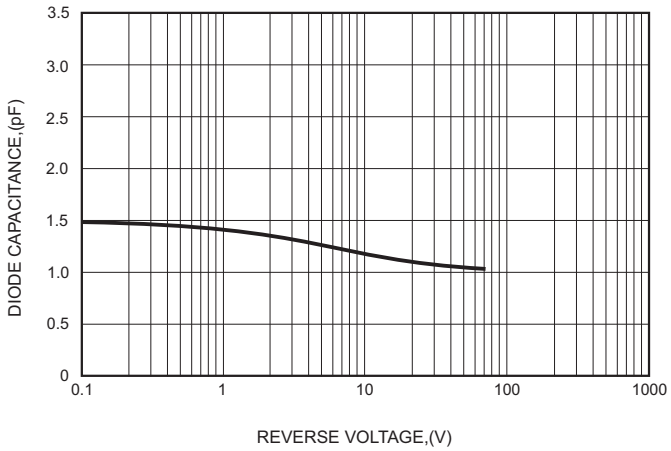
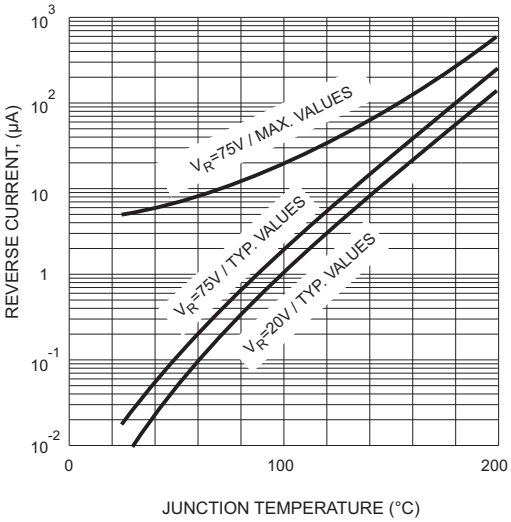


FIG.4 - REVERSE CURRENT VS. JUNCTION TEMPERATURE



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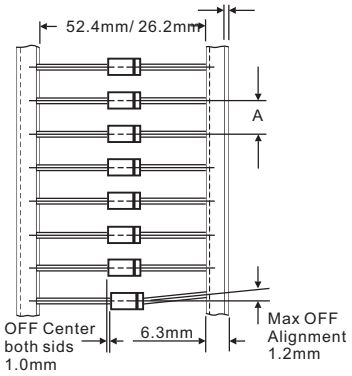
Pinning information

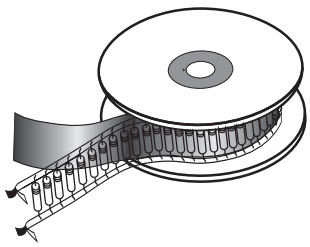
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

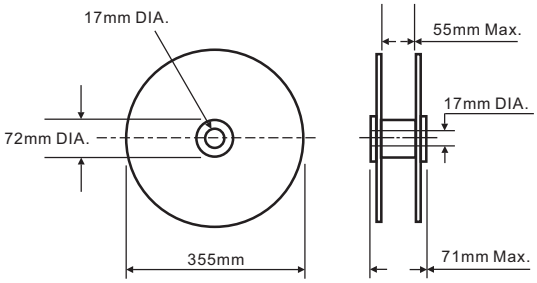
Marking

Type number	Marking code
1N4148	1N4148

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 *7 8 *78	420 * 270 * 330	100,000	15.0

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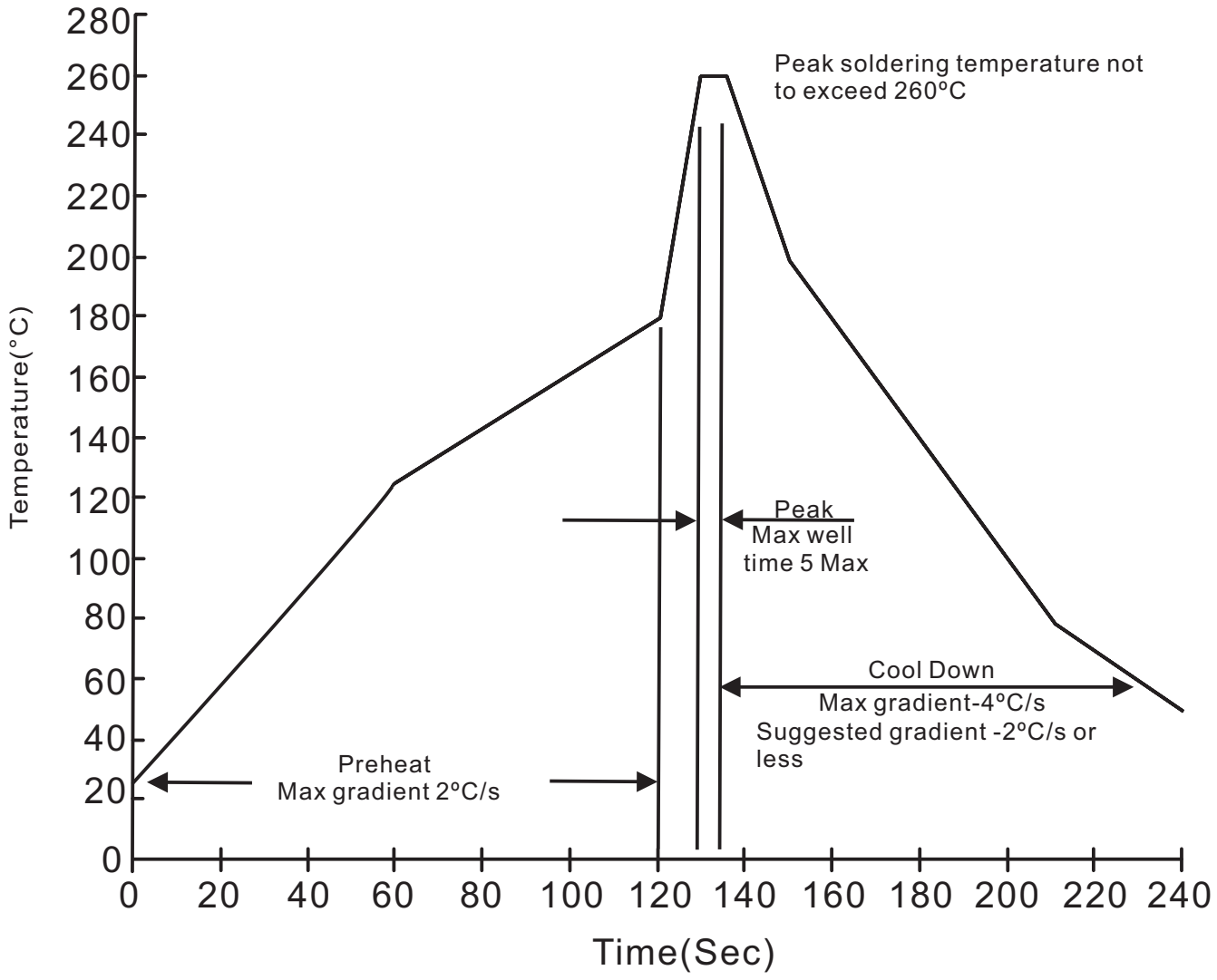
BULK PACKING

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



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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°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°±5° for 3 times.	MIL-STD-750D METHOD-2036
5. High Temperature Reverse Bias	V_R=80% rate at T_J=150°C for 168 hrs.	MIL-STD-750D METHOD-1038
6. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
7. Intermittent Operation Life	T_A = 25°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°C for 4 hrs.	JESD22-A102
9. Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
10. Forward Surge	Peak forward surge current t_p = 1 μs	MIL-STD-750D METHOD-4066-2
11. Humidity	at T_A=85°C, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
12. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031