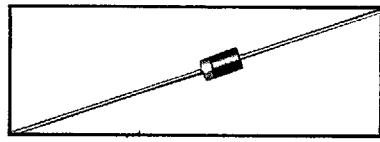
LITEON POWER SEMICONDUCTORS 1N4001 thru 1N4007

1 AMP. PLASTIC SILICON RECTIFIERS



VOLTAGE RANGE
50 to 1000 Volts
CURRENT
1.0 Ampere

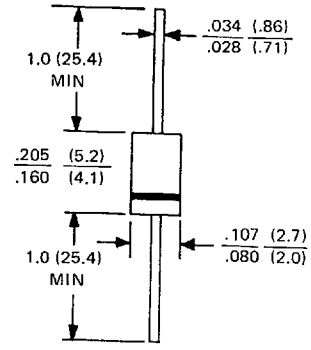
FEATURES

- Low cost
- Diffused junction
- Low leakage
- Low forward voltage drop
- High current capability
- Easily cleaned with Freon, Alcohol, Chlorothene and similar solvents
- The plastic material carries U/L recognition 94V-O

MECHANICAL DATA

Case: JEDEC DO-41, molded plastic
Terminals: Plated axial leads, solderable per MIL-STD-202, Method 208
Polarity: Color band denotes cathode
Weight: 0.012 ounce, 0.3 grams
Mounting position: Any

DO-41



All dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25° C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, resistive or inductive load,
For capacitive load, derate current by 20%.

		1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum Average Forward Rectified Current .375", (9.5mm) Lead Lengths @ T_A = 75° C	$I_{(AV)}$	1.0							A
Peak Forward Surge Current 8.3 ms single half-sine-wave superimposed on rated load	I_{FSM}	40							A
Maximum Forward Voltage at 1.0A DC	V_F	1.0							V
Maximum DC Reverse Current @ T_A = 25° C at Rated DC Blocking Voltage @ TA = 100° C	I_R	5 50							uA uA
Typical Junction Capacitance (Note 1) T_A=25°C	C_J	15							pF
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	26							°C/W
Operating Temperature Range	T_J	–65 to + 175							°C
Storage Temperature Range	T_{STG}	–65 to + 175							°C

NOTES: 1. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC
2. Thermal Resistance Junction to Ambient.

LITEON

FIG. 1– TYPICAL FORWARD CHARACTERISTIC

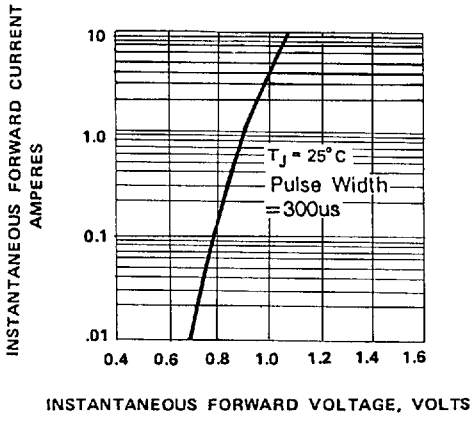


FIG. 2– TYPICAL JUNCTION CAPACITANCE

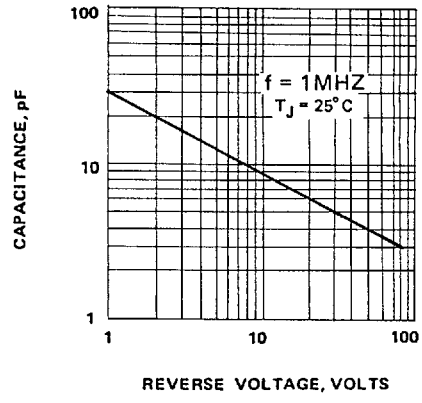


FIG. 3– PEAK FORWARD SURGE CURRENT

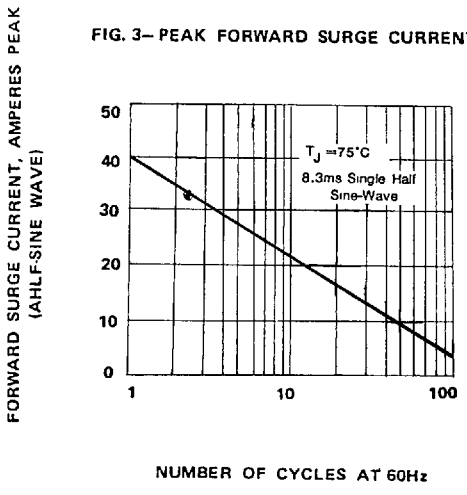
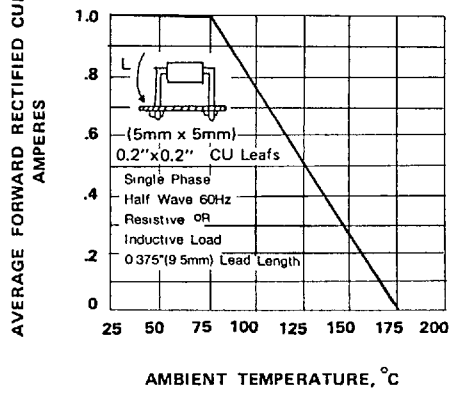


FIG. 4– FORWARD DERATING CURVE



Packed per EIA/JEDEC Standard RS-481

Embossed Carrier Dimensions

8, 12, 16, 24mm Tape Only

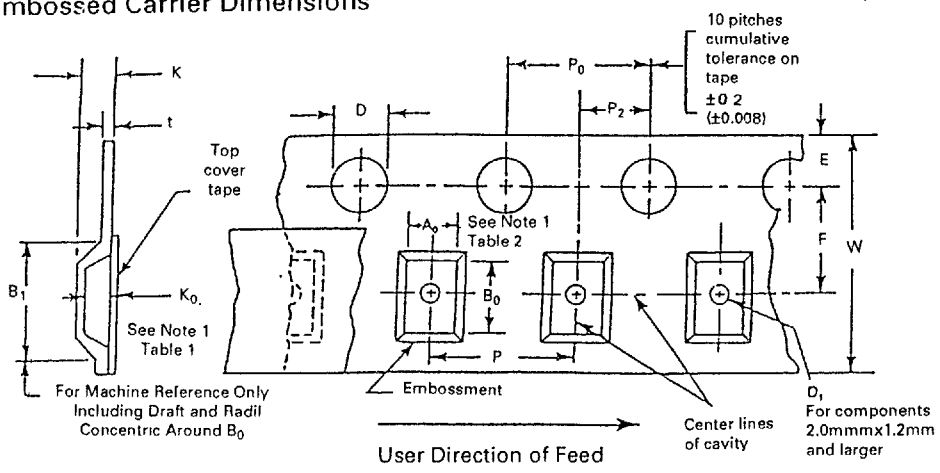


TABLE 1

EMBOSSED TAPE

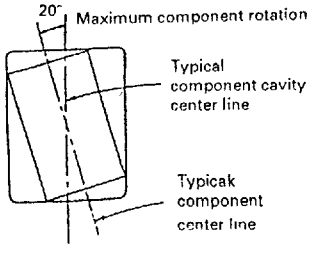
ALL DIMENSION IN MILLIMETERS AND (INCHES)

TAPE SIZE	D	E	Po	t (MAX)	AoBoKo	
12.16 mm	$1.5^{+0\ 10}_{-0\ 0}$	1.75±0 10	4 0±0.10	0.40	SEE NOTE 1	CONSTANT DIMENSION
	$(0.059^{+0.004}_{-0.00})$	(0.069± 004)	(0.157± 004)	(0.016)		

PRODUCT TYPE	TAPE SIZE	B1 MAX	D1 MIN	F	K MAX	P2	R MIN	M	P	
SM1	12mm	8.2 (.323)	1.5 (.059)	5.5±0.05 (.217± 002)	4.5 (.177)	2.0±0.05 (.079± 002)	30 (1.81)	12 0±.30 (.472±.012)	4.0±.10 (.157±.004)	VARIABLE DIMENSIONS
SMB					2.67 (.105)				8.0±.10 (.315±.004)	
DFS	16mm	12.1 (476)		7.5±0.10 (.295±.004)	3.7 (.146)	4.0±.10 (.157±.004)		16.0±.30 (.630±.012)	12.0±.10 (.472± 004)	
SMDF					4.9 (.193)	6.0±.10 (.287±.004)				

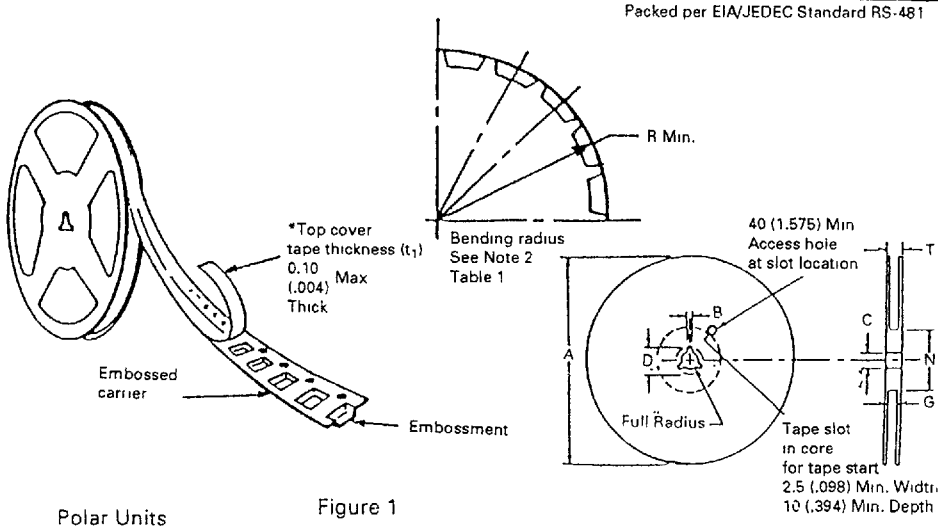
Notes: 1. AoBoKo are determined by component size. The clearance between the component and the cavity must be within 0.05 (.002) min. to 0.50 (.020) max. for 8mm lape. 0.05 (.002) min. to 0.65 (.025) max. for 12mm tape. 0.05 (.002) mln. to 0.90 (.035) max. for 16mm tape and 0.05 (.002) min. to 1.00 (.039) max. for 24mm tape and larger. The component cannot rotate more than 20° within the determined cavity, see sketch "A" below.

2. Tape and components shall pass around radius "R" without damage.



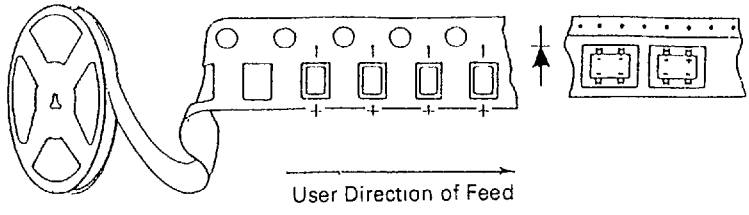
Sketch "A"

Packed per EIA/JEDEC Standard RS-481



Polar Units

Figure 1



REEL DIMENSIONS

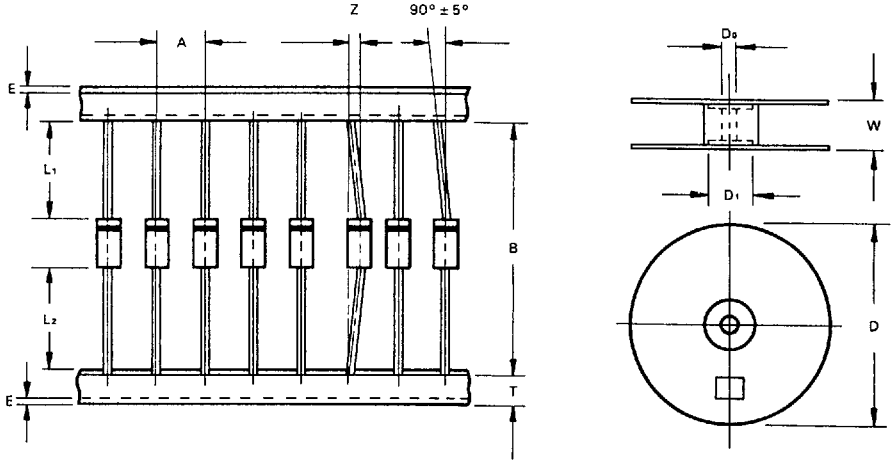
TAPE SIZE	A MAX.	B MAX.	C	D MIN	N MIN	G	T MAX.
12mm	330 (12.992)	1.5 (.059)	13.0±0.5 (.512±.020)	20.2 (.795)	5 0 (1 969)	$12.4^{+2.0}_{-0.0}$ ($.488^{+0.078}_{-0.0}$)	18.4 (.724)
16mm	360 (14.173)	1.5 (.059)	13.0±0.5 (.512±.020)	20.2 (.795)	5 0 (1 969)	$16.4^{+2.0}_{-0.0}$ ($.646^{+0.078}_{-0.0}$)	22.4 (.882)

PACKING:

DEVICE TYPE	Q'TY/REEL (PCCS)	REEL DIA. (Mmm)	BOX SIZE (mm)	Q'TY/BOX	CARTON SIZE (mm)	Q'TY/CARTON (PCS)
SM1	1500	178	188x188x68	6000	337x337x350	30000
	5000	330	337x337x40	10000		80000
SMB	500	175	188x188x68	1000		14000
	3000	330	337x337x40	6000		48000
DF-S	1000			1000		8000
SMDF						

Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below.

COMPONENT OUTLINE	COMPONENT PITCH A ±0.5mm (.020")	INNER TAPE PITCH B ±1.5mm (.059")	CUMULATIVE PITCH TOLERANCE
A-405	5.0mm	26.0mm	2.0mm/20pitch
A-405	5.0mm	52.4mm	2.0mm/10pitch
DO-41	5.0mm	26.0mm	2.0mm/20pitch
DO-41	5.0mm	52.4mm	2.0mm/10pitch
DO-15	5.0mm	52.4mm	2.0mm/10pitch
DO-201AD	10.0mm	52.4mm	2.0mm/10pitch
R-6	10.0mm	52.4mm	2.0mm/10pitch



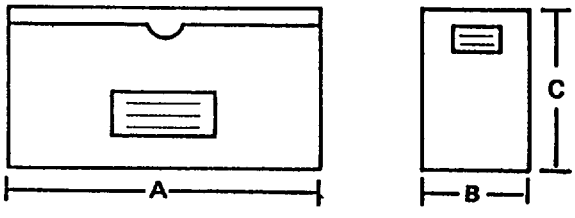
ITEM	SYMBOL	SPECIFICATIONS (mm)	SPECIFICATIONS (inch)
Component alignment	Z	1.2 max.	0.048 max.
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8 max.	0.032 max.
Body eccentricity	$\lvert L_1 - L_2 \rvert$	1.0 max.	0.040 max.
Reel outside diameter	D	330.0	13.0
Reel inner diameter	D_1	85.7±0.3	3.375±0.012
Feed hole diameter	D_0	16.6±0.4	0.655±0.016
Reel width	W	79.0±1.0	3.110±0.040

NOTE. 1. Each component lead shall be sandwiched between tapes for a minimum of 3.2mm (0.126").
2. The reel width 'W' for 26mm taping is 50.0 ± 1.0mm (1.97" ± 0.040")

BULK PACKAGING

DEVICE TYPE	PACKAGING SIZE (MM)		QUANTITY (EA)		APPROX GROSS WEIGHT (KG)	
	BOX	CARTON	BOX	CARTON	BOX	CARTON
DO 41L	196 x 84 x 20	450 x 210 x 250	1000	50K	0.38	20
DO-41 DO-15	196 x 84 x 20	450 x 210 x 250	1000	50K	0.38	20
DO-201AD	305 x 93 x 59	355 x 355 x 355	1000	20K	1 35	28
R-6	305 x 93 x 59	355 x 355 x 355	500	10K	1.2	24.5
PBM	238 x 235 x 50	500 x 250 x 290	1000	10K	1 5	16.2
PBDF /DF	495 x 155 x 145	500 x 325 x 305	5000	20K	7.1	28.4
PBP	220 x 170 x 55	450 x 210 x 310	400	4K	1.1	11
PBL	238 x 235 x 50	500 x 250 x 290	300	3K	1.9	19.5
PBPC-3/PBPC-6	205 x 205 x 55	450 x 210 x 310	200	2K	0 9	8.9
PBPC-8	200 x 200 x 55	450 x 210 x 310	150	1.5K	1.7	7.5
KBPC/MP	205 x 205 x 55	450 x 210 x 310	50	0.5K	1.9	16
KBPC W/MP W		340 x 330 x 280	100	0.8K	3 5	28
TO-220	555 x 165 x 95	570 x 355 x 215	2000	8K	5 8	24
TO-3P	550 x 200 x 120	570 x 230 x 265	1200	2 4K	11	23
SMDF /DF-S	495 x 155 x 145	500 x 325 x 305	9000	36K	6.5	26.5

AMMO BOX PACKAGING



BOX SIZE

Unit: m. m.

Packaging	Products Outline	Dimension "A"	Dimension "B"	Dimension "C"	Q'ty per BOX
26MM Horizontal Ammo Pack	DO-41, T-1, A-405	255	50	107	3K
52MM Horizontal Ammo Pack	DO-41, A-405, T 1 DO-15, DO-201AD	250	75	107	3K 2K 1K

CARTON SIZE

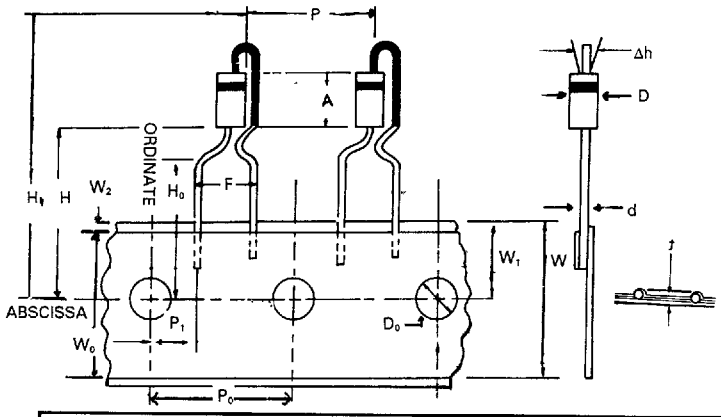
Unit: m. m.

Packaging	Products Outline	Length	Width	Height	Q'ty Per Carton
26MM Horizontal Ammo Pack	DO-41, T-1, A-405	530	300	280	54K
52MM Horizontal Ammo Pack	DO-41, A-405, T-1 DO-15, DO-201AD	530	300	280	36K 24K 12K

- LITE-ON supplies panasert taping/packing to satisfy customer requirement
- All dimensions follow EIA-481 standard

Products	QTY/Reel	QTY/Ammo Box
A-405	2.5K	2K

PANASERT PACKAGING OUTLINES



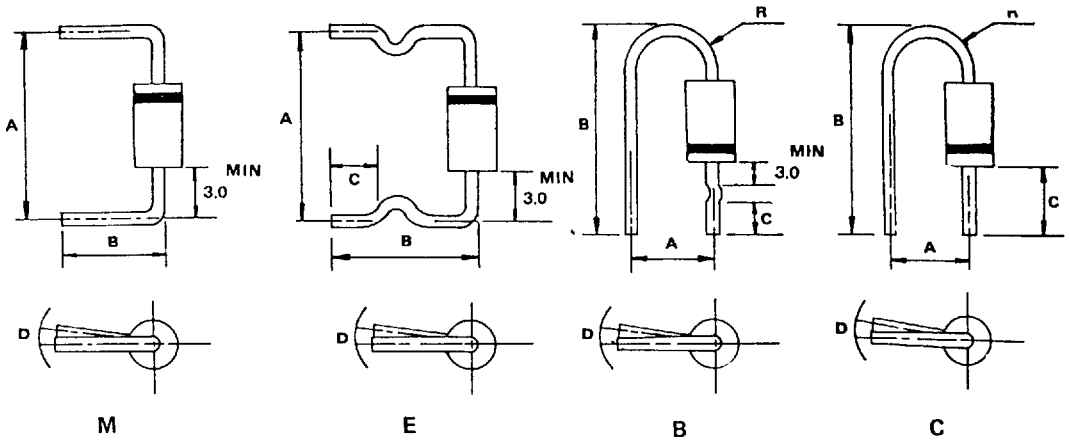
PACKING:

- Maximum fanfold (Ammunition box). 340 x 340 x 55 mm
- Maximum reel size: 360mm diameter x 55 mm overall width:
- Packaging method code:

1. .Cathode up, anode first off ammo pack
2. .Cathode up, cathode first off ammo pack
3...Cathode up, anode first off reel
4...Cathode up, cathode first off reel
5...Cathode down, anode first off ammo pack
6 ..Cathode down, cathode first off ammo pack
7 ..Cathode down, anode first off reel
8 .Cathode down, cathode first off reel

ITEM	SYMBOL	A-405 mm (INCH)
Body height	A	5.2 (0.205) max.
Body diameter	D	2.7 (0.107) max.
Lead wire diameter	d	0.59±0.05 (0.023±0.002)
Pitch of component	P	12.7±1.0 (0.500±0.01)
Sprocket hole pitch	P_0	12 7±1.0 (0.500±0.04)
Sprocket hole center to lead	P1	3.85±0.70 (0.152±0.028)
Carrier tape width	W	18.0±0.5 (0.709±0.020)
Hold down tape width	W_0	12.5±1.0 (0.492±0.014)
Sprocket hole position	W_1	$9.0\pm^{0.75}_{0.50}$ ($0.351\pm^{0.03}_{0.02}$)
Hold down tape position	W_2	0.6 (0.024) max.
Sprocket hole diameter	D_0	4.0±0.2 (0.157±0.008)
Height of component from tape position	H	19.5±1.0 (0.768±0.040)
Lead wire clinch height	H_0	16.0±0.5 (0.630±0.020)
Overall height above abscissa	H_1	32.25 (1.27) max.
Component lead spacing	F	5.0±0.5 (0.197±0.020)
Total tape thickness	t	1.5 (0.059) max.
Deflection	Δh	±1.0 (±0.040)

NOTE: 1. Lead insulation coating allow to be exposed 1.5 mm (0.059 inch) max. from body.
2. Non insulation lead coating type is also available.
3. Lead protrusion shall not exceed 0.6mm (0.024) max.



Case type	Performed Type	A —(mm)		B —(mm)		C —(mm)		D —(mm)		R (M00)	
		range	tolerance	range	tolerance	range	tolerance	range	tolerance	range	tolerance
DO-41 DO-41L	M	9.0–20.0	±0 5	8.0–22.0	±0 5	–	–	1.5	max.	–	–
	E	11.0–20.0	±0.5	11.0–16 0	±1 0	4 0–5.0	±0.5	1.5	max.	–	–
	B	7 5	±0 5	19 0–22.0	±0.5	7.5	±0 5	1.5	max.	2.5–4.0	Typ
	C	4 5	±0.8	18 0–19.0	±0.5	90	±0 5	1 5	max.	2.5–4.0	Typ
DO-15	M	9 0–20 0	±0.5	8 0–22 0	±0 5	–	–	1.5	max	–	–
	E	11 0–20 0	±0 5	11 0–16 0	±1.0	4.0–5.0	±0.5	1.5	max.	–	–
DO201AD	M	15 0–20 0	±1 0	8 0–22 0	±1 0	–	–	2.0	max.	–	–
	E	15 0–20 0	±1 0	10.0–22 0	±1 0	3 0–15 0	±0.5	2.0	max.	–	–
R–6	M	15 0–20 0	±1 0	8.0–22 0	±1 0	–	–	2.0	max.	–	–

*Press Forming Also Available.