

## FR251 thru FR257

### 1.Feature & Dimensions

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* High temperature metallurgically bonded construction
- \* Deffused junction
- \* Capable of meeting environmental standards of MIL-S-19500
- \* 2.5 A operation at TA=55°C with no thermal runaway
- \* For use in high frequency rectifier circuits
- \* Fast switching for high efficiency
- \* Typical IR less than 1.0μA
- \* High temperature soldering guaranteed: 260°C/10 seconds
- \* 0.375" (9.5mm) lead length, 5 lbs. (2.3kg) tension

### 2.Mechanical Data

**Case:** JEDEC R-3, molded plastic body

**Terminals:** Plated axial leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.015 oz., 0.40 g

**Handling precautin:**None

### 3.Electrical Characteristic

**Maximum Ratings & Thermal Characteristics Ratings** at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol                                                                                             | symbol          | FR 251      | FR 252 | FR 253 | FR 254 | FR 255 | FR 255P | FR 256 | FR 257 | FR 257P | Unit |
|--------------------------------------------------------------------------------------------------------------|-----------------|-------------|--------|--------|--------|--------|---------|--------|--------|---------|------|
| Maximum repetitive peak reverse voltage                                                                      | $V_{RRM}$       | 50          | 100    | 200    | 400    | 600    | 600     | 800    | 1000   | 1000    | V    |
| Maximum RMS voltage                                                                                          | $V_{RMS}$       | 35          | 70     | 140    | 280    | 420    | 420     | 560    | 700    | 700     | V    |
| Maximum DC blocking voltage                                                                                  | $V_{DC}$        | 50          | 100    | 200    | 400    | 600    | 600     | 800    | 1000   | 1000    | V    |
| Maximum average forward rectified current 0.375" (9.5mm) lead length at $T_A = 55^\circ\text{C}$             | $I_F(AV)$       | 2.5         |        |        |        |        |         |        |        |         | A    |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)             | $I_{FSM}$       | 150         |        |        |        |        |         |        |        |         | A    |
| Maximum full load reverse current, full cycle average,0.375"(9.5mm) lead lengths at $T_A = 55^\circ\text{C}$ | $I_R(AV)$       | 100         |        |        |        |        |         |        |        |         | μA   |
| Typical thermal resistance (Note 2)                                                                          | $R_{\theta JA}$ | 45          |        |        |        |        |         |        |        |         | °C/W |
| Operating junction and storage temperature range                                                             | $T_J, T_{STG}$  | -50 to +150 |        |        |        |        |         |        |        |         | °C   |

**Electrical Characteristics Ratings** at 25°C ambient temperature unless otherwise specified.

| Parameter Symbol                                                                | symbol         | FR 251     | FR 252 | FR 253 | FR 254 | FR 255 | FR 255P | FR 256 | FR 257 | FR 257P | Unit |
|---------------------------------------------------------------------------------|----------------|------------|--------|--------|--------|--------|---------|--------|--------|---------|------|
| Maximum instantaneous forward voltage at 2.5A                                   | V <sub>F</sub> | 1.3        |        |        |        |        |         |        |        |         | V    |
| Maximum DC reverse current TA = 25°C<br>at rated DC blocking voltage TA = 100°C | IR             | 5.0<br>200 |        |        |        |        |         |        |        |         | μA   |
| Typical reverse recovery time (Note 1)                                          | trr            | 150        |        |        |        | 250    | 150     | 500    |        | 250     | ns   |
| Typical junction capacitance at 4.0V, 1MHz                                      | CJ             | 15         |        |        |        |        |         |        |        |         | PF   |

NOTES:

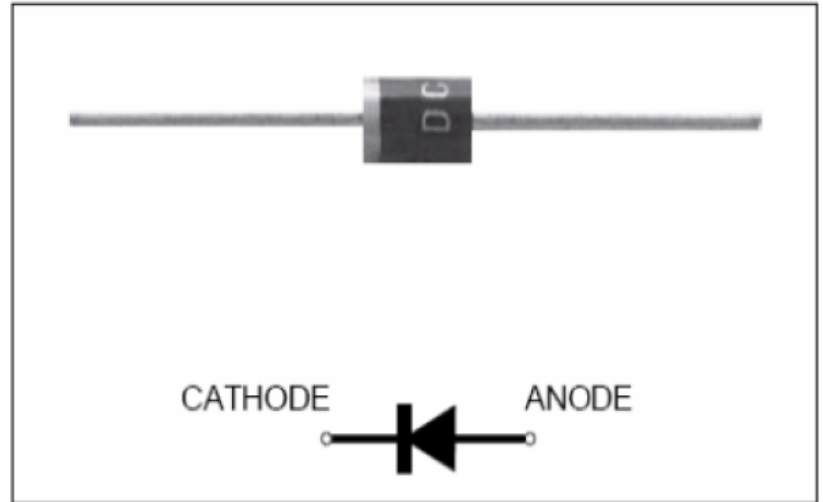
1.  $I_F = 0.5A$ ,  $I_R = 1.0A$ ,  $IRR = 0.25A$

2. Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

### Fast Switching Rectifiers

Reverse Voltage 50 to 1000V

Forward Current 2.5A



We declare that the material of product compliance with RoHS requirements.

#### 4. Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted )

Fig. 1 - Forward Current Derating Curve

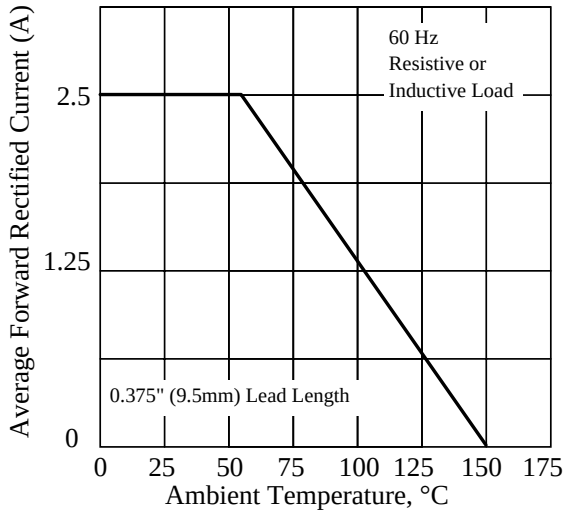


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

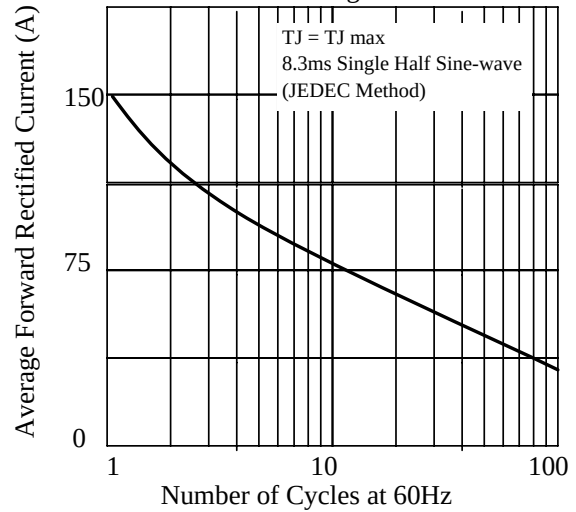


Fig. 3 - Typical Instantaneous Forward Characteristics

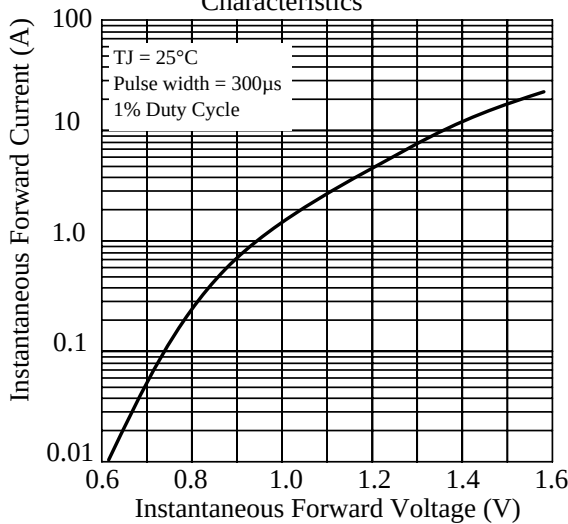


Fig. 4 - Typical Reverse Characteristics

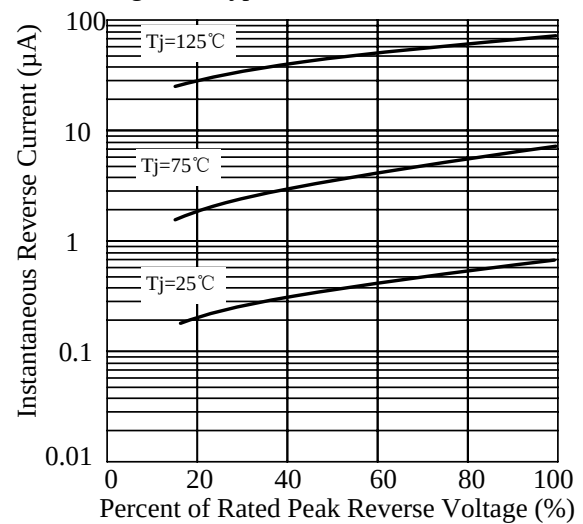


Fig. 5 - typical transient thermal impedance

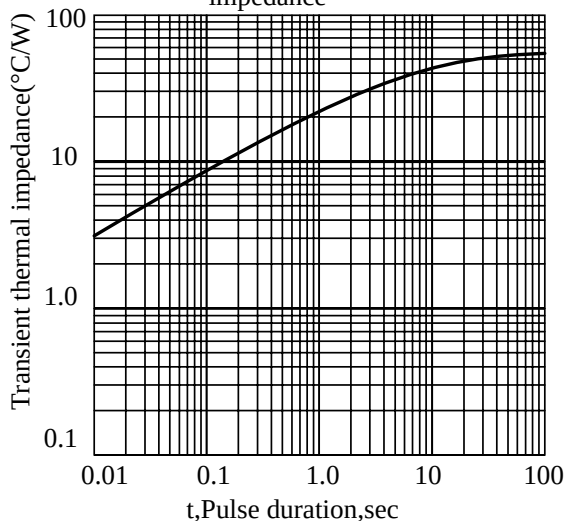
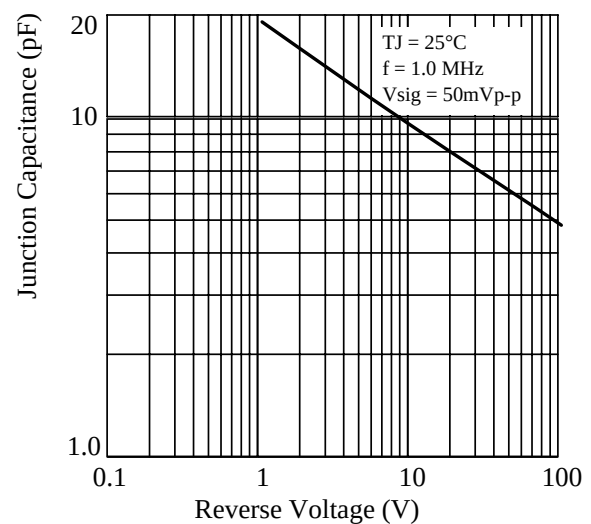
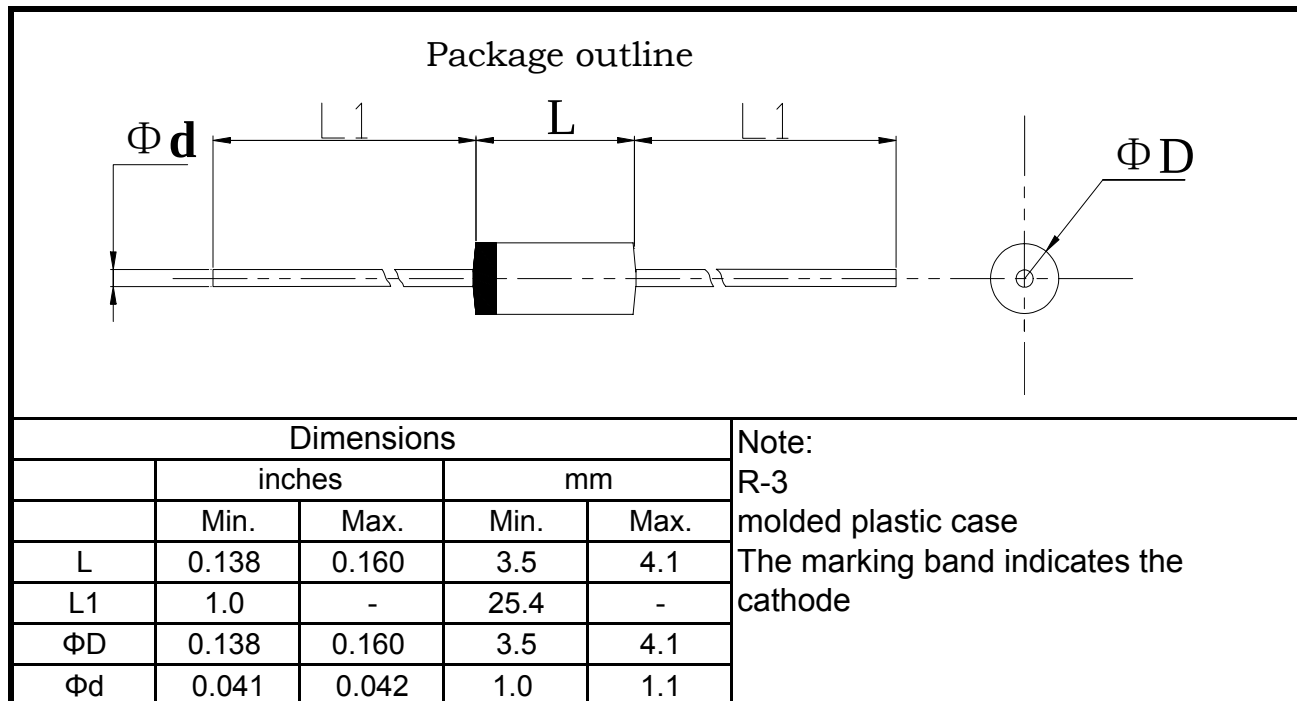


Fig. 6 - Typical Junction Capacitance



## 5.Package Dimensions in inches and (millimeters)

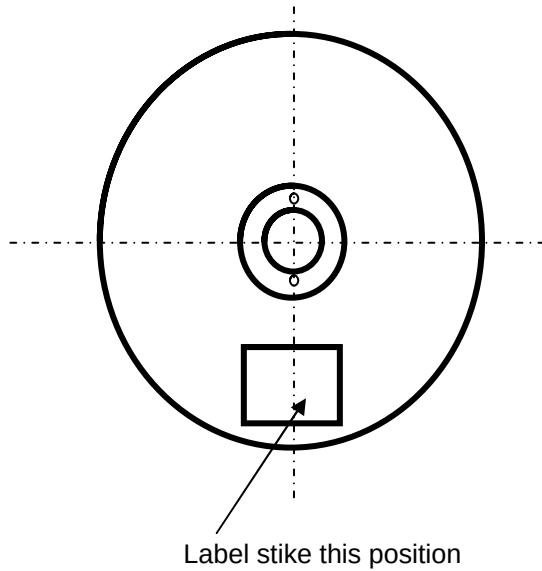
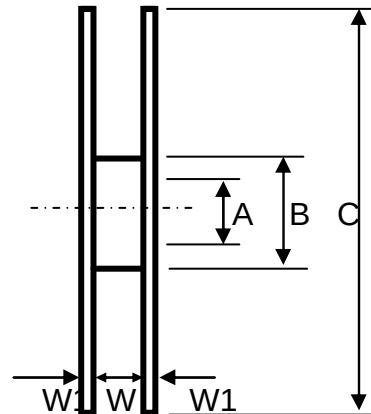


## Packing Of Plastic-Sealed Axial Lead Diodes

### 1. 卷盘/Reel Packing (52mm)

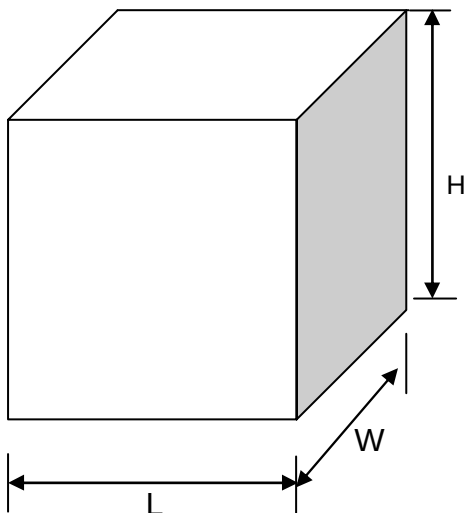
Unit:mm

A: 卷盘规格/Reel spec.



| Item      | Symbol | Dimension |
|-----------|--------|-----------|
| Dimeter   | A      | 76.4±0.1  |
|           | B      | 82.5±0.2  |
|           | C      | 330±0.5   |
| Width     | W      | 72±0.2    |
| Thickness | W1     | 3±0.2     |

B: 外箱规格/Outer Box Specification



| Item | Symbol | Dimension |
|------|--------|-----------|
| Size | L      | 350±2     |
|      | W      | 350±2     |
|      | H      | 340±4     |

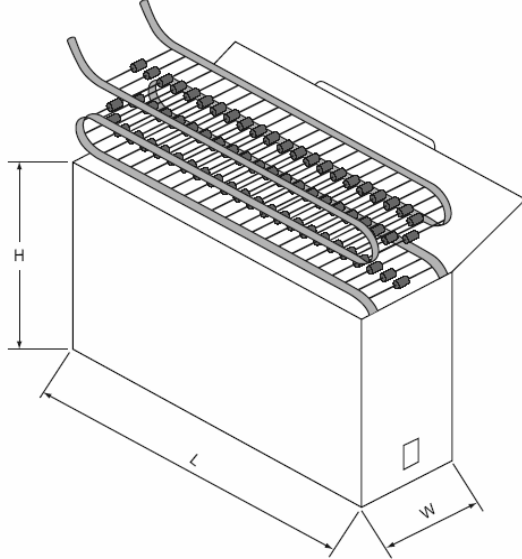
按以上包装方式: (As per the above spec)

|                   | 外型/Outside    |       |          |
|-------------------|---------------|-------|----------|
|                   | DO-41 & A-405 | DO-15 | DO-201AD |
| Q'ty/Taping       | 5K            | 4K    | 1.4K     |
| Q'ty/Packing Case | 20K           | 16K   | 5.6K     |

## 2. 弹带盒装/Ammo Packing

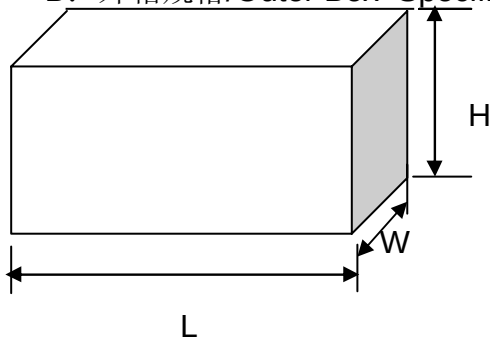
Unit:mm

### A: 弹带盒规格/Ammo Box Spec.



| Item       | Symbol | Dimension | Notes     |
|------------|--------|-----------|-----------|
| Box's Size | L      | 260±2     | 52mm TYPE |
|            | W      | 76±2      |           |
|            | H      | 100±4     |           |
|            | L      | 250±3     | 26mm TYPE |
|            | W      | 45±3      |           |
|            | H      | 95±5      |           |

### B: 外箱规格/Outer Box Specification



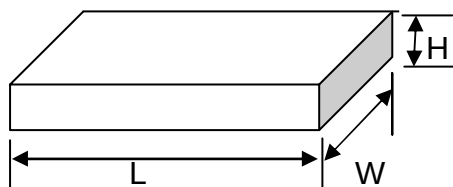
| Item        | Symbol | Dimension | Notes     |
|-------------|--------|-----------|-----------|
| Case's Size | L      | 430±2     | 52mm TYPE |
|             | W      | 280±2     |           |
|             | H      | 225±4     |           |
|             | L      | 435±3     | 26mm TYPE |
|             | W      | 280±3     |           |
|             | H      | 295±5     |           |

按以上包装方式: (As per the above spec)

|                                | 外型/Outside          |       |          |
|--------------------------------|---------------------|-------|----------|
|                                | A-405 & DO-41 & R-1 | DO-15 | DO-201AD |
| Q'ty/Taping                    | 3K                  | 2K    | 0.8K     |
| Q'ty/Packing Case<br>26mm/TYPE | 30K                 | 20K   | 7.2K     |
| Q'ty/Packing Case<br>52mm/TYPE | 60K                 | 40K   | 14.4K    |

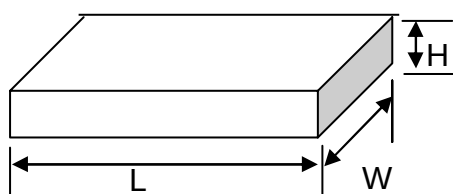
### 3. 散装/Bulk Packing

#### A. 包装盒尺寸/Box Dimension



( DO-41&DO-15 )

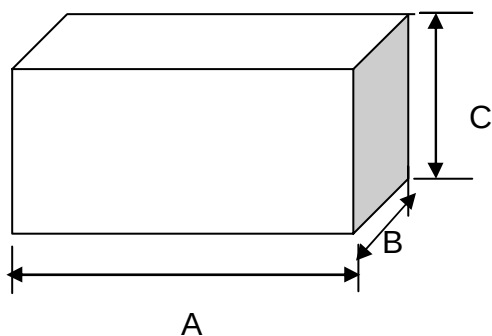
| Item       | Symbol | Dimension |
|------------|--------|-----------|
| Box's Size | L      | 200±2     |
|            | W      | 84±2      |
|            | H      | 21±2      |



( DO-201AD )

| Item       | Symbol | Dimension |
|------------|--------|-----------|
| Box's Size | L      | 200±2     |
|            | W      | 84±2      |
|            | H      | 29±2      |

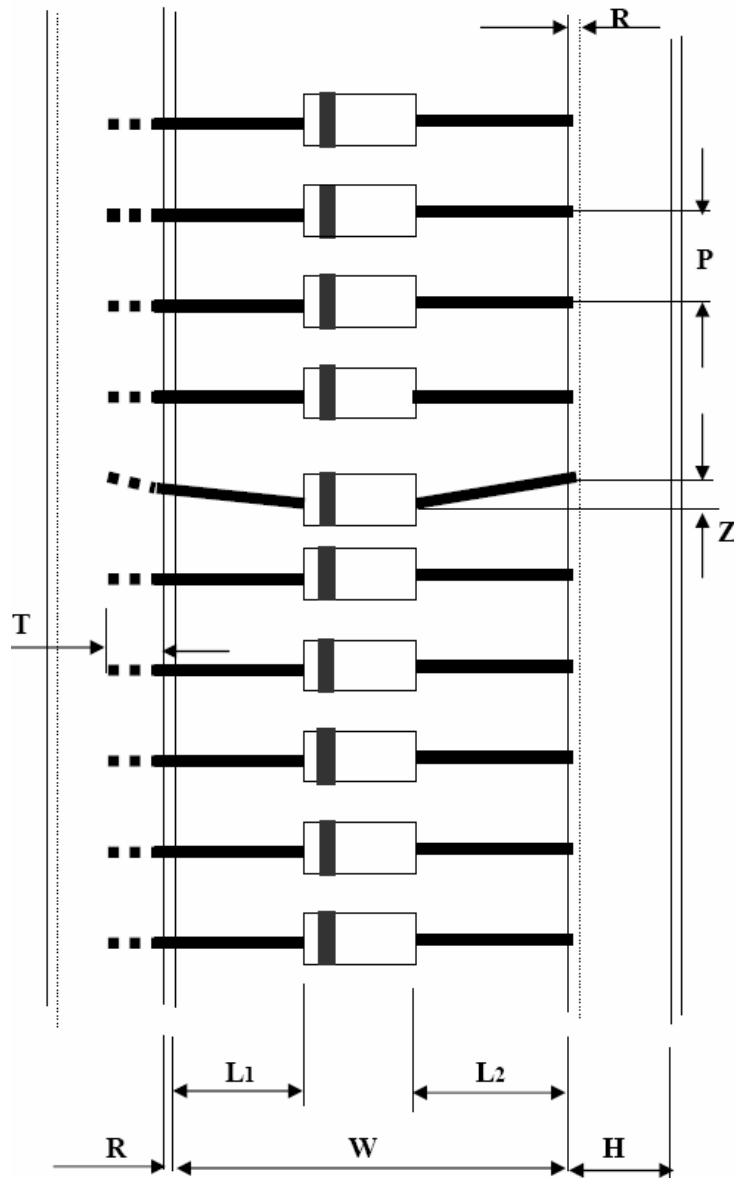
#### B: 外箱规格/Outer Box Specification



| Item        | Symbol | Dimension |
|-------------|--------|-----------|
| Case's Size | L      | 465±2     |
|             | W      | 225±2     |
|             | H      | 260±4     |

按以上包装方式: (As per the above spec)

|                   | 外型/Outside      |       |          |
|-------------------|-----------------|-------|----------|
|                   | DO-41&A-405&R-1 | DO-15 | DO-201AD |
| Q'ty/Taping       | 1K              | 0.5K  | 0.3K     |
| Q'ty/Packing Case | 50K             | 25K   | 12K      |

**4. 编带图形及规格/Taping Specification**


Unit:mm

| 尺寸代号           | 编带尺寸/Tape Dimension |              |              |
|----------------|---------------------|--------------|--------------|
| Dimension Code | 26/tape             | 52/tape      | 52/tape#     |
| W              | 26 0.0/+1.6         | 52 -1.0/+2.0 | 52 -1.0/+2.0 |
| P              | 5±0.5               | 5±0.5        | 10±0.5       |
| L1-L2          | <1.0                | <1.2         | <1.2         |
| H              | 6±1.0               | 6±1.0        | 6±1.0        |
| Z              | <1.2                | <1.2         | <1.2         |
| R              | <1.0                | <1.0         | <1.0         |
| T              | >3.2                | >3.2         | >3.2         |

注: 52编带# 为DO-201AD编带规格

Remark: 52 tape# is DO-201AD taping spec.