

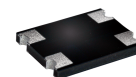
## Z4DGP406L-HF Thru. Z4DGP410L-HF

Reverse Voltage: 600 to 1000 Volts

Forward Current: 4.0 A

RoHS Device

Halogen free

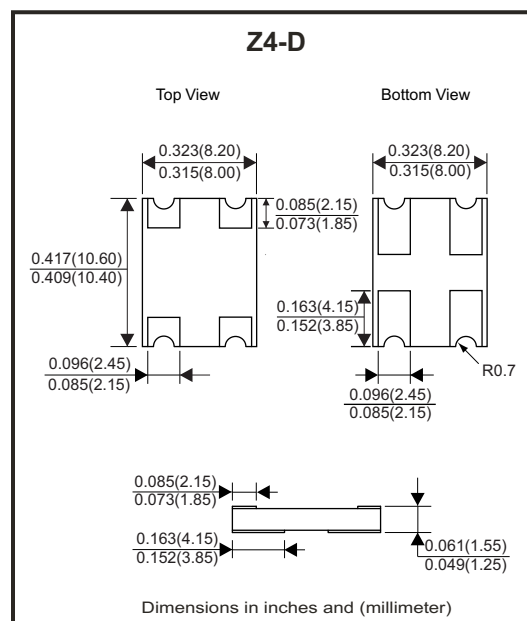


### Features

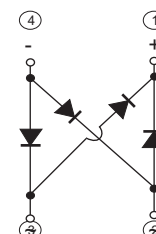
- Internal structure with GPRC (Glass passivated rectifier chip) inside.
- Lead less chip form, no lead damage.
- Low power loss, High efficiency.
- High current capability.
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0 .

### Mechanical data

- Case: Packed with FRP substrate and epoxy underfilled.
- Terminals: Pure Tin plated (Lead-Free), solderable per MIL-STD-750, method 2026.
- Polarity: Laser marking symbols
- Weight: 0.29 grams (approx).



### Circuit Diagram



### Absolute Maximum Rating (at TA=25°C unless otherwise noted)

| Parameter                                                                                          | Symbol     | Z4DGP406L-HF | Z4DGP408L-HF | Z4DGP410L-HF | Unit |
|----------------------------------------------------------------------------------------------------|------------|--------------|--------------|--------------|------|
| Repetitive Peak Reverse Voltage                                                                    | $V_{RRM}$  | 600          | 800          | 1000         | V    |
| Average Forward Current                                                                            | $I_{(AV)}$ | 4.0          |              |              | A    |
| Peak Forward Surge Current, 8.3ms single half sine-wave, superimposed on rated load (JEDEC Method) | $I_{FSM}$  | 150          |              |              | A    |
| Operating Temperature Range                                                                        | $T_J$      | -55 to +175  |              |              | °C   |
| Storage Temperature Range                                                                          | $T_{STG}$  | -55 to +175  |              |              | °C   |

### Electrical Characteristics (at TA=25°C unless otherwise noted)

| Parameter                       | Symbol       | Conditions                                           | Min. | Typ.         | Max.         | Unit    |
|---------------------------------|--------------|------------------------------------------------------|------|--------------|--------------|---------|
| Forward Voltage                 | $V_F$        | $I_F = 2.0A$<br>$I_F = 4.0A$                         | -    | 0.86<br>0.90 | 0.90<br>0.95 | V       |
| Repetitive peak reverse current | $I_{RRM}$    | $V_R = \text{Max.}$ , $V_{RRM}$ , $T_a = 25^\circ C$ | -    | 0.08         | 5            | $\mu A$ |
| Current squared time            | $I^2 t$      | $t < 8.3ms$ , $T_a = 25^\circ C$                     | -    | 93.38        | -            | $A^2 S$ |
| Junction capacitance            | $C_J$        | $V_R = 4V$ , $f = 1.0MHz$                            | -    | 45           | -            | pF      |
| Thermal resistance              | $R_{th(JA)}$ | Junction to ambient (Note)                           | -    | 35           | -            | °C/W    |
|                                 | $R_{th(JL)}$ | Junction to lead (Note)                              | -    | 15           | -            | °C/W    |

Notes: 1. Thermal resistance, junction to ambient, measured on PC board with 5.0\*5.0mm(0.03mm thick) land areas.

Company reserves the right to improve product design , functions and reliability without notice.

REV:A

## RATING AND CHARACTERISTIC CURVES (Z4DGP406L-HF Thru. Z4DGP410L-HF)

Fig.1- Forward Current Derating Curve

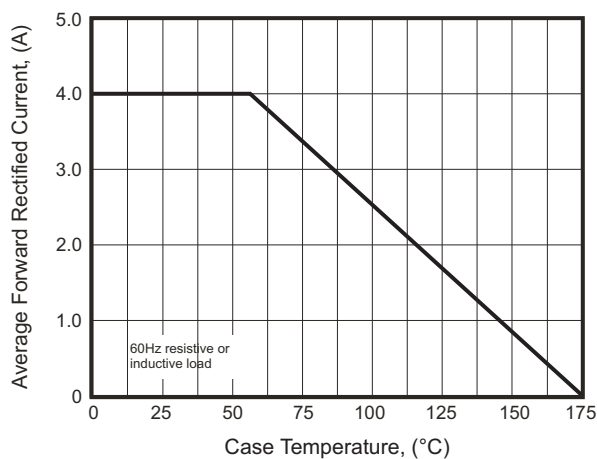


Fig.2- Maximum Non-Repetitive Peak Forward Surge Current

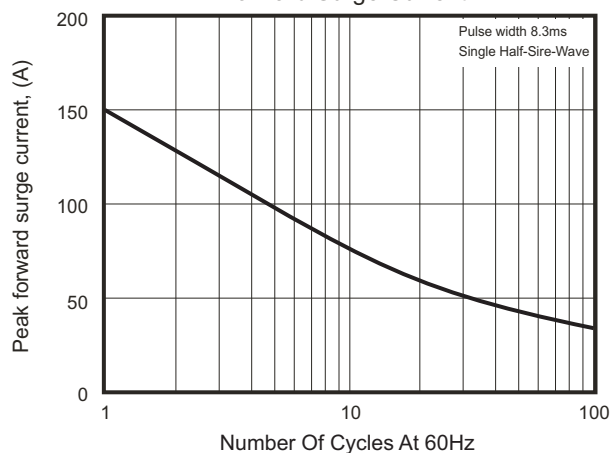


Fig.3- Typical Instantaneous Forward Characteristics

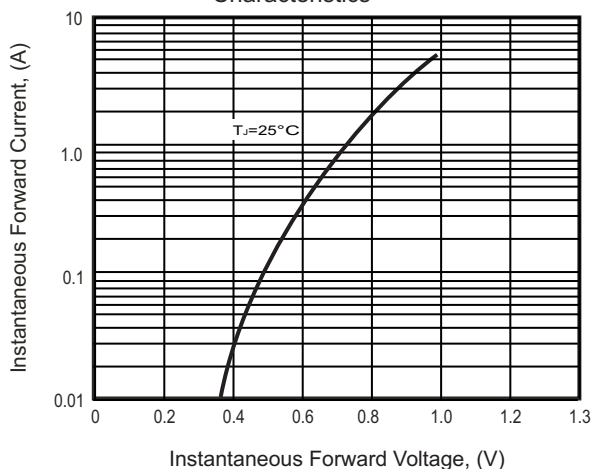


Fig.4- Typical Reverse Characteristics

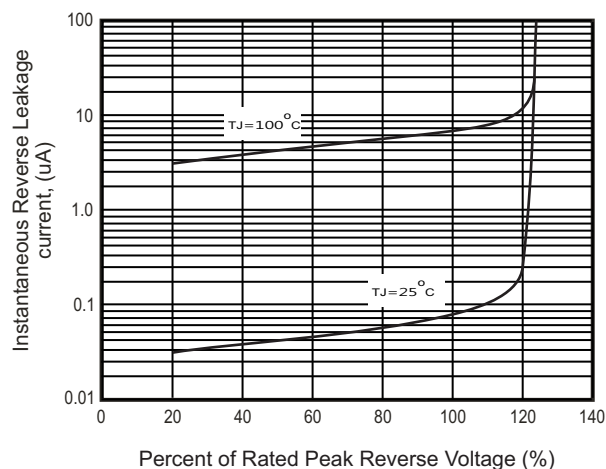
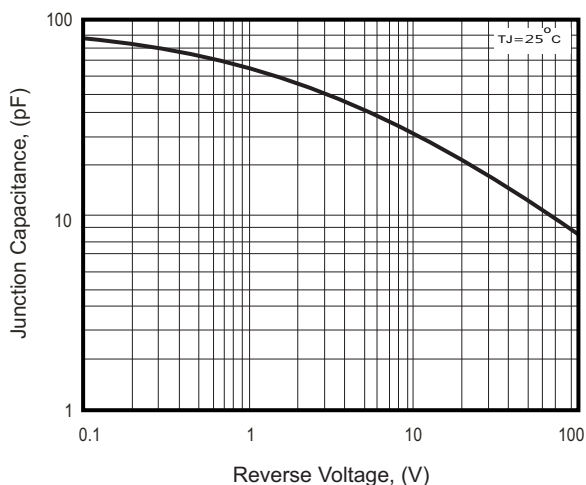
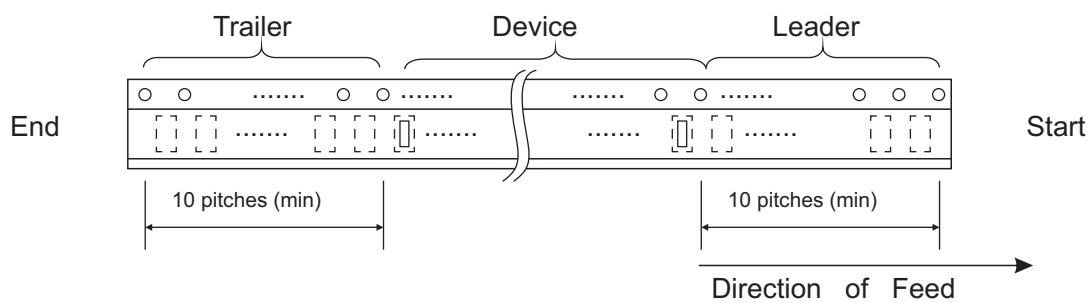
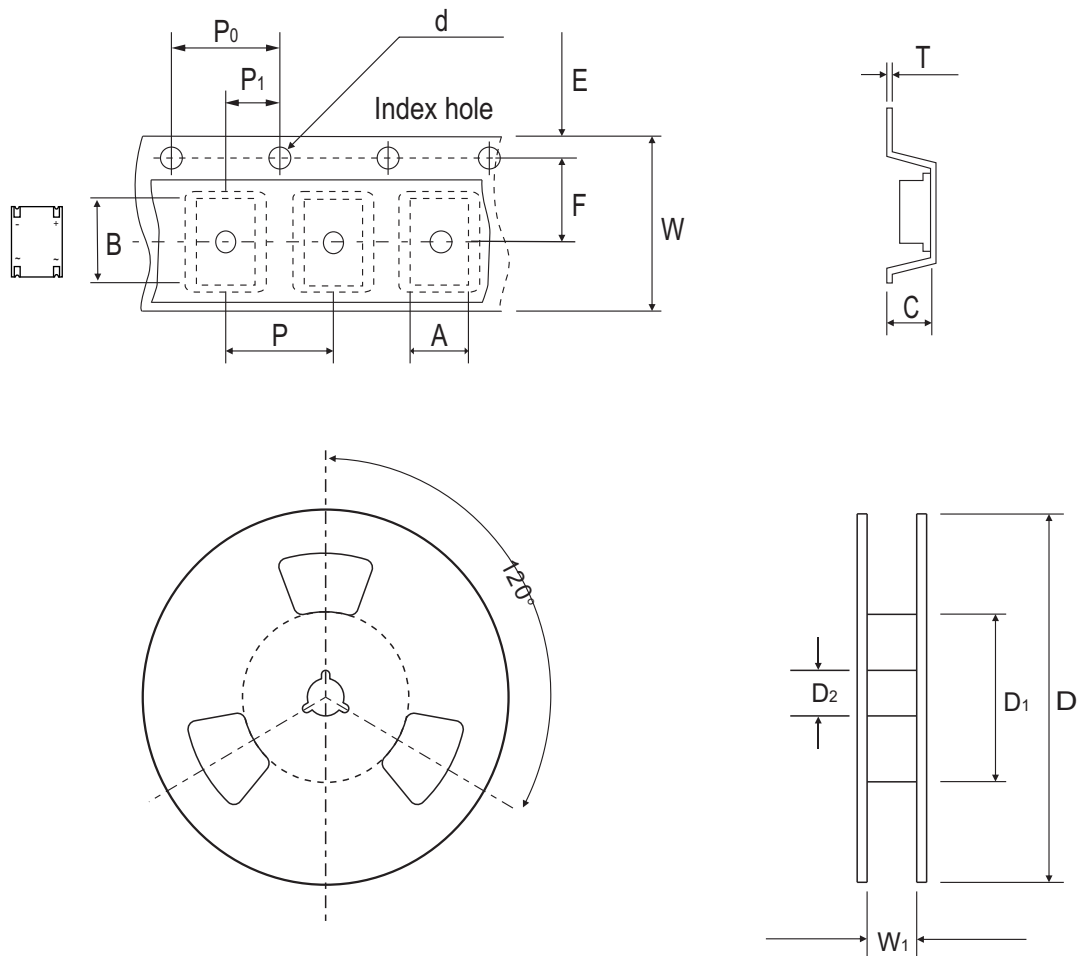


Fig.5 - Typical Junction Capacitance



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## Reel Taping Specification



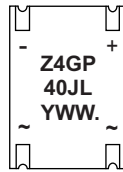
| Z4-D | SYMBOL | A             | B             | C             | d             | D              | D <sub>1</sub> | D <sub>2</sub> |
|------|--------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|
|      | (mm)   | 8.25 ± 0.10   | 10.65 ± 0.10  | 1.60 ± 0.10   | 1.55 ± 0.05   | 330 ± 2.00     | 50.0 MIN.      | 13.0 ± 0.50    |
|      | (inch) | 0.325 ± 0.004 | 0.419 ± 0.004 | 0.063 ± 0.004 | 0.061 ± 0.002 | 12.992 ± 0.079 | 1.969 MIN.     | 0.512 ± 0.020  |

| Z4-D | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W             | W <sub>1</sub> |
|------|--------|---------------|---------------|---------------|----------------|----------------|---------------|----------------|
|      | (mm)   | 1.75 ± 0.10   | 7.50 ± 0.10   | 8.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 16.00 ± 0.30  | 14.4 MAX.      |
|      | (inch) | 0.069 ± 0.004 | 0.295 ± 0.004 | 0.315 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.630 ± 0.012 | 0.567 MAX.     |

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## Marking Code

| Part Number  | Marking Code |
|--------------|--------------|
| Z4DGP406L-HF | Z4GP40JL     |
| Z4DGP408L-HF | Z4GP40KL     |
| Z4DGP410L-HF | Z4GP40ML     |



Z4GP = Series code  
 40 = Amps class(4.0A)  
 J = Voltage Class  
 J = 600V  
 K = 800V  
 M = 1000V  
 L = Low VF  
 . = Halogen- free type

Y = Last digit of the year

0 = 2010

1 = 2011

2 = 2012

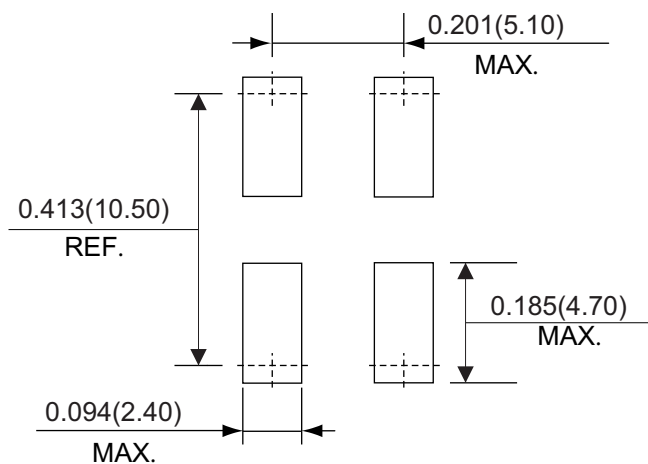
WW = Mfg week

01 = First week

02 = Second week

03 = Third week

## Suggested PAD Layout



## Standard Packaging

| Case Type   | REEL PACK       |                     |
|-------------|-----------------|---------------------|
|             | REEL<br>( pcs ) | Reel Size<br>(inch) |
| <b>Z4-D</b> | 3,000           | 13                  |

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