



# THE DATASHEET OF CSPB40M-HF



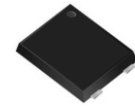
## CSPB40M-HF

Reverse Voltage: 1000 Volts

Forward Current: 4.0 A

RoHS Device

Halogen Free

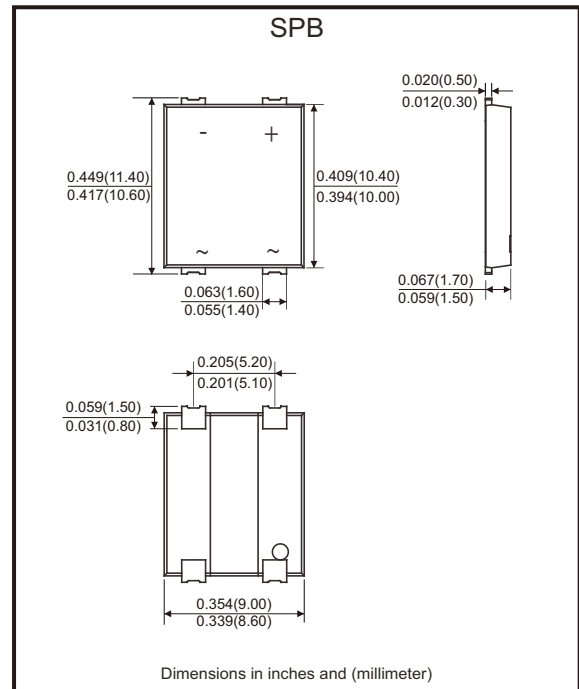


### Features

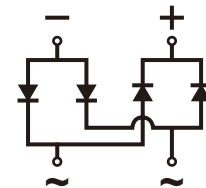
- Glass passivated junction.
- High surge current capability.
- Saves space on printed circuit boards.
- High temperature soldering guaranteed: 260°C/10 seconds.

### Mechanical data

- Case: SPB molded plastic.
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Leads solderable per MIL-STD-750,
- Mounting position: Any.



### Circuit diagram



### Maximum Ratings (at Ta=25 °C unless otherwise specified)

| Characteristic                                          | Symbol                             | CSPB40M-HF | Units |
|---------------------------------------------------------|------------------------------------|------------|-------|
| Peak repetitive reverse voltage                         | $V_{RRM}$                          | 1000       | V     |
| RMS reverse voltage                                     | $V_{RMS}$                          | 700        | V     |
| DC blocking voltage                                     | $V_{DC}$                           | 1000       | V     |
| Maximum average forward output current                  | $I_{F(AV)}$                        | 4          | A     |
| Peak forward surge current, 8.3ms single half-sine-wave | @T <sub>J</sub> =25°C<br>$I_{FSM}$ | 150        | A     |

### Thermal Characteristics

| Characteristic                              | Symbol          | CSPB40M-HF | Units |
|---------------------------------------------|-----------------|------------|-------|
| Typical thermal resistance per leg (Note 1) | $R_{\theta JA}$ | 37         | °C/W  |
|                                             | $R_{\theta JC}$ | 10.4       |       |
|                                             | $R_{\theta JL}$ | 7.5        |       |
| Operating junction temperature range        | $T_J$           | -55 ~ +150 | °C    |
| Storage temperature range                   | $T_{STG}$       | -55 ~ +150 | °C    |

Note: 1. Device mounted on PCB with 10mm x 20mm x 0.1mm copper pad areas.

## Electrical Characteristics (at Ta=25 °C unless otherwise specified)

| Parameter                          | Symbol | Test conditions         | Typ.                   | Max. | Units |
|------------------------------------|--------|-------------------------|------------------------|------|-------|
| Max. instantaneous forward voltage | $V_F$  | $I_F = 4A$ Per diode    |                        | 1.15 | V     |
| Max. reverse current               | $I_R$  | Rated $V_R$ , Per diode | @T <sub>A</sub> =25°C  | 10   | μA    |
|                                    |        |                         | @T <sub>A</sub> =125°C | 300  |       |

## Rating and Characteristic Curves (CSPB40M-HF)

Fig.1 - Forward Current Derating Curve

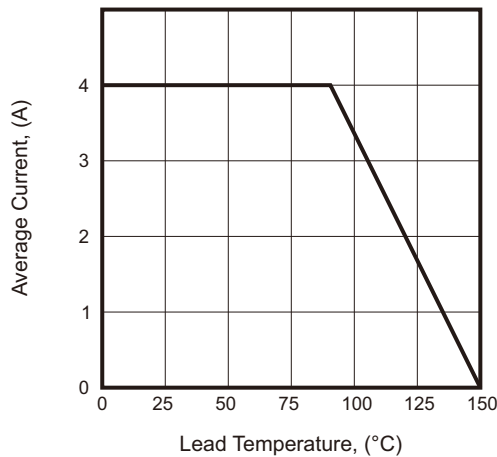


Fig.2 - Surge Current Derating Curve

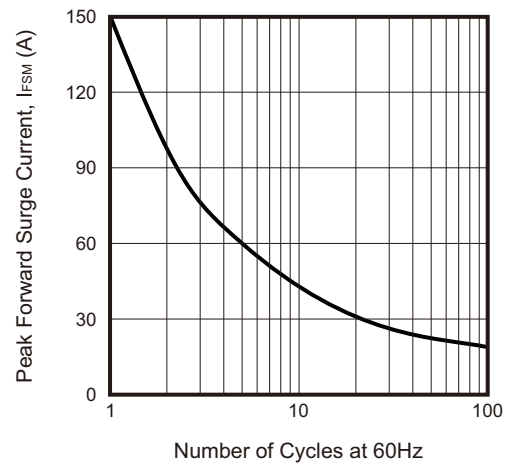


Fig.3 - Typical Forward Voltage Characteristic

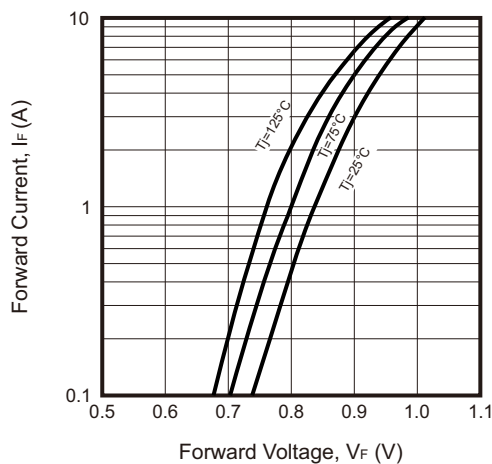
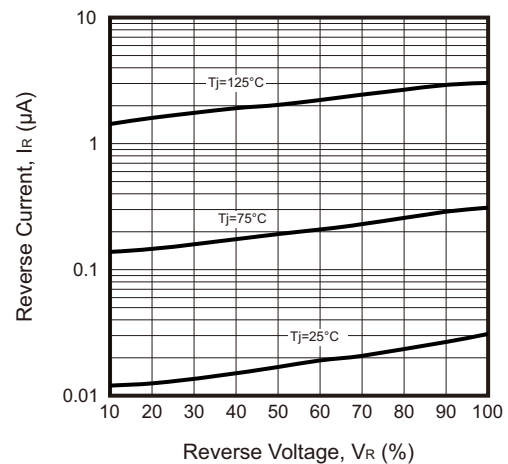
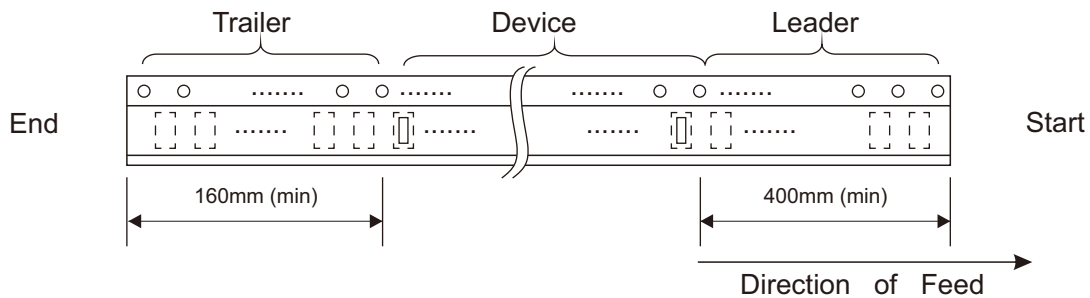
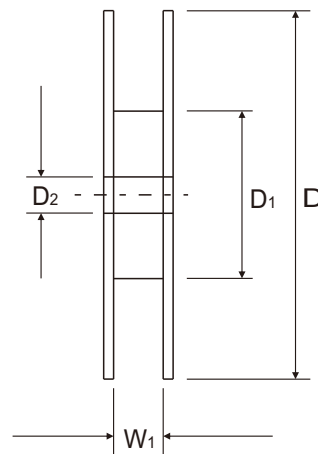
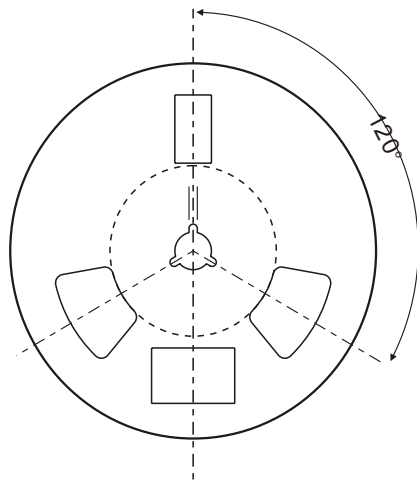
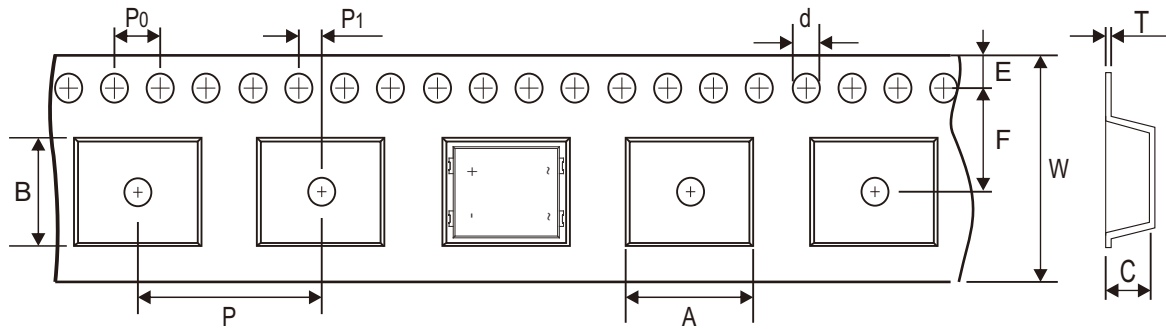


Fig.4 - Typical Reverse Characteristic



## Reel Taping Specification



| SPB | SYMBOL | A             | B             | C             | d             | D              | D1            | D2            |
|-----|--------|---------------|---------------|---------------|---------------|----------------|---------------|---------------|
|     | (mm)   | 11.30 ± 0.10  | 9.00 ± 0.10   | 1.80 ± 0.10   | 1.50 ± 0.10   | 330.00 ± 1.00  | 75.00 ± 1.00  | 13.50 ± 0.05  |
|     | (inch) | 0.445 ± 0.004 | 0.354 ± 0.004 | 0.071 ± 0.004 | 0.059 ± 0.004 | 12.992 ± 0.039 | 2.953 ± 0.039 | 0.531 ± 0.002 |

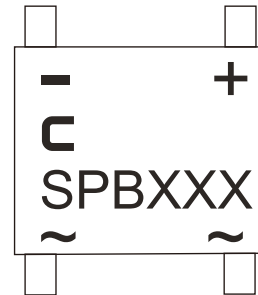
| SPB | SYMBOL | E             | F             | P             | P0            | P1            | T             | W             | W1            |
|-----|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|     | (mm)   | 1.75 ± 0.10   | 7.50 ± 0.05   | 16.00 ± 0.05  | 4.00 ± 0.05   | 2.00 ± 0.05   | 0.30 ± 0.05   | 16.00 ± 0.10  | 17.00 ± 1.00  |
|     | (inch) | 0.069 ± 0.004 | 0.295 ± 0.002 | 0.630 ± 0.002 | 0.157 ± 0.002 | 0.079 ± 0.002 | 0.012 ± 0.002 | 0.630 ± 0.004 | 0.669 ± 0.039 |

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

REV:A

## Marking Code

| Part Number | Marking code |
|-------------|--------------|
| CSPB40M-HF  | SPB40M       |

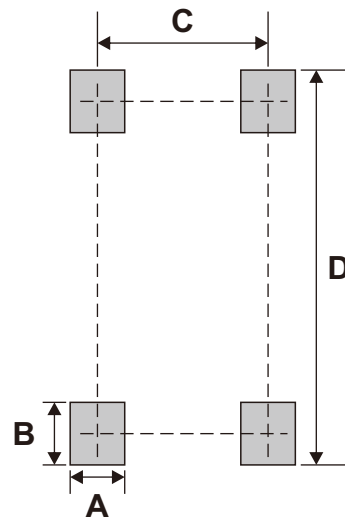


XXX = Product type marking code  
C = Comchip Logo

## Suggested PAD Layout

| SIZE | SPB   |        |
|------|-------|--------|
|      | (mm)  | (inch) |
| A    | 1.63  | 0.064  |
| B    | 1.87  | 0.074  |
| C    | 5.10  | 0.201  |
| D    | 11.80 | 0.465  |

Note: 1. The pad layout is for reference purposes only.




## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SPB       | 1,500           | 13                  |

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