

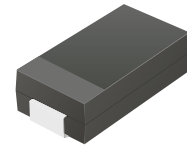
## CDBB540-HF Thru. CDBB5100-HF

**Reverse Voltage: 40 to 100 Volts**

**Forward Current: 5.0 Amp**

**RoHS Device**

**Halogen Free**

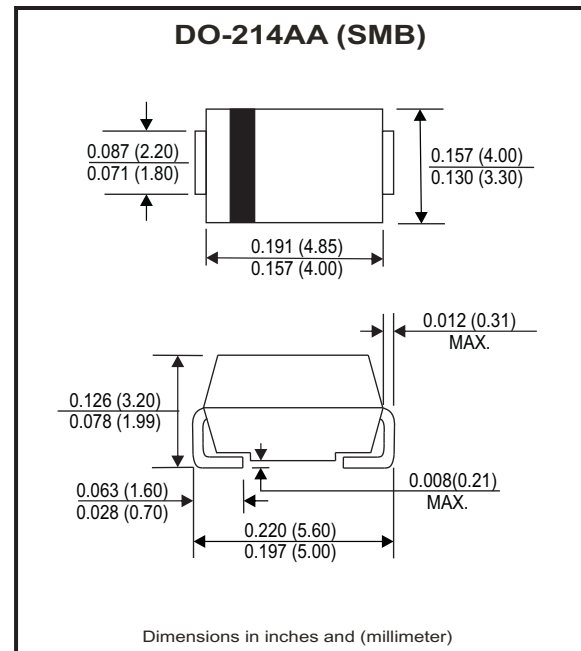


### Features

- Low Profile surface mount applications in order to optimize board space.
- Low power loss, high efficiency.
- High current capability, low forward voltage drop.
- High surge capability.
- Guard ring for overvoltage protection.
- Ultra high-speed switching.
- Silicon epitaxial planar chip, metal silicon junction.

### Mechanical data

- Epoxy: UL94-V0 rate flame retardant.
- Case: Molded plastic, DO-214AA / SMB
- Terminals: solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Weight: 0.091 grams



### Maximum Ratings and Electrical Characteristics

Ratings at  $T_a=25^{\circ}\text{C}$  unless otherwise noted.  
Single phase, half wave, 60Hz, resistive or inductive loaded.  
For capacitive load, derate current by 20% .

| Parameter                                                          | Symbol    | CDBB 540-HF | CDBB 560-HF | CDBB 5100-HF | Units              |
|--------------------------------------------------------------------|-----------|-------------|-------------|--------------|--------------------|
| Max. Repetitive peak reverse voltage                               | $V_{RRM}$ | 40          | 60          | 100          | V                  |
| Max. DC blocking voltage                                           | $V_{DC}$  | 40          | 60          | 100          | V                  |
| Max. RMS voltage                                                   | $V_{RMS}$ | 28          | 42          | 70           | V                  |
| Max. instantaneous forward voltage @5.0A, $T_a=25^{\circ}\text{C}$ | $V_F$     | 0.55        | 0.75        | 0.81         | V                  |
| Operating Temperature                                              | $T_J$     | -50 to +150 |             |              | $^{\circ}\text{C}$ |

| Parameter                  | Conditions                                                           | Symbol          | MIN. | TYP. | MAX. | Units                |
|----------------------------|----------------------------------------------------------------------|-----------------|------|------|------|----------------------|
| Forward rectified current  | see Fig.1                                                            | $I_o$           |      |      | 5.0  | A                    |
| Forward surge current      | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$       |      |      | 125  | A                    |
| Reverse Current            | $V_R = V_{RRM}$ $T_a=25^{\circ}\text{C}$                             | $I_R$           |      |      | 0.5  | mA                   |
|                            | $V_R = V_{RRM}$ $T_a=100^{\circ}\text{C}$                            | $I_R$           |      |      | 20   | mA                   |
| Thermal Resistance         | Junction to ambient                                                  | $R_{\theta JA}$ |      | 24   |      | $^{\circ}\text{C/W}$ |
| Diode Junction capacitance | f=1MHz and applied 4V DC reverse Voltage                             | $C_J$           |      | 380  |      | pF                   |
| Storage temperature        |                                                                      | $T_{STG}$       | -50  |      | +175 | $^{\circ}\text{C}$   |

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

REV:D

## RATING AND CHARACTERISTIC CURVES (CDBB540-HF Thru. CDBB5100-HF)

Fig.1 - Typical Forward Current Derating Curve

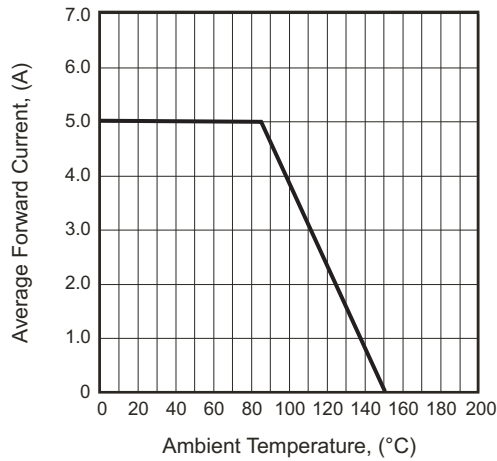


Fig.2 - Typical Forward Characteristics

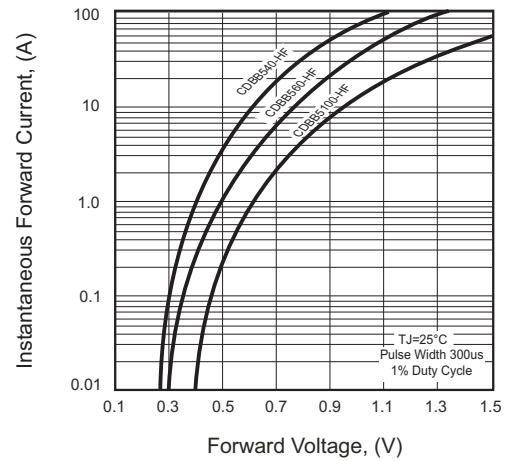


Fig.3 - Maximum Non-repetitive Forward Surge Current

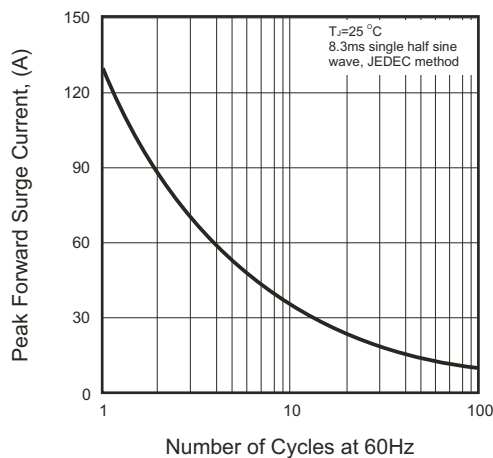


Fig.4 - Typical Junction Capacitance

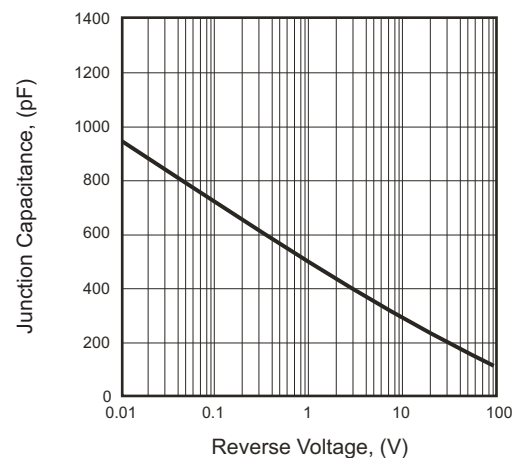
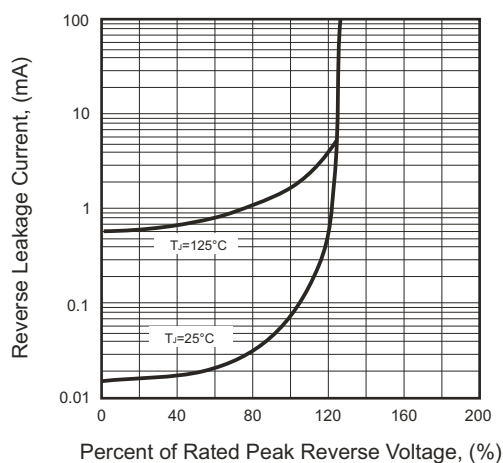
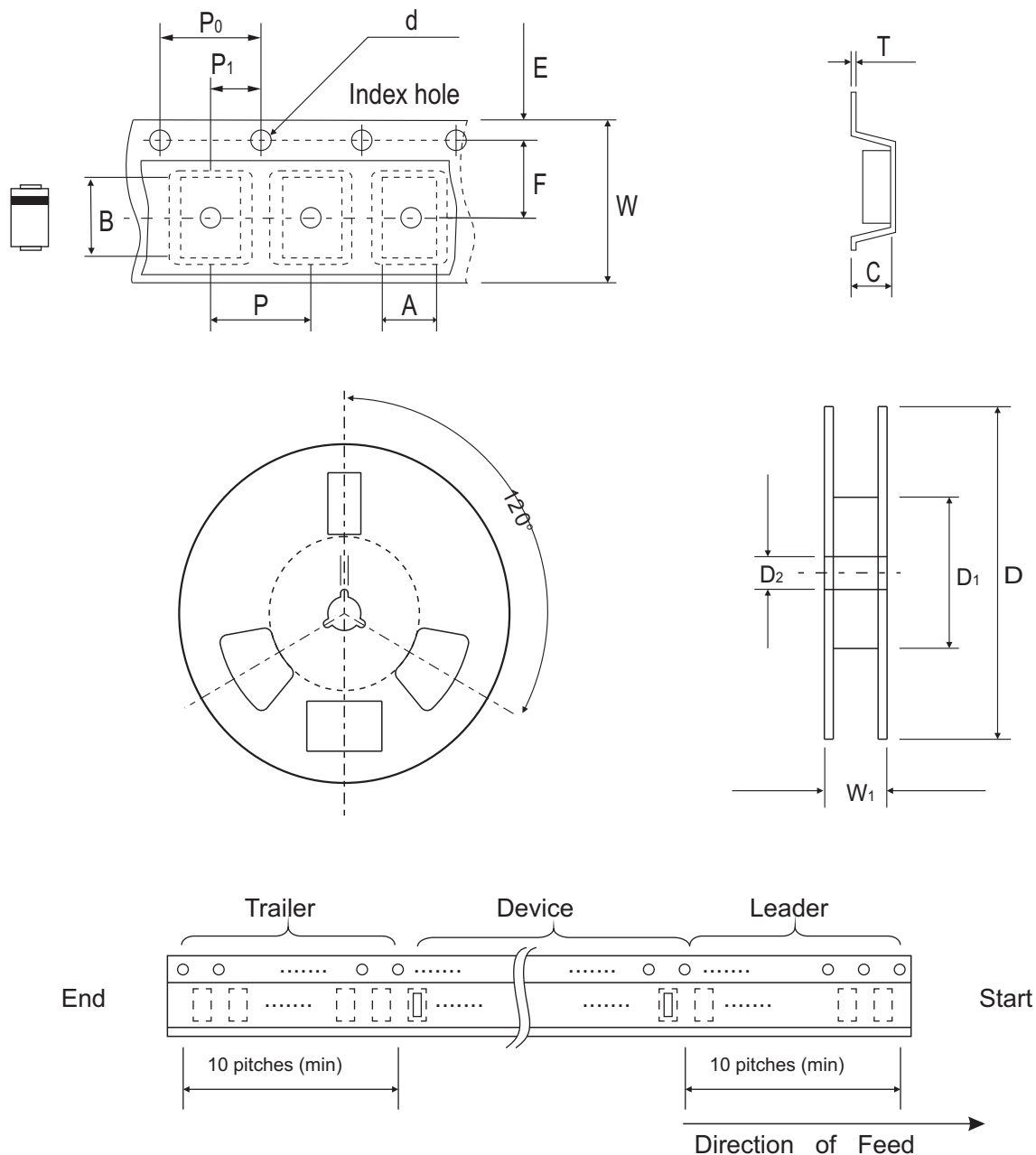


Fig.5 - Typical Reverse Characteristics



## Reel Taping Specification



| DO-214AA<br>(SMB) | SYMBOL | A                 | B                 | C                 | d                 | D                 | D <sub>1</sub> | D <sub>2</sub>    |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------|-------------------|
|                   | (mm)   | $4.00 \pm 0.10$   | $5.90 \pm 0.10$   | $3.00 \pm 0.10$   | $1.50 \pm 0.10$   | $330 \pm 2.00$    | 50.0 MIN.      | $13.50 \pm 0.50$  |
|                   | (inch) | $0.157 \pm 0.004$ | $0.232 \pm 0.004$ | $0.118 \pm 0.004$ | $0.059 \pm 0.004$ | $12.99 \pm 0.079$ | 1.969 MIN.     | $0.531 \pm 0.020$ |

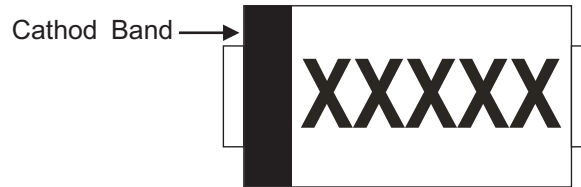
| DO-214AA<br>(SMB) | SYMBOL | E                 | F                 | P                 | P <sub>0</sub>    | P <sub>1</sub>    | T                 | W                 | W <sub>1</sub>    |
|-------------------|--------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                   | (mm)   | $1.75 \pm 0.10$   | $5.50 \pm 0.10$   | $8.00 \pm 0.10$   | $4.00 \pm 0.10$   | $2.00 \pm 0.10$   | $0.60 \pm 0.10$   | $12.0 \pm 0.30$   | $18.4 \pm 1.00$   |
|                   | (inch) | $0.069 \pm 0.004$ | $0.217 \pm 0.004$ | $0.315 \pm 0.004$ | $0.157 \pm 0.004$ | $0.079 \pm 0.004$ | $0.236 \pm 0.004$ | $0.472 \pm 0.012$ | $0.724 \pm 0.040$ |

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## Marking Code

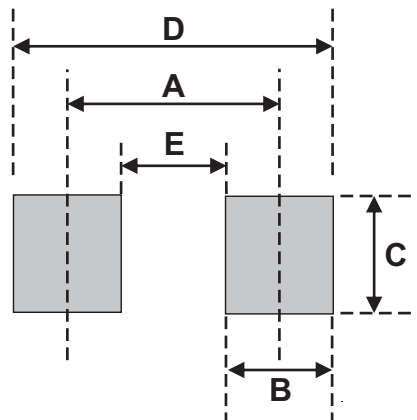
| Part Number | Marking Code |
|-------------|--------------|
| CDBB540-HF  | SS54         |
| CDBB560-HF  | SS56         |
| CDBB5100-HF | SS510        |



XXXX / XXXXX = Product type marking code

## Suggested PAD Layout

| SIZE | DO-214AA (SMB) |        |
|------|----------------|--------|
|      | (mm)           | (inch) |
| A    | 4.30           | 0.169  |
| B    | 2.50           | 0.098  |
| C    | 2.30           | 0.091  |
| D    | 6.80           | 0.268  |
| E    | 1.80           | 0.071  |



## Standard Packaging

| Case Type         | REEL PACK       |                     |
|-------------------|-----------------|---------------------|
|                   | REEL<br>( pcs ) | Reel Size<br>(inch) |
| DO-214AA<br>(SMB) | 3,000           | 13                  |

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