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## Super Low VF SMD Schottky Barrier Rectifiers



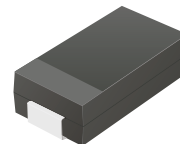
# CDBA120SL-HF Thru. CDBA140SL-HF

Reverse Voltage: 20 to 40 Volts

Forward Current: 1.0 Amp

RoHS Device

Halogen free

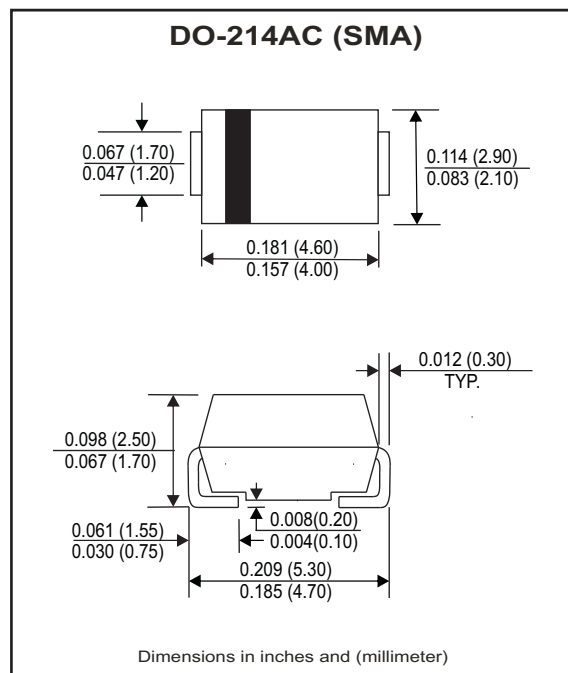


### Features

- 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.
- Guardring 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-214AC / SMA
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- weight: 0.055 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    | CDBA120SL-HF | CDBA130SL-HF | CDBA140SL-HF | Units            |
|---|-----------|--------------|--------------|--------------|------------------|
| Max. Repetitive peak reverse voltage                              | $V_{RRM}$ | 20           | 30           | 40           | V                |
| Max. DC blocking voltage  | $V_{DC}$  | 20           | 30           | 40           | V                |
| Max. RMS voltage  | $V_{RMS}$ | 14           | 21           | 28           | V                |
| Max. instantaneous forward voltage @ 1.0A, $T_A=25^\circ\text{C}$ | $V_F$     | 0.33         |              |              | V                |
| Operating Temperature   | $T_J$     | -50 to +100  |              |              | $^\circ\text{C}$ |

| Parameter                  | Conditions   | Symbol          | MIN. | TYP. | MAX. | Units                     |
|----------------------------|--|-----------------|------|------|------|---------------------------|
| Forward rectified current  | see Fig.1  | $I_o$           |      |      | 1.0  | A                         |
| Forward surge current      | 8.3ms single half sine-wave superimposed on rate load (JEDEC method) | $I_{FSM}$       |      |      | 30   | A                         |
| Reverse current            | $V_R = V_{RRM}$ $T_A=25^\circ\text{C}$                               | $I_R$           |      |      | 1.0  | mA                        |
|                            | $V_R = V_{RRM}$ $T_A=100^\circ\text{C}$                              | $I_R$           |      |      | 20   | mA                        |
| Thermal resistance         | Junction to ambient  | $R_{\theta JA}$ |      | 70   |      | $^\circ\text{C}/\text{W}$ |
| Diode junction capacitance | f=1MHz and applied 4V DC reverse Voltage                             | $C_J$           |      | 160  |      | pF                        |
| Storage temperature        |  | $T_{STG}$       | -50  |      | +150 | $^\circ\text{C}$          |

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## RATING AND CHARACTERISTIC CURVES (CDBA120SL-HF Thru. CDBA140SL-HF)

Fig.1- Typical Forward Current Derating Curve

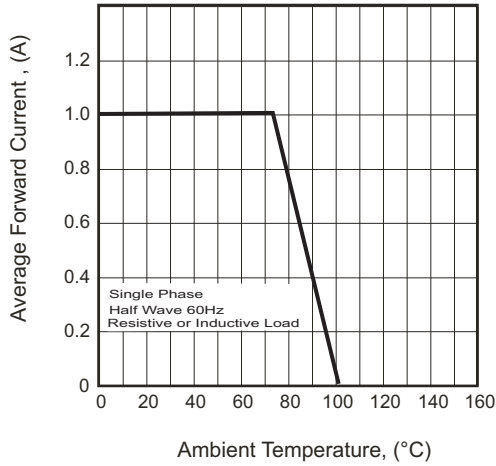


Fig.2- Typical Forward Characteristics

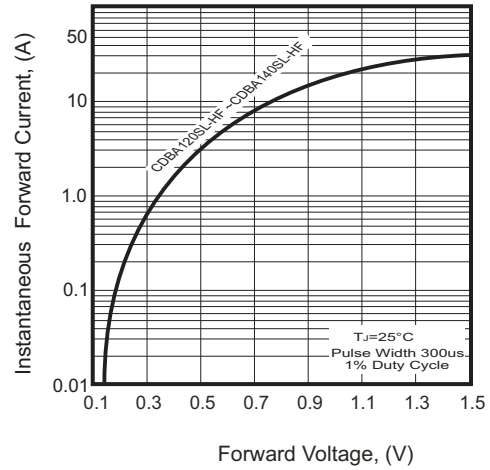


Fig.3- Maximum Non-repetitive Forward Surge Current

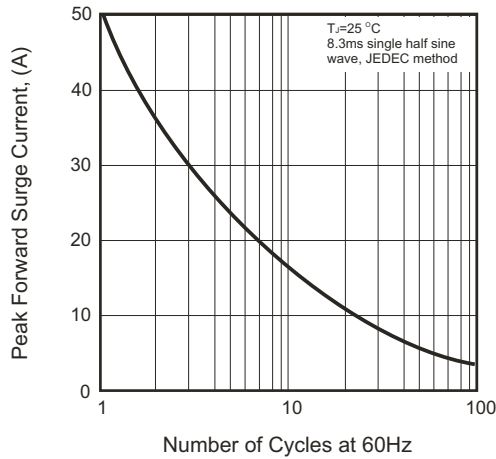


Fig.4- Typical Junction Capacitance

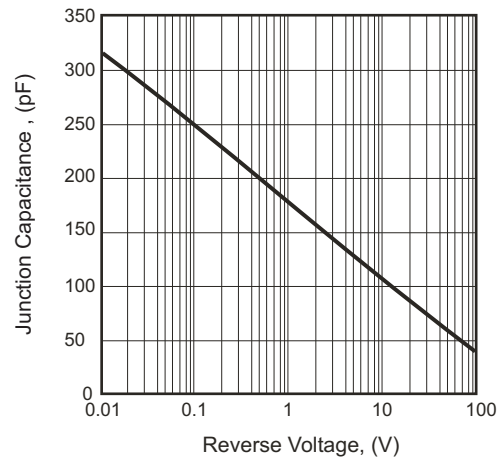
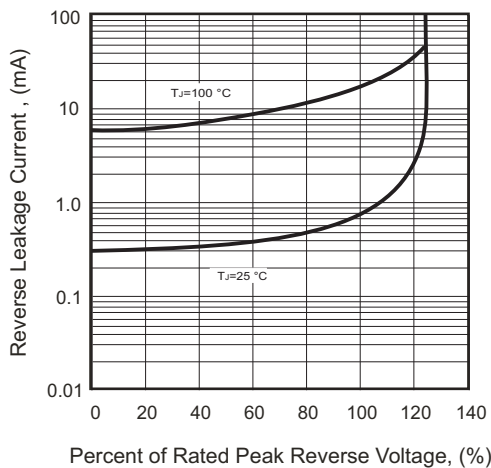


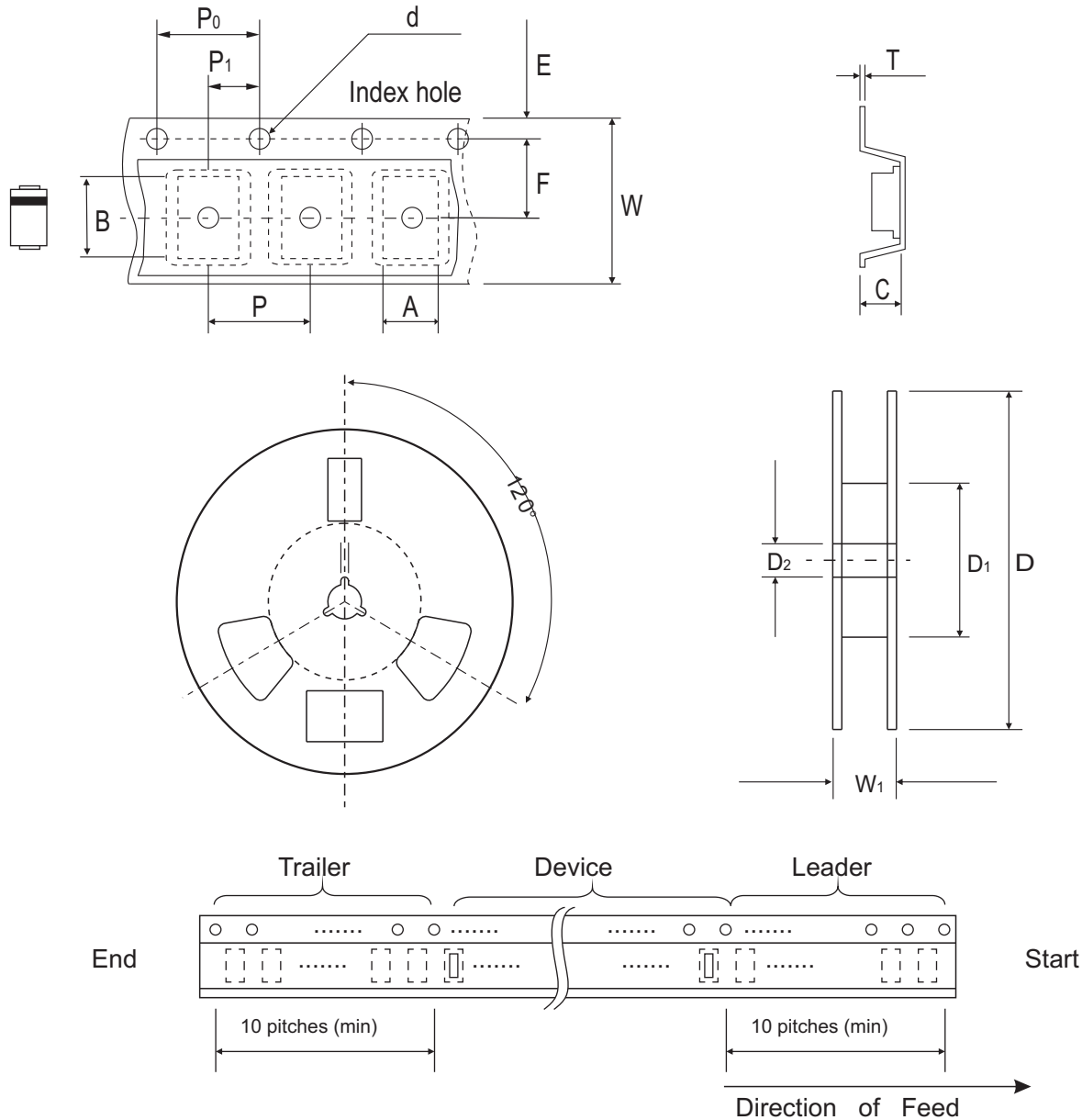
Fig.5- Typical Reverse Characteristics



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## Reel Taping Specification



| DO-214AC (SMA) | SYMBOL | A             | B             | C             | d             | D             | D <sub>1</sub> | D <sub>2</sub> |
|----------------|--------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                | (mm)   | 2.70 ± 0.10   | 5.30 ± 0.10   | 2.66 ± 0.10   | 1.50 ± 0.10   | 330 ± 2.00    | 62.0 MIN.      | 13.50 ± 0.50   |
|                | (inch) | 0.106 ± 0.004 | 0.209 ± 0.004 | 0.105 ± 0.004 | 0.059 ± 0.004 | 12.99 ± 0.079 | 2.441 MIN.     | 0.531 ± 0.020  |

| DO-214AC (SMA) | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | T             | W             | W <sub>1</sub> |
|----------------|--------|---------------|---------------|---------------|----------------|----------------|---------------|---------------|----------------|
|                | (mm)   | 1.75 ± 0.10   | 5.50 ± 0.10   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.10    | 0.60 ± 0.10   | 12.0 ± 0.30   | 18.40 ± 1.00   |
|                | (inch) | 0.069 ± 0.004 | 0.217 ± 0.004 | 0.157 ± 0.004 | 0.157 ± 0.004  | 0.079 ± 0.004  | 0.236 ± 0.004 | 0.472 ± 0.012 | 0.724 ± 0.039  |

# Super Low VF SMD Schottky Barrier Rectifiers



## Marking Code

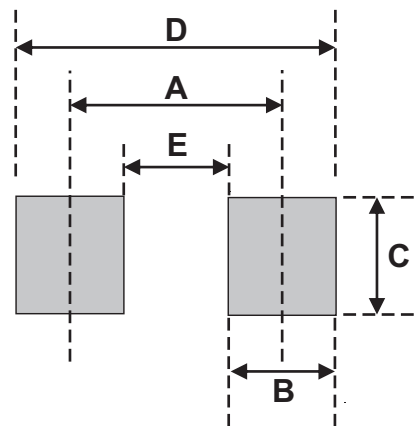
| Part Number  | Marking Code |
|--------------|--------------|
| CDBA120SL-HF | SLS12        |
| CDBA130SL-HF | SLS13        |
| CDBA140SL-HF | SLS14        |



xxxx = Product type marking code

## Suggested PAD Layout

| SIZE | DO-214AC(SMA) |        |
|------|---------------|--------|
|      | (mm)          | (inch) |
| A    | 4.00          | 0.157  |
| B    | 2.50          | 0.100  |
| C    | 1.70          | 0.068  |
| D    | 6.50          | 0.256  |
| E    | 1.50          | 0.060  |



## Standard Packaging

| Case Type      | REEL PACK    |                  |
|----------------|--------------|------------------|
|                | REEL ( pcs ) | Reel Size (inch) |
| DO-214AC (SMA) | 5,000        | 13               |