

DUAL COMMON CATHODE SCHOTTKY RECTIFIER

Features

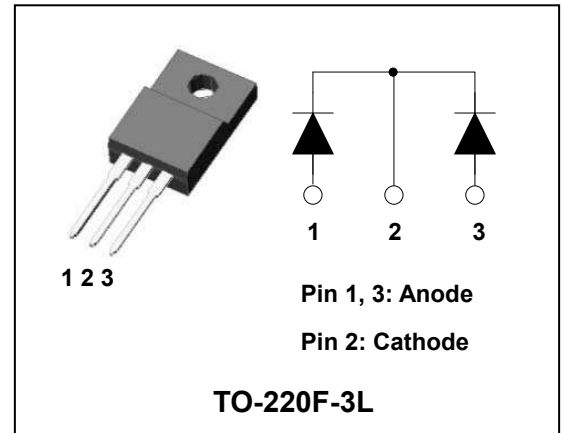
- Low forward voltage drop and leakage current
- Low power loss and High efficiency
- High surge capacity
- Dual common cathode rectifier
- Full lead (Pb)-free and RoHS compliant device

Applications

- Power supply - Output rectification
- Converter
- Free-wheeling
- Reverse battery protection
- Power inverters

Description

The SDB16200PI has two schottky barriers arranged in a common cathode configuration. Typical applications are in switching power supplies, converters, free-wheeling diodes, and reverse battery protection.



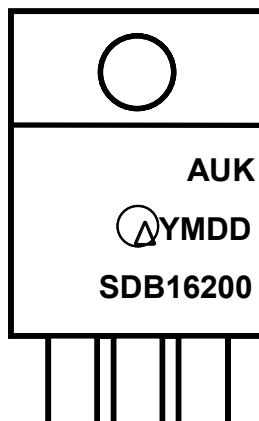
Product Characteristics

| | |
|-------------------|--------|
| $I_{F(AV)}$ | 2 X 8A |
| V_{RRM} | 200V |
| V_{FM} at 125°C | 0.78V |
| I_{FSM} | 180A |

Ordering Information

| Device | Marking Code | Package | Packaging |
|------------|--------------|------------|-----------|
| SDB16200PI | SDB16200 | TO-220F-3L | Tube |

Marking Information



AUK = Manufacture Logo

Δ = Control Code of Manufacture

YMDD = Date Code Marking

- Y = Year Code

- M = Monthly Code

- DD = Daily Code

SDB16200 = Specific Device Code

Absolute Maximum Ratings (Limiting Values, Per diode)

| Characteristic | | Symbol | Value | Unit |
|---|--------------|---------------------------------|-----------------|------|
| Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage | | V_{RRM} V_{RWM} V_R | 200 | V |
| Maximum average forward rectified current | per diode | $I_{F(AV)}$ | 8 | A |
| | total device | | 16 | |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode | | I_{FSM} | 180 | A |
| Storage temperature range | | T_{stg} | -45°C to +150°C | °C |
| Maximum operating junction temperature | | T_j | 150 | °C |

Thermal Characteristics

| Characteristic | | Symbol | Value | Unit |
|---|--------------|---------------|-------|------|
| Maximum thermal resistance junction to case | per diode | $R_{th(j-c)}$ | 4.0 | °C/W |
| | total device | | 3.4 | |

Electrical Characteristics (Per Diode)

| Characteristic | Symbol | Test Condition | | Min. | Typ. | Max. | Unit |
|---------------------------|----------------|-----------------|---------------------|------|------|------|------|
| Peak forward voltage drop | $V_{FM}^{(1)}$ | $I_{FM} = 8A$ | $T_j = 25^\circ C$ | - | - | 0.92 | V |
| | | | $T_j = 125^\circ C$ | - | 0.70 | 0.78 | V |
| Reverse leakage current | $I_{RM}^{(1)}$ | $V_R = V_{RRM}$ | $T_j = 25^\circ C$ | - | - | 0.1 | mA |
| | | | $T_j = 125^\circ C$ | - | - | 100 | mA |

Note: (1) Pulse test: $t_p \leq 380 \mu s$, Duty cycle $\leq 2\%$

To evaluate the conduction losses use the following equation:

$$P = 0.64 \times I_{F(AV)} + 0.025 I_F^2 (RMS)$$

Rating and Characteristic Curves

Fig. 1) Typical Forward Characteristics

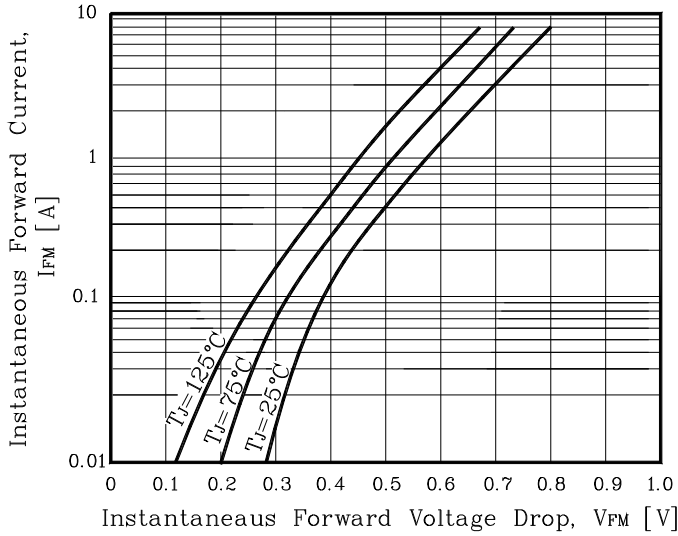


Fig. 2) Typical Reverse Characteristics

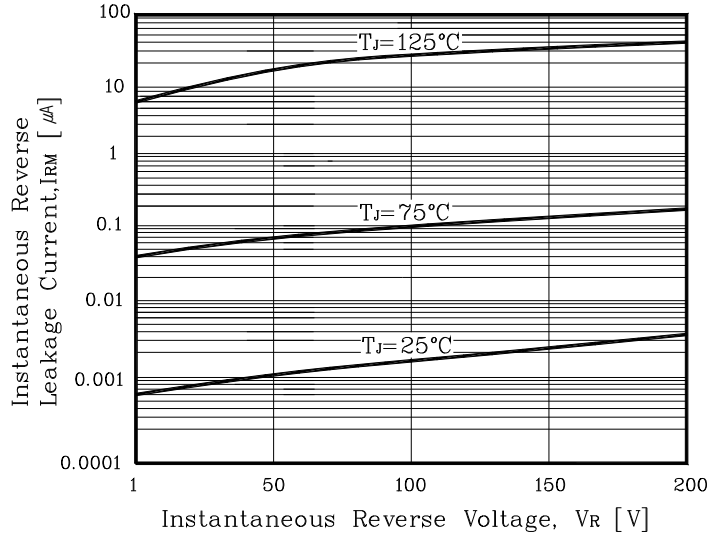


Fig. 3) Maximum Forward Derivative Curve

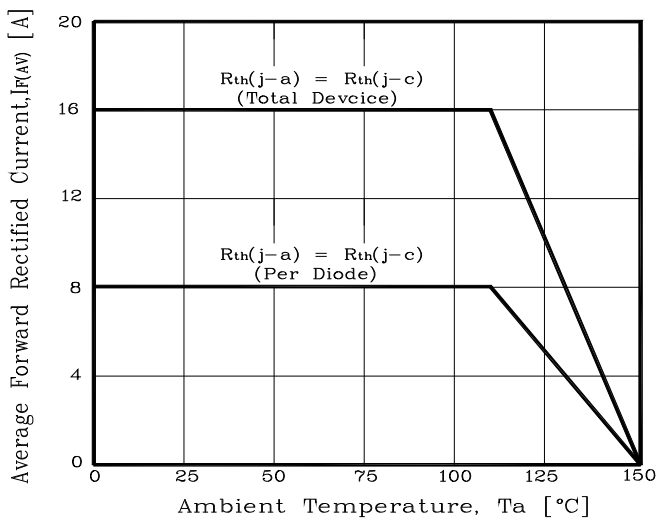


Fig. 4) Forward Power Dissipation

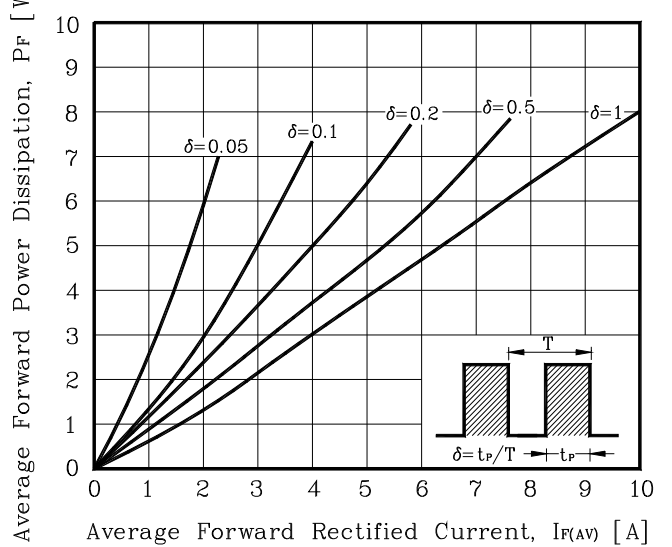


Fig. 5) Maximum Non-Repetitive Peak Forward Surge Current

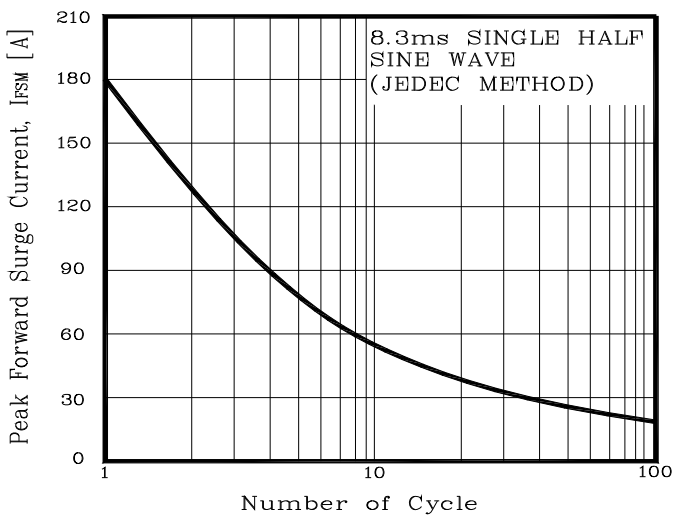
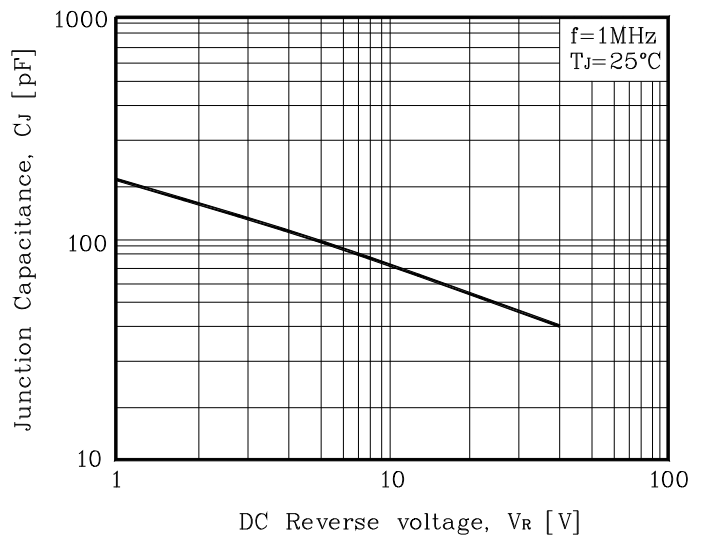
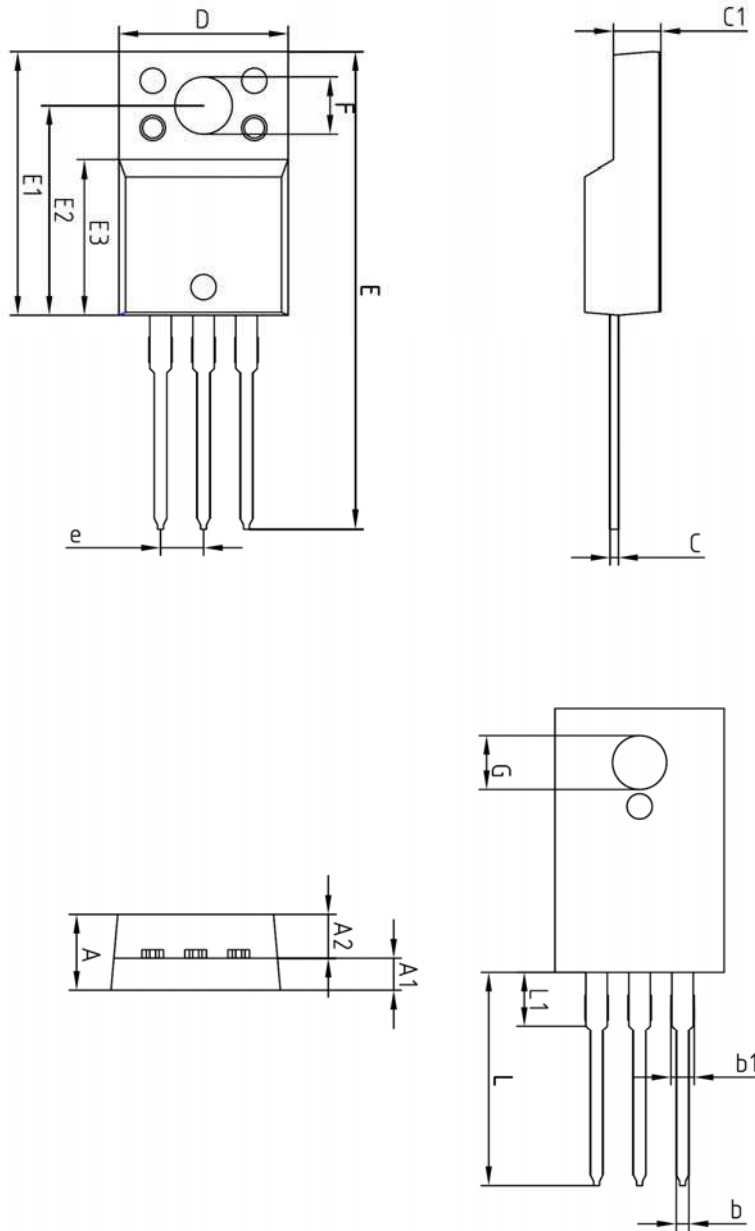


Fig. 6) Typical Junction Capacitance



Package Outline Dimension



| SYMBOL | MILLIMETERS | | | NOTE |
|--------|-------------|---------|---------|------|
| | MINIMUM | NOMINAL | MAXIMUM | |
| A | - | - | 4.60 | |
| A1 | 2.45 | 2.50 | 2.55 | |
| A2 | 1.95 | 2.00 | 2.05 | |
| b | 0.65 | 0.75 | 0.85 | |
| b1 | 1.07 | 1.27 | 1.47 | |
| C | 0.40 | 0.50 | 0.60 | |
| C1 | 2.70 | 2.80 | 2.90 | |
| D | 9.90 | 10.00 | 10.10 | |
| E | 28.00 | - | 28.60 | |
| E1 | 15.50 | 15.60 | 15.70 | |
| E2 | 12.30 | 12.40 | 12.50 | |
| E3 | 9.15 | 9.20 | 9.25 | |
| F | 3.30 | 3.40 | 3.50 | |
| G | 3.10 | 3.20 | 3.30 | |
| e | 2.54 BSC | | | |
| L | 12.40 | - | 13.00 | |
| L1 | 3.46 BSC | | | |

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