



B130LAW

1.0A SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

Features

- Guard Ring Die Construction for Transient Protection
- Very Low Forward Voltage Drop
- Lead, Halogen and Antimony Free, RoHS Compliant "Green" Device (Notes 3 and 4)

Mechanical Data

- Case: SOD-123
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Lead Free Plating (Matte Tin Finish annealed over Alloy 42 leadframe) Solderable per MIL-STD-202, Method 208
- Polarity: Cathode Band
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.01 grams (approximate)



Top View

Maximum Ratings @T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.

| Characteristic | Symbol | Value | Unit | |
|---|--|-------|------|--|
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | 30 | V | |
| RMS Reverse Voltage | V _{R(RMS)} | 21 | V | |
| Average Forward Current (See Figure 6) | I _{F(AV)} | 1.0 | А | |
| Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load | IFSM | 12 | A | |

Thermal Characteristics

| Characteristic | Symbol | Value | Unit |
|---|---------------------|-------------|------|
| Power Dissipation (Note 2) | PD | 450 | mW |
| Typical Thermal Resistance Junction to Ambient (Note 2) | $R_{	ext{	heta}JA}$ | 222 | °C/W |
| Operating Temperature Range (See Figure 7) | TJ | -55 to +125 | °C |
| Storage Temperature Range | T _{STG} | -55 to +150 | °C |

Electrical Characteristics @T_A = 25°C unless otherwise specified

| Characteristic | Symbol | Min | Тур | Max | Unit | Test Condition |
|------------------------------------|--------------------|-----|----------------------|------------------|------|--|
| Reverse Breakdown Voltage (Note 1) | V _{(BR)R} | 30 | _ | | V | I _R = 1.5mA |
| Forward Voltage | V _F | | 0.25 0.35 0.38 | 0.37 0.42 | V | I _F = 0.1A I _F = 0.7A I _F =1.0A |
| Leakage Current (Note 1) | I _R | | 0.15 | 1.0 | mA | V _R = 30V, T _A = 25°C |
| Total Capacitance | Ст | | 40 | | pF | V _R = 10V, f = 1.0MHz |

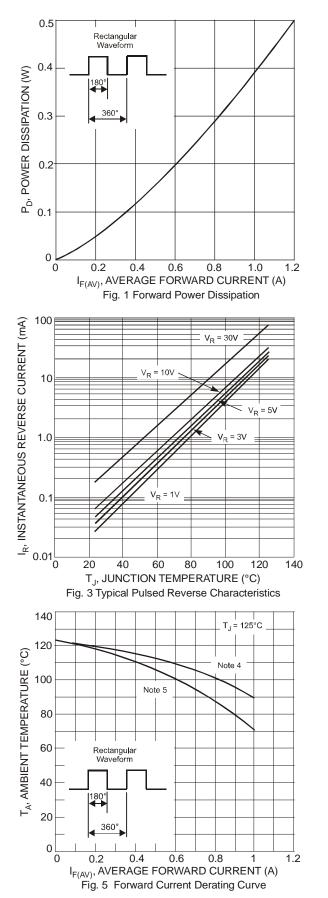
Notes: 1.

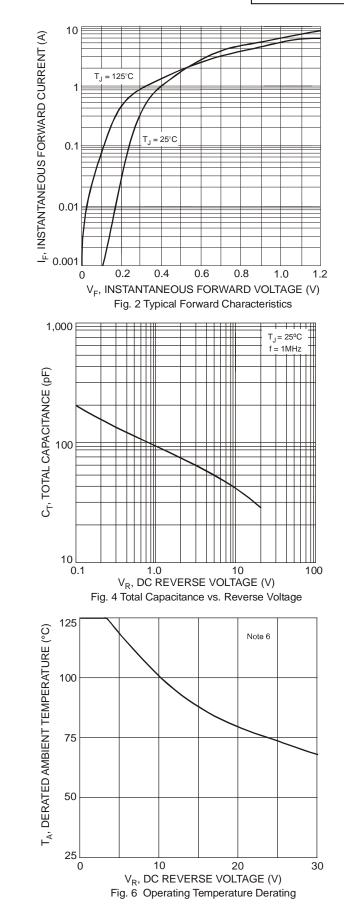
Short duration pulse test used to minimize self-heating effect. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf. 2. 3.

No purposefully added lead. Halogen and Antimony Free. Product manufactured with Data Code V9 (week 33, 2008) and newer are built with Green Molding Compound. Product manufactured prior to Date 4. Code V9 are built with Non-Green Molding Compound and may contain Halogens or Sb₂O₃ Fire Retardants.

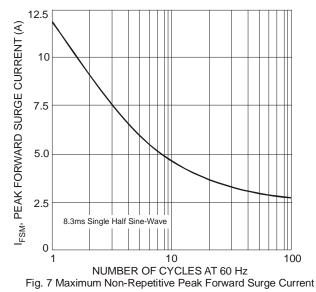












B130LAW

- Device mounted on GETEK substrate, 2"x2", 2 oz. copper, double-sided, cathode pad dimensions 0.75" x 1.0", anode pad dimensions 0.25" x 1.0".
 Device mounted on FR-4 substrate, 2"x2", 2 oz. copper, single-sided, pad layout as per Diodes Inc. suggested pad layout document AP02001 which can be found on our website at http://www.diodes.com/datasheets/ap02001.pdf.
 - 7. R_{0JA} estimated to be approximately 220 °C/W.

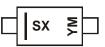
Ordering Information (Note 8)

| Part Number | Case | Packaging |
|-------------|---------|------------------|
| B130LAW-7-F | SOD-123 | 3000/Tape & Reel |

Notes: 8. For packaging details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information

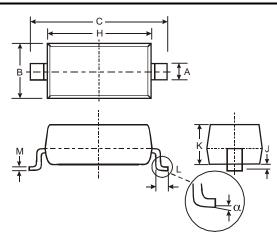
Notes:



SX = Product Type Marking Code YM = Date Code Marking Y = Year ex: T = 2006 M = Month (ex: 9 = September)

| Date Code Key | | | | | | | | | | | | |
|---------------|-----|-----|------|-----|------|-----|-----|------|-----|------|-----|------|
| Year | 200 | 6 | 2007 | | 2008 | 20 | 009 | 2010 | | 2011 | 2 | 2012 |
| Code | Т | | U | | V | ١ | N | Х | | Y | | Z |
| Month | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Code | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | N | D |

Package Outline Dimensions

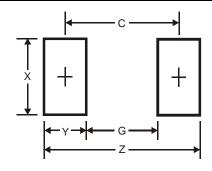


| SOD-123 | | | | | |
|---------|----------------------|------|--|--|--|
| Dim | Min | Max | | | |
| Α | 0.55 | Тур | | | |
| В | 1.40 | 1.70 | | | |
| С | 3.55 | 3.85 | | | |
| Н | 2.55 2.85 | | | | |
| J | 0.00 0.10 | | | | |
| Κ | 1.00 1.35 | | | | |
| L | L 0.25 0.40 | | | | |
| М | M 0.10 0.15 | | | | |
| α | 0 | 8° | | | |
| All Dir | All Dimensions in mm | | | | |



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Suggested Pad Layout



| Dimensions | Value (in mm) |
|------------|---------------|
| Z | 4.9 |
| G | 2.5 |
| Х | 0.7 |
| Y | 1.2 |
| С | 3.7 |

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