

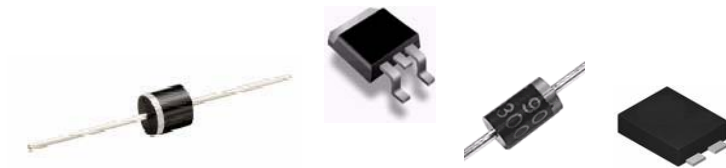


PIONEER OF POWER SOLUTION

**Sirectifier
Semiconductors**

BY-PASS DIODE

POWER PACKAGE



 **HIGH EFFICIENCY**
 **ESD PROTECTION**

 **HIGH DENSITY PACKAGE**



 **Green
Product**

SIRECT

BY-PASS DIODE FOR BIPV APPLICATION

Introduction

In BIPV (Building-Integrated Photovoltaic) systems, the Photovoltaic solar cells can be imbedded into standard building materials such as roofs and windows, thus generating clean energy for the building or structure with no additional cost needed for the replaced materials. What's more, BIPV has proven to be a welcome eye-pleasing addition to buildings, integrating seamlessly into its architectural design. The BIPV can function as glazing, roofing and window materials for a number of applications that including facades, atriums sunshades and skylights.

SIRECT's By-pass Diodes dedicated for BIPV and Hidden Junction Box applications are packaged in our proprietary ultra-compact surface mount Power-ite package, as well as in other compact surface mount packages such as SOD-123, SMC, DO-214AB and axial lead DO-201AD packages. The combination of SIRECT's compact packages, Schottky barrier construction, and Tj ratings over 200°C give designers the reliability, function and flexibility to integrate bypass into BIPV modules and systems easily.

Value-added

1. We can modify currently available packages to fit various special needs or applications and the best Pd (power Dissipation) results. For example Flat-Wing version of Mini-Pak package and SC package for embedded assembly.
2. We provide and accept customized printed circuit board builds for Hidden Junction Box applications.
3. We provide molded ceramic housings and assembled modules as needed.
4. Special package and parameter requirements also welcome.



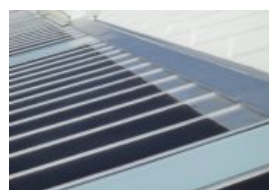
Wire bonding process of assembly



Clip soldered process of assembly



PV Junction Box application



Roof Solar Panel application




Solar Cell application

SPECIFICATIONS OF BY-PASS DIODE



Power-Lite Series

- Smallest possible junction box dimensions within 7(W) X 7(T) X 100(L) mm (with 3 By-pass Diodes connected in series)
- Ceramic base circuit board also available for SMT process requirements

| Part Number | VRRM (V) | IFAV (A) | IFSM (A) | VF (V) | IR (mA) | Package |
|-------------|-------------|-------------|-------------|-----------|------------|---|
| ST1045PL | 45 | 10 | 150 | <0.49 | <0.30 |  POWER-LITE |
| ST1245PL | 45 | 12 | 200 | <0.49 | <0.30 | |
| ST0850PL | 50 | 8 | 150 | <0.60 | <0.10 | |
| ST1250PL | 50 | 12 | 200 | <0.55 | <0.10 | |
| ST1035PL | 32 | 10 | 150 | <0.43 | <0.50 | |
| ST1235PL | 32 | 15 | 200 | <0.42 | <0.50 | |
| ST10100PL | 100 | 10 | 200 | <0.65 | <0.30 | |
| ST10200PL | 200 | 10 | 150 | <0.85 | <0.001 | |
| ST15200PL | 200 | 12 | 250 | <0.85 | <0.001 | |
| ST10250PL | 250 | 10 | 300 | <0.85 | <0.001 | |
| ST10300PL | 300 | 10 | 300 | <0.90 | <0.001 | |

Mini-Pak Series


- Ideal for High-efficiency and Hidden Junction Box applications
- DO-214AB Flat-Wing version for embedded process also available upon request

| Part Number | VRRM (V) | IFAV (A) | IFSM (A) | VF (V) | IR (mA) | Package |
|-------------|-------------|-------------|-------------|-----------|------------|---|
| STL6LSD | 10 | 6 | 25 | 0.45 | 2 |  SOD-123 |
| STL6LSA | 20 | 6 | 50 | 0.45 | 1 |  SMA (DO-214AC) |

SPECIFICATIONS OF BY-PASS DIODE


SC Series

- High rated series for optimum efficiency requirements
- Smallest possible junction box dimensions to within 7(W) X 8.5(T) X 100(L) mm (with 3 By-pass Diodes connected in series)
- Ceramic circuit board also available for SMT process requirements
- Flat-Wing package version available upon request for flexible fit-in

| Part Number | VRRM (v) | IFAV (A) | IFSM (A) | VF (V) | IR (mA) | Package |
|--------------|--------------|-------------|-------------|---------------|------------|---|
| ST1535SC | 32 | 15 | 300 | <0.45 | <0.50 |  SMC (DO-214AB) |
| ST1245SC | 45 | 12 | 250 | <0.49 | <0.40 | |
| ST1545SC | 45 | 15 | 300 | <0.49 | <0.40 | |
| ST2545SC | 45 | 20 | 600 | <0.50 | <0.40 | |
| ST1550SC | 50 | 15 | 400 | <0.55 | <0.10 | |
| ST2050SC | 50 | 20 | 600 | <0.55 | <0.20 | |
| ST10100SC | 100 | 10 | 250 | <0.65 | <0.005 | |
| ST10200SC | 200 | 10 | 400 | <0.65 | <0.005 | |
| ST10250SC | 250 | 10 | 300 | <0.80 | <0.005 | |
| PN20400-1200 | 400- 1200 | 20 | 600 | 0.80- 1.00 | <0.005 | |


DO-201AD Series

- Compact Axial Lead Package



| Part Number | VRRM (v) | IFAV (A) | IFSM (A) | VF (V) | IR (mA) | Package |
|-------------|-------------|-------------|-------------|-----------|------------|---|
| SB1235 | 32 | 12 | 250 | <0.43 | <0.50 |  DO-201AD |
| SB1245 | 45 | 12 | 250 | <0.49 | <0.30 | |
| SB1545 | 45 | 15 | 250 | <0.49 | <0.30 | |
| SB1050 | 50 | 10 | 200 | <0.53 | <0.10 | |
| SB1250 | 50 | 12 | 250 | <0.55 | <0.10 | |
| SB10100 | 100 | 10 | 200 | <0.65 | <0.30 | |
| SB10200 | 200 | 10 | 200 | <0.85 | <0.005 | |

SPECIFICATIONS OF BY-PASS DIODE

Traditional R-6 Series

| Part Number | V _{RRM} (V) | I _{FAV} (A) | I _{FSM} (A) | V _F (V) | I _R (mA) | Package |
|--------------|-------------------------|-------------------------|-------------------------|-----------------------|------------------------|--|
| STLBLAR | 32 | 12 | 250 | <0.43 | <0.50 |  R-6 |
| STMBSAR | 45 | 12 | 250 | <0.49 | <0.35 | |
| STHBSAR | 50 | 12 | 250 | <0.55 | <0.10 | |
| STMCSAR | 45 | 15 | 400 | <0.50 | <0.35 | |
| STHCSAR | 50 | 15 | 400 | <0.55 | <0.10 | |
| STMESAR | 45 | 25 | 600 | <0.50 | <0.50 | |
| STHESAR | 50 | 20 | 600 | <0.55 | <0.20 | |
| STMFSAR | 40 | 30 | 800 | <0.50 | <0.50 | |
| ST30200SAR | 200 | 30 | 600 | <0.80 | <0.005 | |
| PN2040-120AR | 400-1200 | 20 | - | 0.85-1.1 | <0.005 | |
| | 100-1200 | 35 | - | 0.85-1.1 | <0.005 | |

Traditional TO-220 Series

| Part Number | V _{RRM} (V) | I _{FAV} (A) | I _{FSM} (A) | V _F (V) | I _R (mA) | Package |
|----------------|-------------------------|-------------------------|-------------------------|-----------------------|------------------------|--|
| STLBLCG | 32 | 15×2 | 250 | <0.45@15A | 0.5 |  D2-PAK (TO-263AB) |
| SB3045CG | 45 | 15×2 | 400 | <0.51@15A | 0.35 | |
| SB2045AG | 45 | 20 | 600 | <0.50 | 0.35 | |
| ST2545AG | 45 | 25 | 800 | <0.50 | 0.35 | |
| ST3040AG | 40 | 30 | 800 | <0.50 | 0.35 | |
| ST30200AG | 200 | 30 | 600 | <0.80 | 0.005 | |
| STL20 | 32 | 15 | 250 | <0.45 | 0.50 |  TO-220AC |
| ST-20 | 45 | 15 | 250 | <0.51 | 0.35 | |
| ST-30 | 40 | 20 | 400 | <0.45 | 0.50 | |
| ST40 | 40 | 35 | 400 | <0.53 | 0.50 | |
| STHBSAC | 50 | 15 | 400 | <0.55 | 0.10 | |
| STHCSAC | 50 | 20 | 600 | <0.55 | 0.10 | |
| ST3045CT | 45 | 15×2 | 250 | <0.51 | 0.50 | |
| STHESCT | 50 | 15×2 | 400 | <0.55 | 0.10 | |
| STMFSAC | 40 | 30 | 600 | <0.50 | 0.50 | |
| ST30200AC | 200 | 20 | 600 | <0.80 | 0.005 | |
| ST3540-35120AC | 400-1200 | 35 | 800 | 0.85-1.1 | 0.005 | |

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R&D

FAB

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Manufacture

Sirectifier Semiconductors, France



Manufacture

Logistic

Sirectifier Semiconductors Factory, China



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