



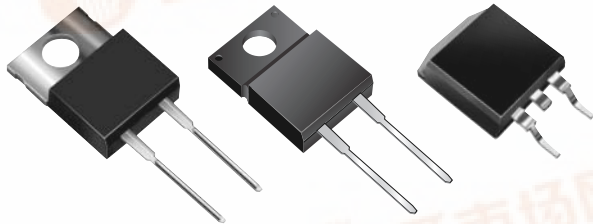
BYS459-1500, BYS459F-1500, BYS459B-1500

New Product

Vishay Semiconductors
formerly General Semiconductor

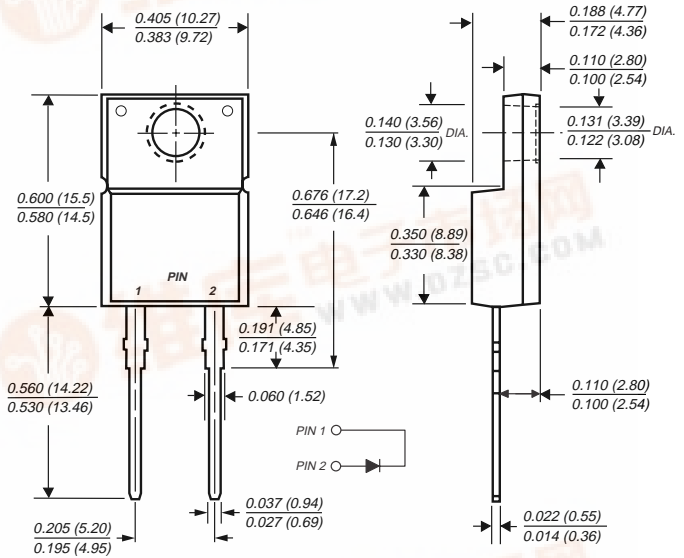
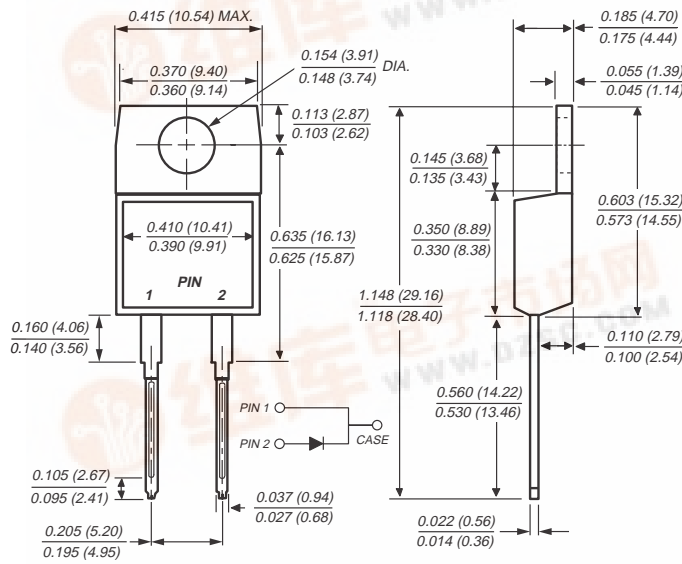
High Voltage Damper Diodes

Reverse Voltage 1500V
Forward Current 6.5A
Reverse Recovery Time 350ns

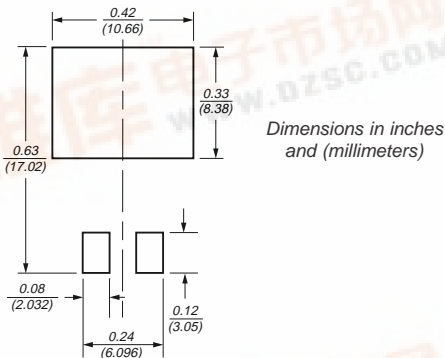


TO-220AC (BYS459)

ITO-220AC (BYS459F)

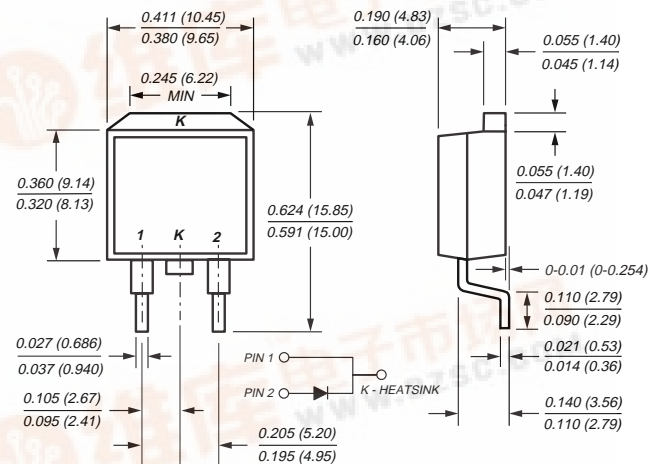


Mounting Pad Layout TO-263AB



Dimensions in inches and millimeters

TO-263AB (BYS459B)



Features

- Plastic package has Underwriters Laboratories Flammability Classification 94V-0
- Ideally suited CRT horizontal deflection
- Fast reverse recovery time
- Fast forward recovery time
- High temperature soldering in accordance with CECC 802 / Reflow guaranteed
- Glass passivated chip junction

Mechanical Data

Case: JEDEC TO-220AC, ITO-220AC & TO-263AB molded plastic body

Terminals: Plated leads, solderable per MIL-STD-750, Method 2026

Polarity: As marked

Mounting Position: Any

Mounting Torque: 10 in-lbs maximum

Weight: 0.08 oz., 2.24 g

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Maximum Ratings (T_A = 25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|--|-----------------------------------|---|------|
| Maximum repetitive peak reverse voltage | V _{RRM} | 1500 | V |
| Maximum working reverse voltage | V _{RWM} | 1300 | V |
| Maximum DC blocking voltage | V _{DC} | 1500 | V |
| Maximum average forward rectified current | I _{F(AV)} | 6.5 | A |
| Peak working forward current at f = 48kHz | I _{F(Peak)} | 12 | A |
| Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) at T _J = 150°C | I _{FSM} | 130 | A |
| Operating junction and storage temperature range | T _J , T _{STG} | -55 to +150 | °C |
| RMS Isolation voltage (BYS459F types only) from terminals to heatsink with t = 1.0 second, RH ≤ 30% | V _{ISOL} | 4500 ⁽¹⁾ 3500 ⁽²⁾ 1500 ⁽³⁾ | V |

Electrical Characteristics (T_J = 25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---|-----------------|------------|----------|
| Maximum instantaneous forward voltage ⁽⁴⁾ I _F = 6.5A, T _J = 25°C I _F = 6.5A, T _J = 125°C | V _F | 1.3 1.2 | V |
| Maximum DC reverse current at V _{RWM} T _J = 25°C T _J = 125°C | I _R | 250 1.0 | μA mA |
| Maximum reverse recovery time at I _F = 1.0A, di/dt = 50A/μs, V _R = 30V | t _{rr} | 350 | ns |
| Maximum reverse recovery charge at I _F = 2.0A, -di/dt = 20A/μs | Q _{rr} | 3.0 | μC |
| Maximum forward recovery time I _F = 6.5A, di/dt = 52A/μs | t _{fr} | 250 | ns |
| Peak forward recovery overshoot voltage I _F = 6.5A, di/dt = 52A/μs | V _{FP} | 20 | V |

Thermal Characteristics (T_A = 25°C unless otherwise noted)

| Parameter | Symbol | BYS459 | BYS459F | BYS459B | Unit |
|---|------------------|--------|---------|---------|------|
| Typical thermal resistance from junction to ambient | R _{θJA} | 60 | 55 | 60 | °C/W |

Notes:

- (1) Clip mounting (on case), where lead does not overlap heatsink with 0.110" offset
- (2) Clip mounting (on case), where leads do overlap heatsink
- (3) Screw mounting with 4-40 screw, where washer diameter is ≤ 4.9 mm (0.19")
- (4) Pulse test: 300μs pulse width, 1% duty cycle



BYS459-1500, BY5459F-1500, BY5459B-1500

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Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Fig. 1 – Forward Current Derating Curve

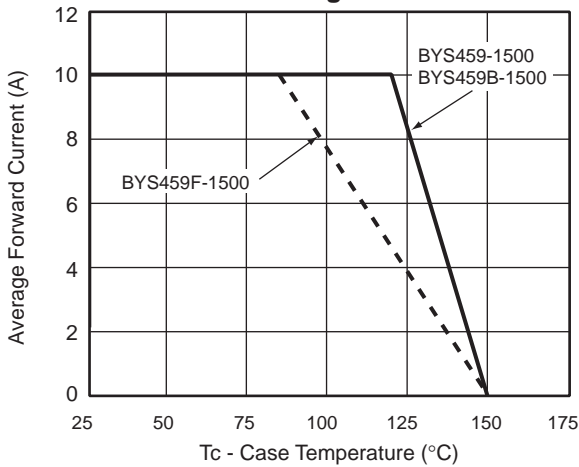


Fig. 2 – Maximum Non-Repetitive Peak Forward Surge Current

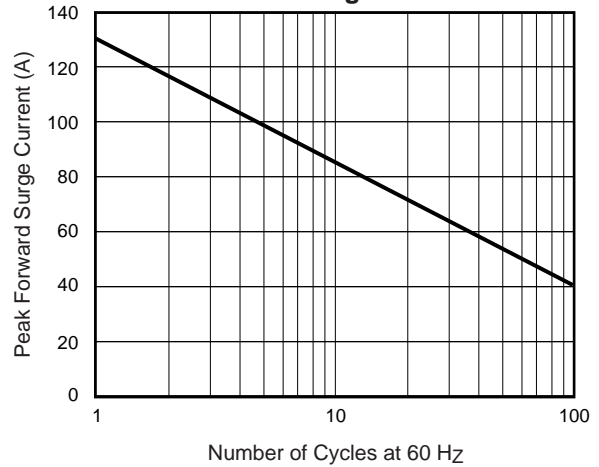


Fig. 3 – Typical Forward Voltage

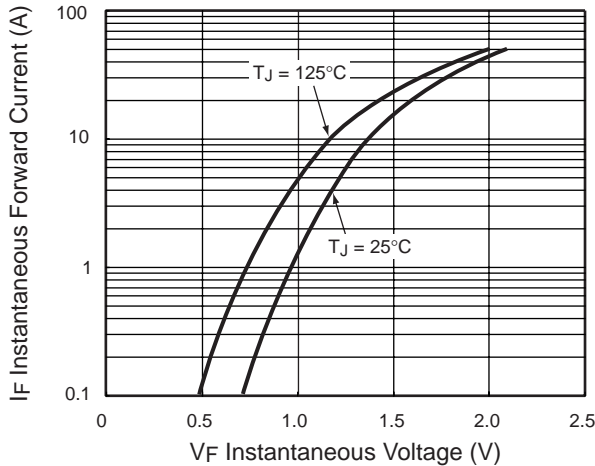


Fig. 4 – Typical Reverse Current

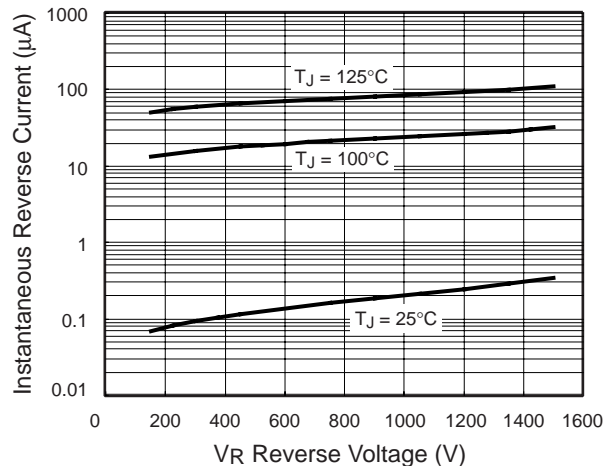


Fig. 5 – Typical Capacitance

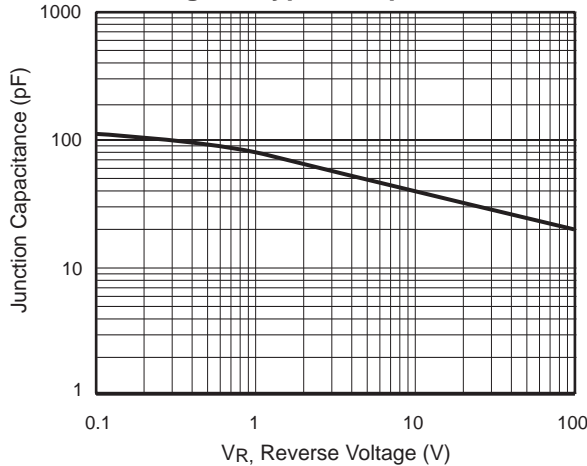


Fig. 6 – Typical Reverse Recovery Time

