



BYW98-200

HIGH EFFICIENCY FAST RECOVERY RECTIFIER DIODES

MAIN PRODUCT CHARACTERISTICS

| | |
|-----------------------|--------|
| I _{F(AV)} | 3A |
| V _{RRM} | 200 V |
| T _{j (max)} | 150 °C |
| V _{F (max)} | 0.85 V |
| t _{rr (max)} | 35 ns |

FEATURES AND BENEFITS

- VERY LOW CONDUCTION LOSSES
- NEGLIGIBLE SWITCHING LOSSES
- LOW FORWARD AND REVERSE RECOVERY TIMES

DESCRIPTION

Low voltage drop and rectifier suited for switching mode base drive and transistor circuits.



DO-201AD
(Plastic)

ABSOLUTE RATINGS (limiting values)

| Symbol | Parameter | Value | Unit |
|---------------------|--|---------------|------|
| V _{RRM} | Repetitive peak reverse voltage | 200 | V |
| I _{FRM} | Repetitive peak forward current * | 110 | A |
| I _{F (AV)} | Average forward current* | 3 | A |
| I _{FSM} | Surge non repetitive forward current | 70 | A |
| T _{stg} | Storage temperature range | - 65 to + 150 | °C |
| T _j | Maximum operating junction temperature | 150 | °C |
| T _L | Maximum lead temperature for soldering during 10s at 4mm from case | 230 | °C |

* On infinite heatsink with 10mm lead length.

BYW98-200

THERMAL RESISTANCE

| Symbol | Parameter | Value | Unit |
|-----------------------|--------------------|-------|------|
| R _{th} (j-a) | Junction-ambient * | 25 | °C/W |

* On infinite heatsink with 10mm lead length.

STATIC ELECTRICAL CHARACTERISTICS

| Symbol | Parameter | Test Conditions | | Min. | Typ. | Max. | Unit |
|-------------------|-------------------------|------------------------|-----------------------------------|------|------|------|------|
| I _R * | Reverse leakage current | T _j = 25°C | V _R = V _{RRM} | | | 10 | µA |
| | | T _j = 100°C | | | | 0.5 | mA |
| V _F ** | Forward voltage drop | T _j = 25°C | I _F = 9A | | | 1.2 | V |
| | | T _j = 100°C | I _F = 3A | | 0.78 | 0.85 | |

Pulse test : * tp = 5 ms, δ < 2 %

** tp = 380 µs, δ < 2 %

To evaluate the conduction losses use the following equations:

$$P = 0.75 \times I_F(AV) + 0.04 I_F^2(RMS)$$

RECOVERY CHARACTERISTICS

| Symbol | Test Conditions | | | Min. | Typ. | Max. | Unit |
|-----------------|---|---------------------|--------------------------------|------|------|------|------|
| t _{rr} | T _j = 25°C V _R = 30V | I _F = 1A | dI _F /dt = - 50A/µs | | | 35 | ns |
| Q _{rr} | T _j = 25°C V _R ≤ 30V | I _F = 3A | dI _F /dt = - 20A/µs | | 15 | | nC |
| t _{fr} | T _j = 25°C Measured at 1.1 x V _F max | I _F = 3A | dI _F /dt = - 50A/µs | | 20 | | ns |
| V _{FP} | T _j = 25°C | I _F = 3A | dI _F /dt = - 50A/µs | | 5 | | V |

Fig. 1: Average forward power dissipation versus average forward current.

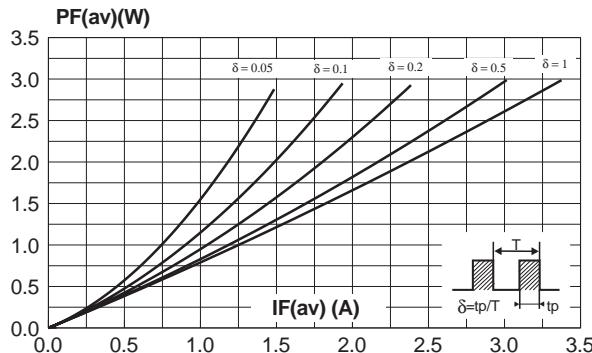


Fig. 2: Average forward current versus ambient temperature ($\delta=0.5$).

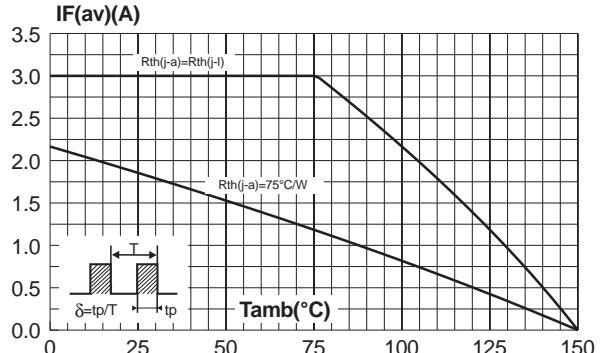


Fig. 3: Thermal resistance versus lead length.

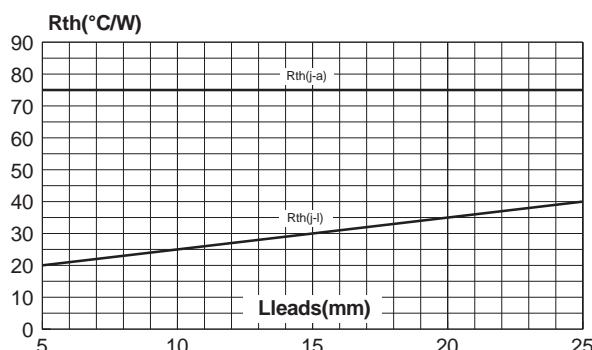


Fig. 4: Variation of thermal impedance junction to ambient versus pulse duration (recommended pad layout, epoxy FR4, $e(\text{Cu})=35\mu\text{m}$).

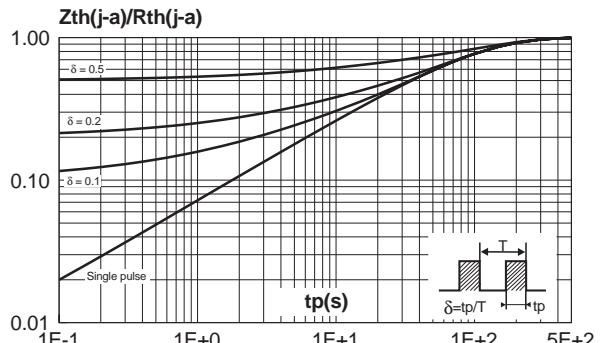


Fig. 5: Forward voltage drop versus forward current (maximum values).

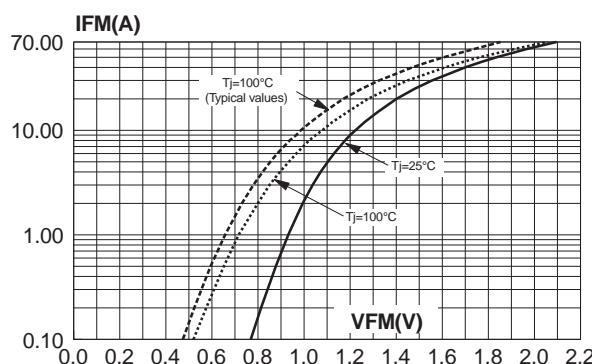
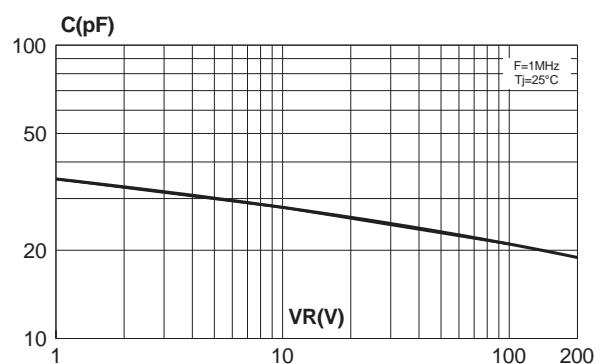


Fig. 6: Junction capacitance versus reverse voltage applied (typical values).



BYW98-200

Fig. 7: Reverse recovery time versus dI_F/dt .

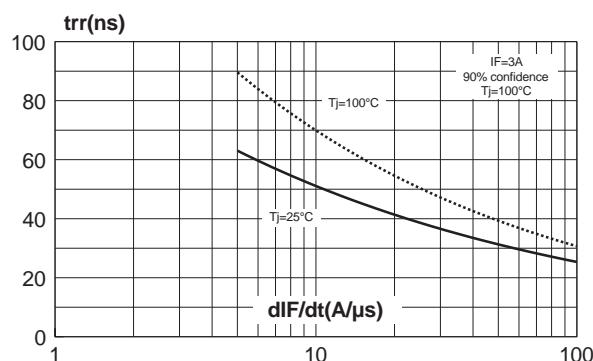


Fig. 8: Peak reverse recovery current versus dI_F/dt .

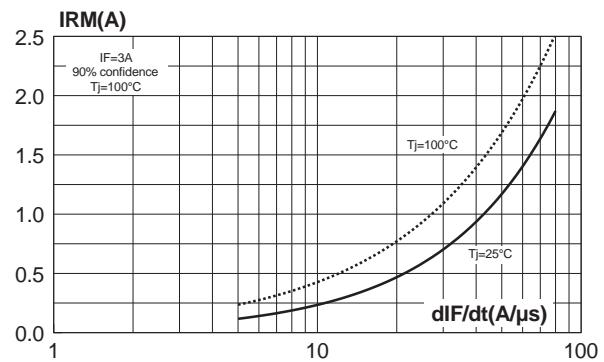
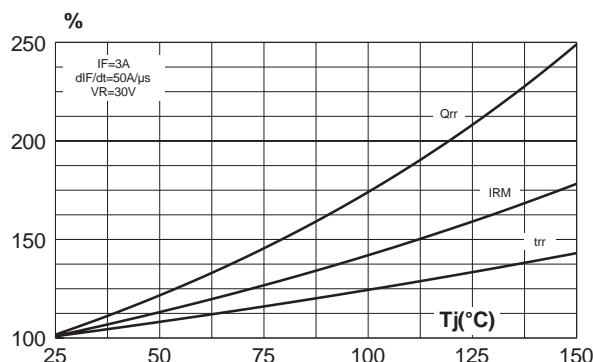
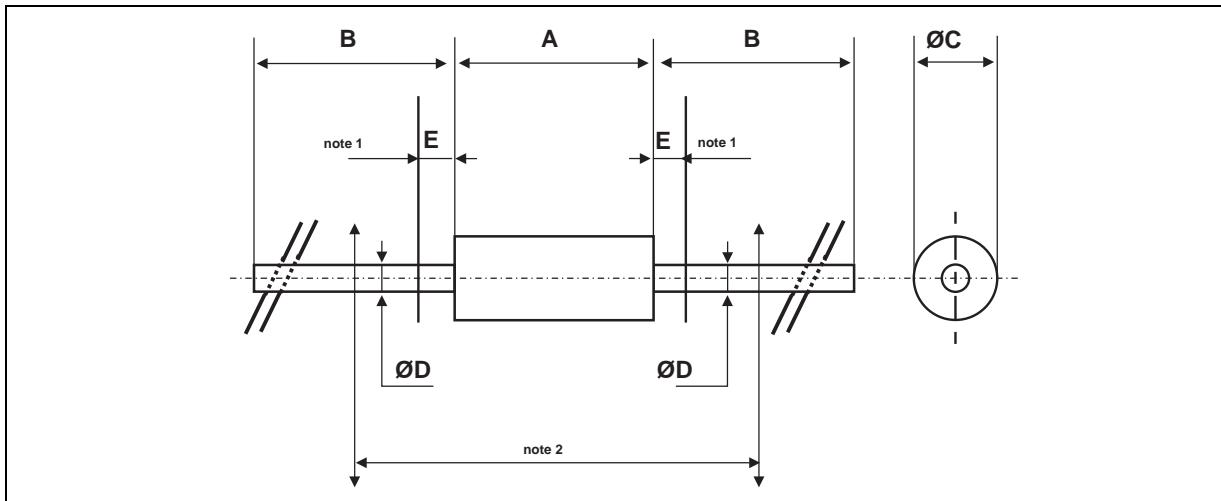


Fig. 9: Dynamic parameters versus junction temperature.



PACKAGE MECHANICAL DATA

DO-201AD



| REF. | DIMENSIONS | | | | NOTES | |
|-----------------|-------------|------|--------|-------|--|--|
| | Millimeters | | Inches | | | |
| | Min. | Max. | Min. | Max. | | |
| A | | 9.50 | | 0.374 | 1 - The lead diameter $\varnothing D$ is not controlled over zone E | |
| B | 25.40 | | 1.000 | | 2 - The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59"(15 mm) | |
| $\varnothing C$ | | 5.30 | | 0.209 | | |
| $\varnothing D$ | | 1.30 | | 0.051 | | |
| E | | 1.25 | | 0.049 | | |

| Ordering code | Marking | Package | Weight | Base qty | Delivery mode |
|---------------|-----------|----------|---------|----------|---------------|
| BYW98-200 | BYW98-200 | DO-201AD | 1.16 g. | 600 | Box |
| BYW98-200RL | BYW98-200 | DO-201AD | 1.16 g. | 1900 | Tape and reel |

■ White band indicates cathode

■ Epoxy meets UL94,V0

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