

## THERMAL PARAMETERS

| Symbol                | Parameter         | Value | Unit |
|-----------------------|-------------------|-------|------|
| R <sub>th</sub> (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 <sub>R</sub> *  | Reverse leakage current | T <sub>j</sub> = 25°C  | V <sub>R</sub> = V <sub>RRM</sub> |      |      | 10   | μA   |
|                   |                         | T <sub>j</sub> = 100°C |                                   |      |      | 0.5  | mA   |
| V <sub>F</sub> ** | Forward voltage drop    | T <sub>j</sub> = 25°C  | I <sub>F</sub> = 9A               |      |      | 1.2  | V    |
|                   |                         | T <sub>j</sub> = 100°C | I <sub>F</sub> = 3A               |      | 0.78 | 0.85 |      |

Pulse test : \* t<sub>p</sub> = 5 ms, δ < 2 %

\*\* t<sub>p</sub> = 380 μs, δ < 2 %

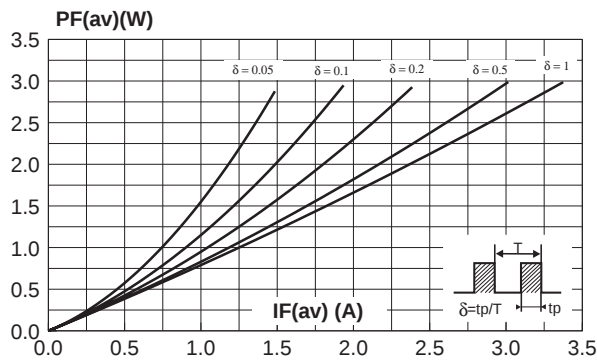
To evaluate the maximum conduction losses use the following equations:

$$P = 0.75 \times I_{F(AV)} + 0.04 I_F^2 (RMS)$$

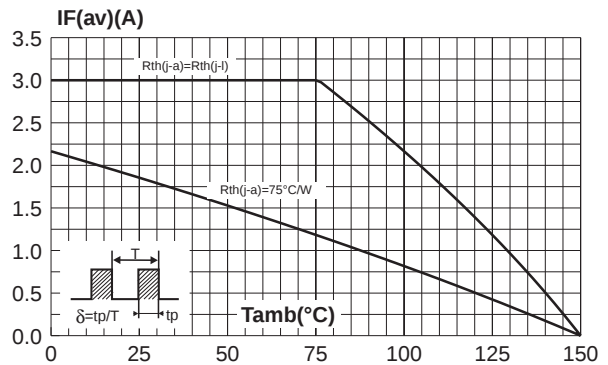
## RECOVERY CHARACTERISTICS

| Symbol          | Test conditions                                                                              |                       | Min. | Typ. | Max. | Unit |
|-----------------|----------------------------------------------------------------------------------------------|-----------------------|------|------|------|------|
| t <sub>rr</sub> | I <sub>F</sub> = 1A   dI <sub>F</sub> /dt = - 50A/μs   V <sub>R</sub> = 30V                  | T <sub>j</sub> = 25°C |      |      | 35   | ns   |
| Q <sub>rr</sub> | I <sub>F</sub> = 3A   dI <sub>F</sub> /dt = - 20A/μs   V <sub>R</sub> ≤ 30V                  | T <sub>j</sub> = 25°C |      | 15   |      | nC   |
| t <sub>fr</sub> | I <sub>F</sub> = 3A   dI <sub>F</sub> /dt = - 50A/μs<br>Measured at 1.1 x V <sub>F</sub> max | T <sub>j</sub> = 25°C |      | 20   |      | ns   |
| V <sub>FP</sub> | I <sub>F</sub> = 3A   dI <sub>F</sub> /dt = - 50A/μs                                         | T <sub>j</sub> = 25°C |      | 5    |      | V    |

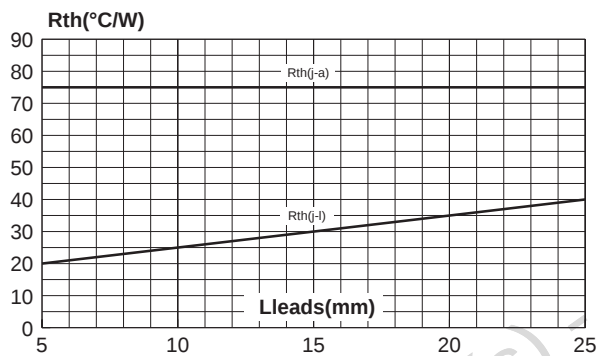
**Fig. 1:** Average forward power dissipation versus average forward current.



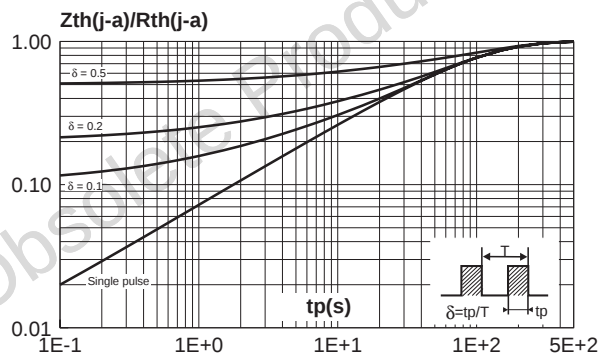
**Fig. 2:** Average forward current versus ambient temperature ( $\delta=0.5$ ).



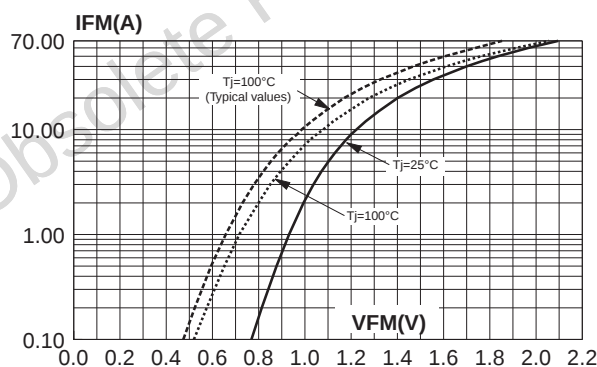
**Fig. 3:** Thermal resistance versus lead length.



**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).

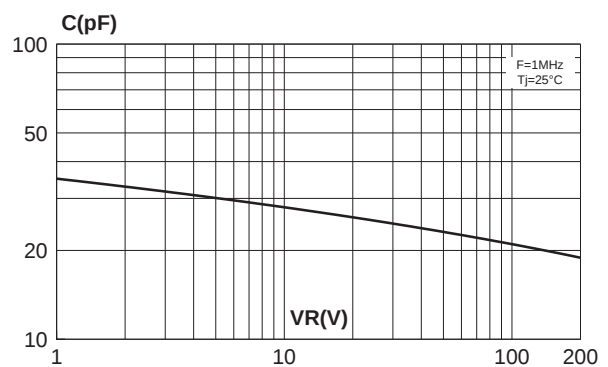


Fig. 7: Reverse recovery time versus  $dI_F/dt$ .

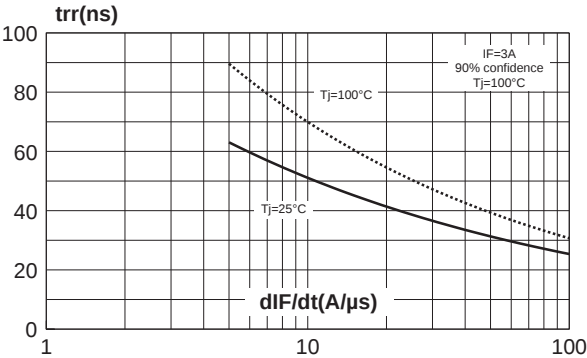


Fig. 8: Peak reverse recovery current versus  $dI_F/dt$ .

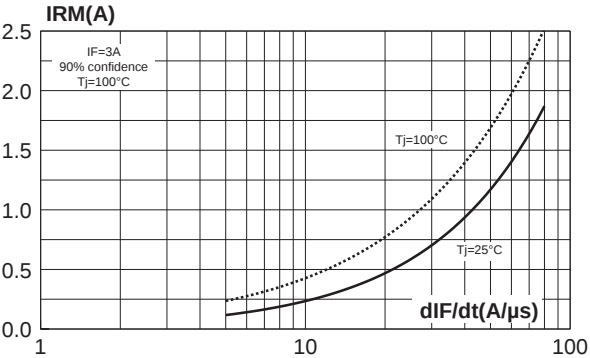
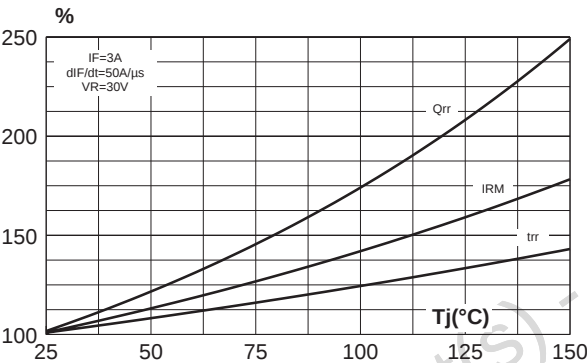
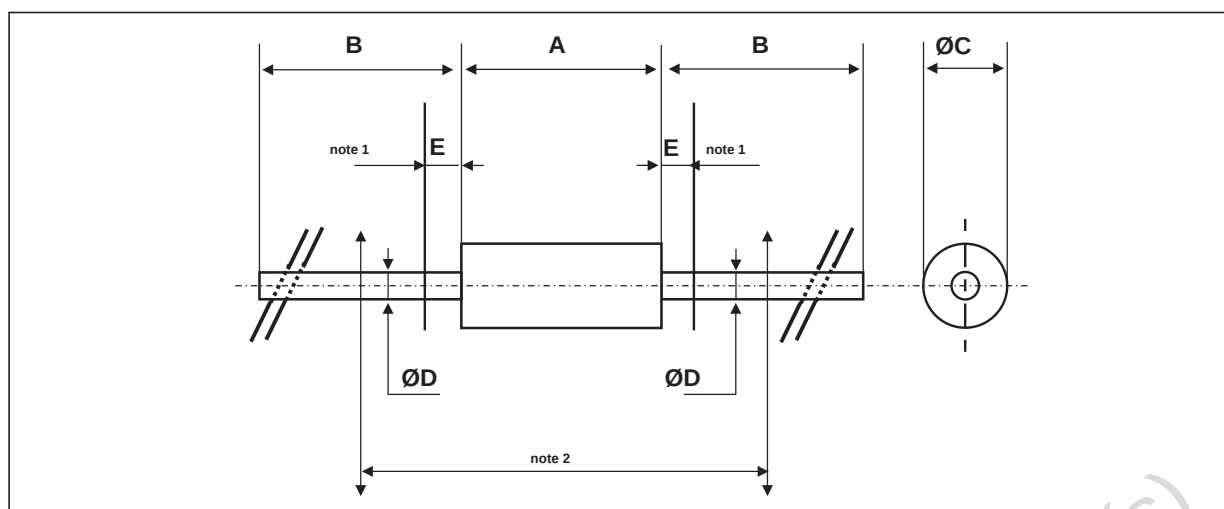


Fig. 9: Dynamic parameters versus junction temperature.



## 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<br><br>2 - The minimum axial length within which the device may be placed with its leads bent at right angles is 0.59"(15 mm) |
| B               | 25.40       |      | 1.000  |       |                                                                                                                                                                                                   |
| $\varnothing C$ |             | 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      | Ammopack      |
| 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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