

# FD1500AV-90

HIGH POWER, HIGH FREQUENCY,  
PRESS PACK TYPE

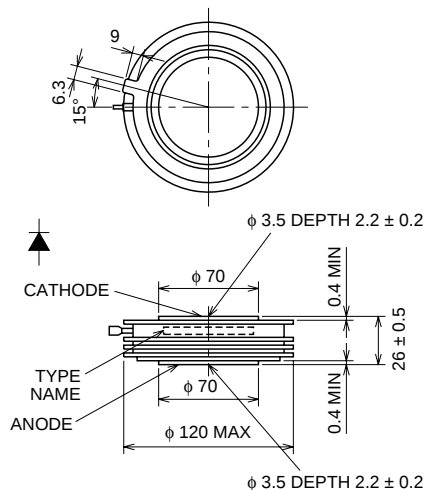
## FD1500AV-90



- $I_F(AV)$  Average forward current ..... 1500A
- $V_{RRM}$  Repetitive peak reverse voltage ..... 3500 ~ 4500V
- $Q_{RR}$  Reverse recovery charge ..... 2000 $\mu$ C
- Press pack type

## OUTLINE DRAWING

Dimensions in mm



## APPLICATION

High-power inverters, Fly-wheel diodes in DC choppers, Power supplies as high frequency rectifiers

## MAXIMUM RATINGS

| Symbol    | Parameter                           | Voltage class |      |      | Unit |
|-----------|-------------------------------------|---------------|------|------|------|
|           |                                     | 70            | 80   | 90   |      |
| $V_{RRM}$ | Repetitive peak reverse voltage     | 3500          | 4000 | 4500 | V    |
| $V_{RSM}$ | Non-repetitive peak reverse voltage | 3500          | 4000 | 4500 | V    |
| $V_R(DC)$ | DC reverse voltage                  | 2800          | 3200 | 3600 | V    |

| Symbol     | Parameter                         | Conditions                                                                    | Ratings           | Unit                 |
|------------|-----------------------------------|-------------------------------------------------------------------------------|-------------------|----------------------|
| $I_F(RMS)$ | RMS forward current               |                                                                               | 2350              | A                    |
| $I_F(AV)$  | Average forward current           | $f = 60\text{Hz}$ , sine wave $\theta = 180^\circ$ , $T_f = 65^\circ\text{C}$ | 1500              | A                    |
| $I_{FSM}$  | Surge forward current             | One half cycle at 60Hz, non-repetitive                                        | 24                | kA                   |
| $I_t^2$    | Current-squared, time integration | One cycle at 60Hz                                                             | $2.4 \times 10^6$ | $\text{A}^2\text{s}$ |
| $T_j$      | Junction temperature              |                                                                               | $-40 \sim +125$   | $^\circ\text{C}$     |
| $T_{stg}$  | Storage temperature               |                                                                               | $-40 \sim +150$   | $^\circ\text{C}$     |
| —          | Mounting force required           | Recommended value 49                                                          | 44.1 ~ 58.8       | kN                   |
| —          | Weight                            | Standard value                                                                | 1270              | g                    |

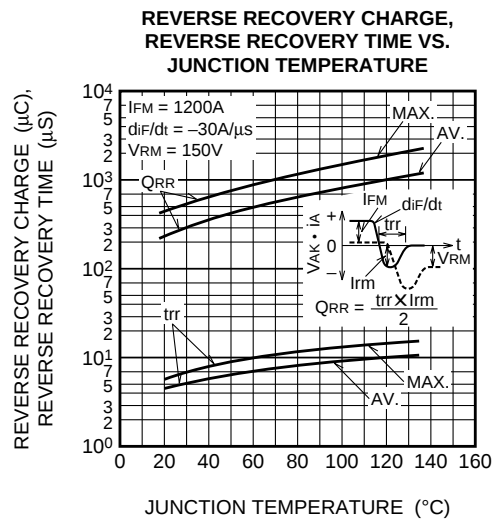
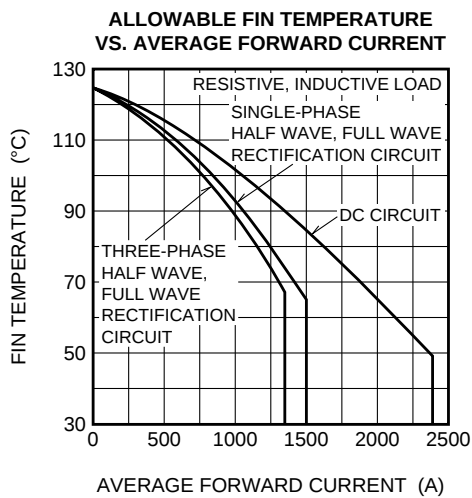
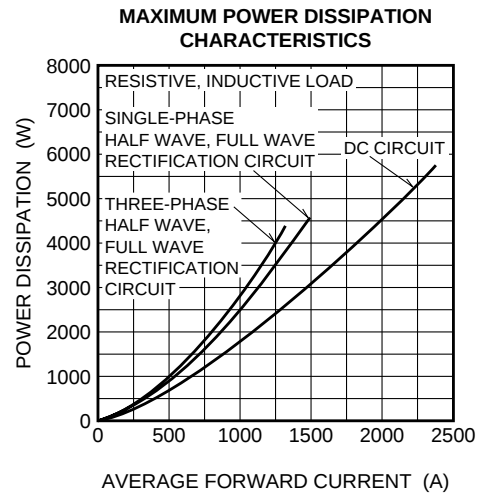
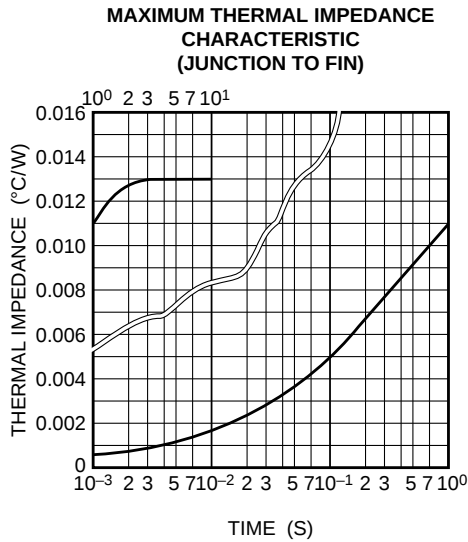
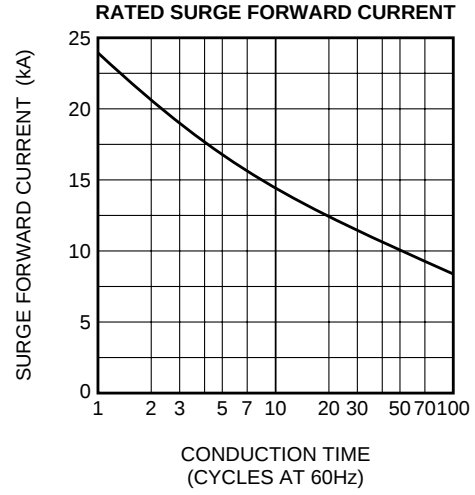
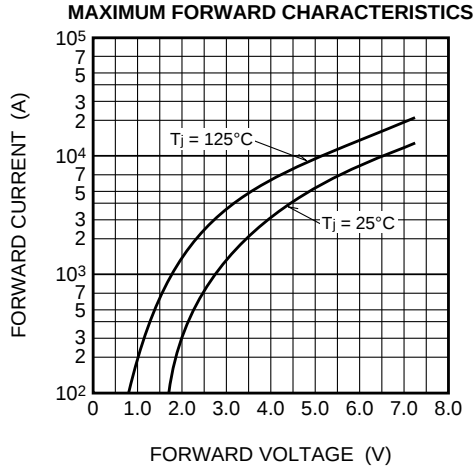
## ELECTRICAL CHARACTERISTICS

| Symbol        | Parameter                       | Test conditions                                                                                               | Limits |     |       | Unit                      |
|---------------|---------------------------------|---------------------------------------------------------------------------------------------------------------|--------|-----|-------|---------------------------|
|               |                                 |                                                                                                               | Min    | Typ | Max   |                           |
| $I_{RRM}$     | Repetitive peak reverse current | $T_j = 125^\circ\text{C}$ , $V_{RRM}$ Applied                                                                 | —      | —   | 150   | mA                        |
| $V_{FM}$      | Forward voltage                 | $T_j = 125^\circ\text{C}$ , $I_{FM} = 3400\text{A}$ , Instantaneous measurement                               | —      | —   | 3.0   | V                         |
| $Q_{RR}$      | Reverse recovery charge         | $I_{FM} = 1200\text{A}$ , $di/dt = -30\text{A}/\mu\text{s}$ , $V_R = 150\text{V}$ , $T_j = 125^\circ\text{C}$ | —      | —   | 2000  | $\mu\text{C}$             |
| $R_{th(j-f)}$ | Thermal resistance              | Junction to fin                                                                                               | —      | —   | 0.013 | $^\circ\text{C}/\text{W}$ |

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## PERFORMANCE CURVES



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