

## BYV27-600

### SINTERED GLASS JUNCTION ULTRAFAST AVALANCHE RECTIFIER

VOLTAGE: 600V

CURRENT: 1.6A



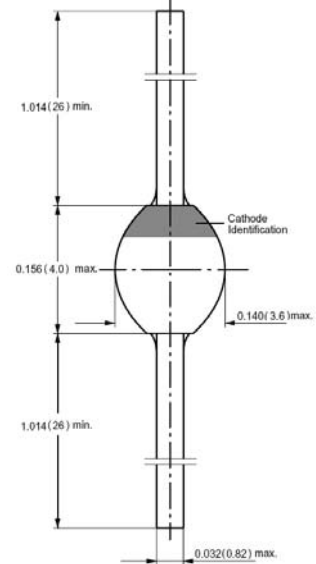
#### FEATURE

Glass passivated  
High maximum operating temperature  
Low leakage current  
Excellent stability  
Guaranteed avalanche energy absorption capability

#### MECHANICAL DATA

Case: SOD-57 sintered glass case  
Terminal: Plated axial leads solderable per  
MIL-STD 750, method 2026  
Polarity: color band denotes cathode end  
Mounting position: any

#### SOD-57



Dimensions in inches and (millimeters)

#### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(single-phase, half-wave, 60HZ, resistive or inductive load rating at 25°C, unless otherwise stated)

|                                                                                                               | SYMBOL         | BYV27-600    | units            |
|---------------------------------------------------------------------------------------------------------------|----------------|--------------|------------------|
| Maximum Recurrent Peak Reverse Voltage                                                                        | $V_{RRM}$      | 600          | V                |
| Maximum RMS Voltage                                                                                           | $V_{RMS}$      | 420          | V                |
| Maximum DC blocking Voltage                                                                                   | $V_{DC}$       | 600          | V                |
| Reverse avalanche breakdown voltage<br>at $I_R = 0.1$ mA                                                      | $V_{(BR)R}$    | 675min       | V                |
| Maximum Average Forward Rectified Current 3/8"<br>lead length at $T_{tp} = 85^\circ\text{C}$                  | $I_{FAV}$      | 1.6          | A                |
| Non-repetitive Peak Forward Current at $t=10\text{ms}$ half<br>sine wave                                      | $I_{FSM}$      | 40           | A                |
| Maximum Forward Voltage at Forward Current 2.0A                                                               | $V_F$          | 1.25         | V                |
| Non-repetitive peak reverse avalanche energy<br>(Note 1)                                                      | $E_{RSM}$      | 20           | mJ               |
| Maximum DC Reverse Current $T_a = 25^\circ\text{C}$<br>at rated DC blocking voltage $T_a = 165^\circ\text{C}$ | $I_R$          | 5.0<br>150.0 | $\mu\text{A}$    |
| Maximum Reverse Recovery Time (Note 2)                                                                        | $T_{rr}$       | 50           | nS               |
| Diode Capacitance (Note 3)                                                                                    | $C_d$          | 65           | pF               |
| Typical Thermal Resistance (Note 4)                                                                           | $R_{th(ja)}$   | 100          | K/W              |
| Storage and Operating Junction Temperature                                                                    | $T_{stg}, T_j$ | -65 to +175  | $^\circ\text{C}$ |

Note:

1.  $R=400\text{mA}$ ;  $T_j=T_{jmax}$  prior to surge; inductive load switched off
2. Reverse Recovery Condition  $I_f=0.5\text{A}$ ,  $I_r=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$
3. Measured at 1.0 MHz and applied reverse voltage of 0Vdc
4. Device mounted on an epoxy-glass printed-circuit board, 1.5mm thick; thickness of Cu-layer  $\geq 40 \mu\text{m}$

# RATINGS AND CHARACTERISTIC CURVES BYV27-600

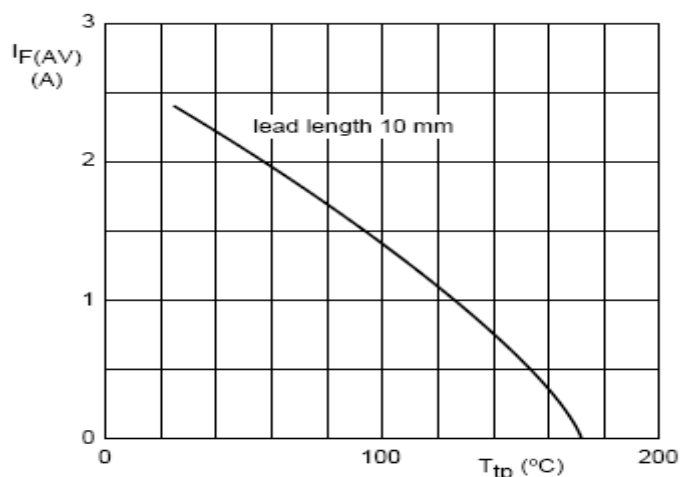


Fig. 1 Maximum permissible average forward current as a function of tie-point temperature (including losses due to reverse leakage).

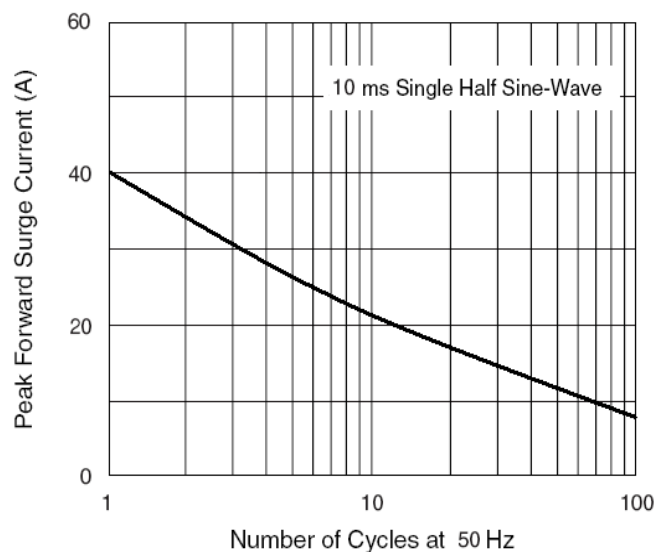


Fig. 2 Maximum non-repetitive peak forward surge current

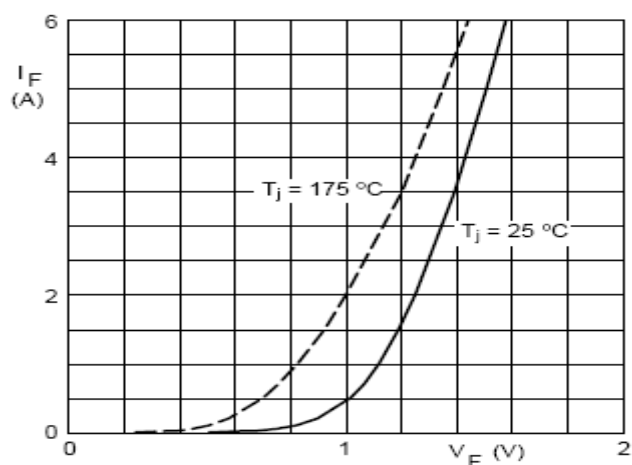


Fig. 3 Forward current as a function of forward voltage; maximum values.

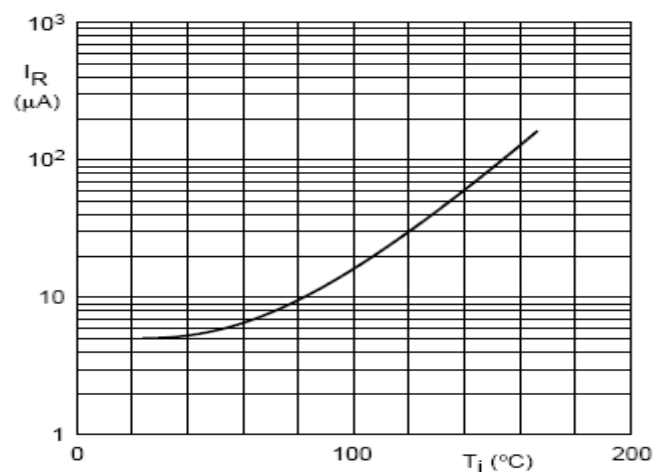


Fig. 4 Reverse current as a function of junction temperature; maximum values.

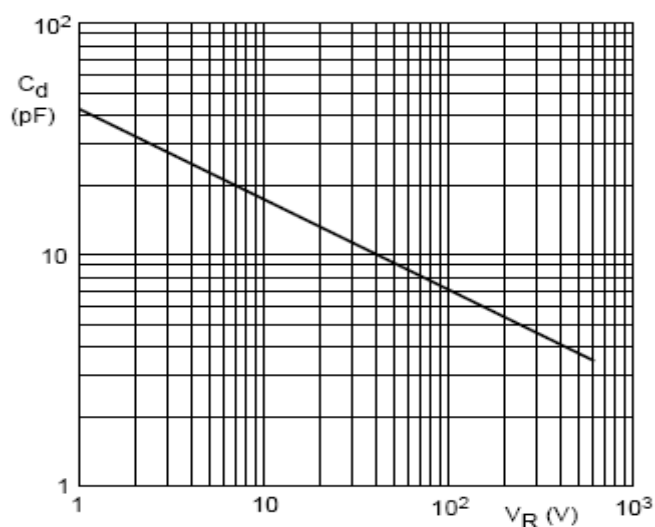


Fig. 5 Diode capacitance as a function of reverse voltage; typical values.

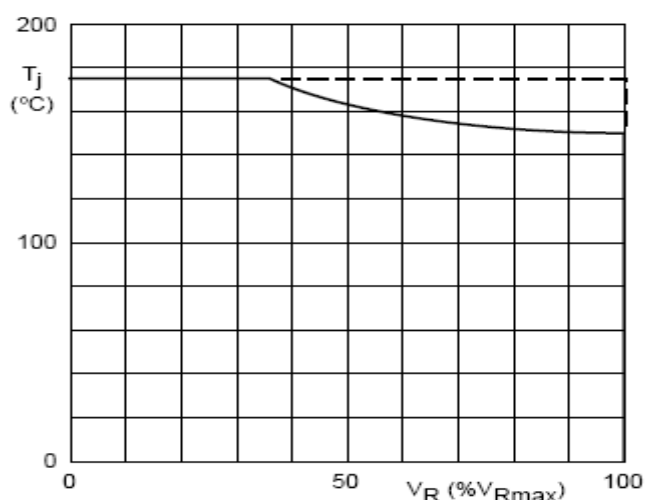


Fig. 6 Maximum permissible junction temperature as a function of maximum reverse voltage percentage.