



# SVT12120U

## EXTREME LOW VF SCHOTTKY BARRIER RECTIFIER

**Voltage**

**120 V**

**Current**

**12 A**

**TO-277**

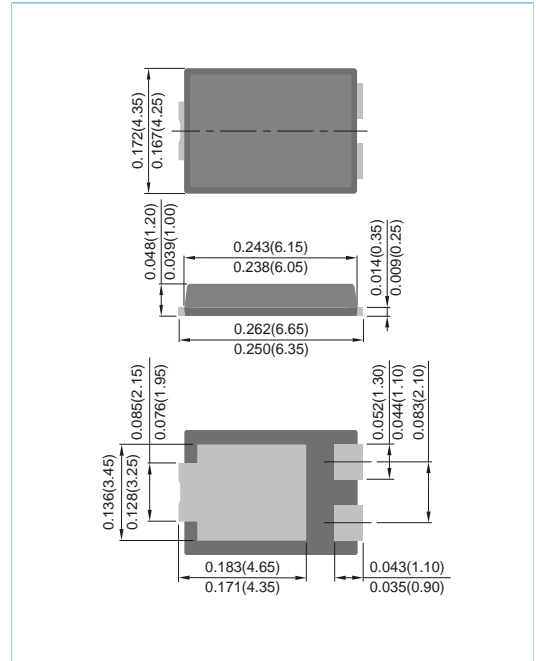
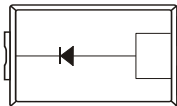
Unit : inch(mm)

### Features

- Ideal for automated placement
- Extreme low forward voltage drop, low power loss
- High efficiency operation
- Low thermal resistance
- Ultra thin profile package for space constrained utilization
- Easy pick and place package suitable for automated handling
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### Mechanical Data

- Case: TO-277 package
- Terminals: solder plated, solderable per MIL-STD-750, Method 2026
- Weight: 0.00379 ounces, 0.1073 grams.
- Marking: Part number



### Maximum Ratings And Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

| PARAMETER   | SYMBOL                   | LIMIT       | UNIT                 |
|---|--------------------------|-------------|----------------------|
| Maximum repetitive peak reverse voltage   | $V_{RRM}$                | 120         | V                    |
| Maximum rms voltage   | $V_{RMS}$                | 84          | V                    |
| Maximum dc blocking voltage   | $V_R$                    | 120         | V                    |
| Maximum average forward rectified current   | $I_{F(AV)}$              | 12          | A                    |
| Peak forward surge current : 8.3ms single half sine-wave superimposed on rated load | $I_{FSM}$                | 200         | A                    |
| Typical thermal resistance  | (Note 1) $R_{\theta JA}$ | 110         | $^{\circ}\text{C/W}$ |
|   | (Note 2) $R_{\theta JC}$ | 3           |                      |
| Operating junction temperature range  | $T_J$                    | -55 to +150 | $^{\circ}\text{C}$   |
| Storage temperature range   | $T_{STG}$                | -55 to +150 | $^{\circ}\text{C}$   |

- Note : 1. Mounted on a FR4 PCB, single-sided copper, mini pad.  
2. Mounted on a 10cm\*10cm\*1mm copper pad area



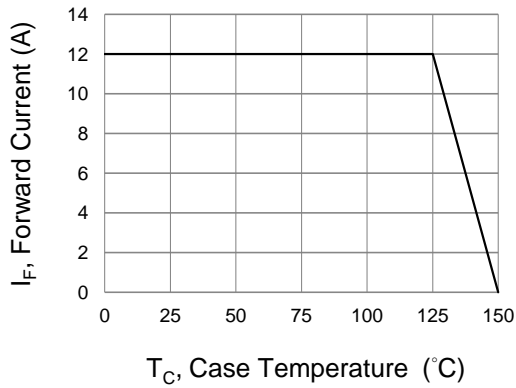
## SVT12120U

Electrical Characteristics ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

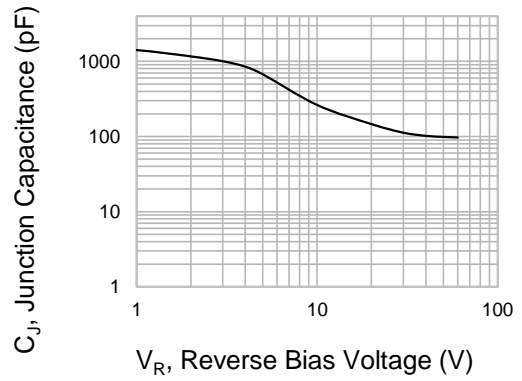
| PARAMETER                     | SYMBOL   | TEST CONDITION     |                           | MIN. | TYP. | MAX. | UNITS         |
|-------------------------------|----------|--------------------|---------------------------|------|------|------|---------------|
| Breakdown voltage             | $V_{BR}$ | $I_R=0.5\text{mA}$ | $T_J=25^{\circ}\text{C}$  | 120  | -    | -    | V             |
| Instantaneous forward voltage | $V_F$    | $I_F=1\text{A}$    | $T_J=25^{\circ}\text{C}$  | -    | 0.47 | -    | V             |
|                               |          | $I_F=5\text{A}$    |                           | -    | 0.64 | -    |               |
|                               |          | $I_F=12\text{A}$   |                           | -    | 0.74 | 0.79 |               |
|                               |          | $I_F=1\text{A}$    | $T_J=125^{\circ}\text{C}$ | -    | 0.37 | -    | V             |
| $I_F=5\text{A}$               | -        | 0.52               |                           | -    |      |      |               |
| Reverse current               | $I_R$    | $V_R=96\text{V}$   | $T_J=25^{\circ}\text{C}$  | -    | 3    | -    | $\mu\text{A}$ |
|                               |          | $V_R=120\text{V}$  | $T_J=25^{\circ}\text{C}$  | -    | -    | 25   | $\mu\text{A}$ |
|                               |          |                    | $T_J=125^{\circ}\text{C}$ | -    | 5    | -    | mA            |



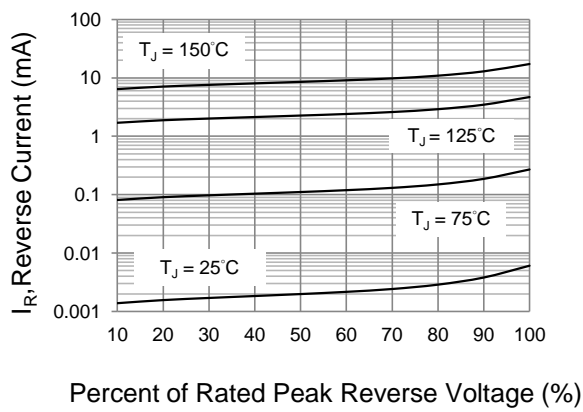
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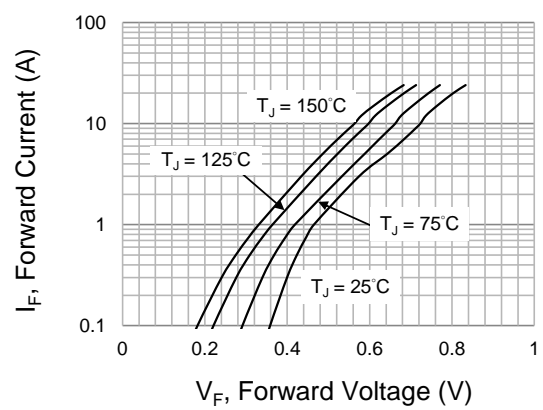
**Fig.1 Forward Current Derating Curve**



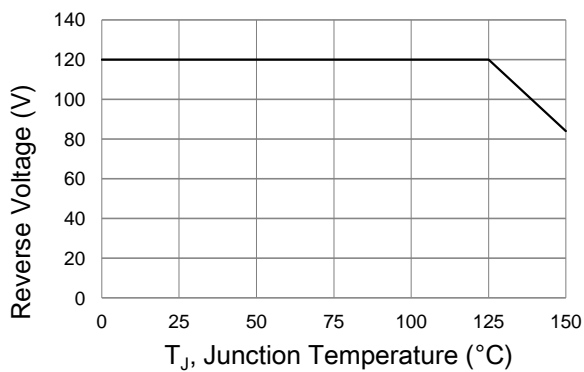
**Fig.2 Typical Junction Capacitance**



**Fig.3 Typical Reverse Characteristics**



**Fig.4 Typical Forward Characteristics**

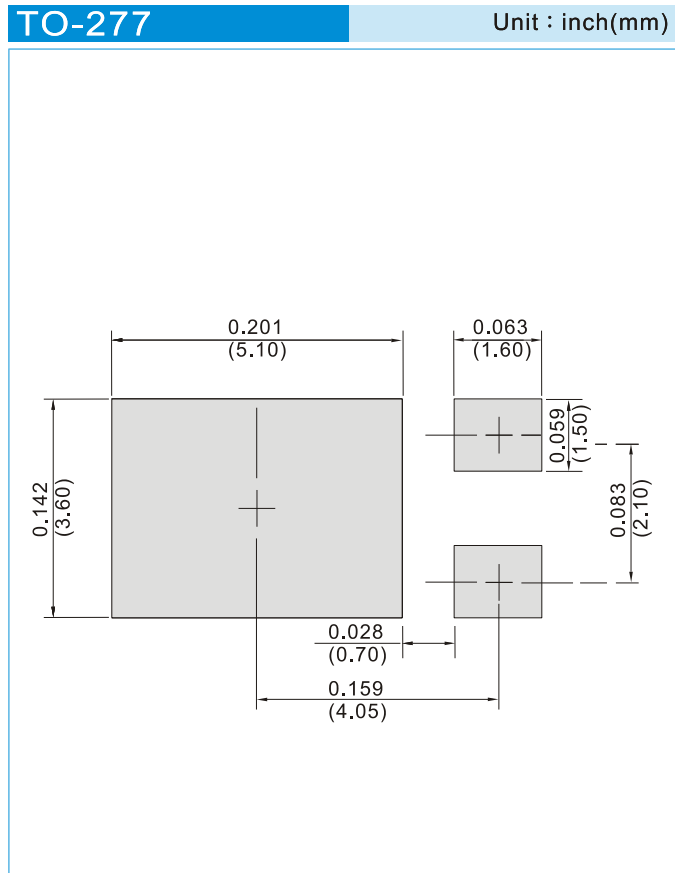


**Fig.5 Operating Temperature Derating Curve**



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R – 5K per 13" plastic Reel



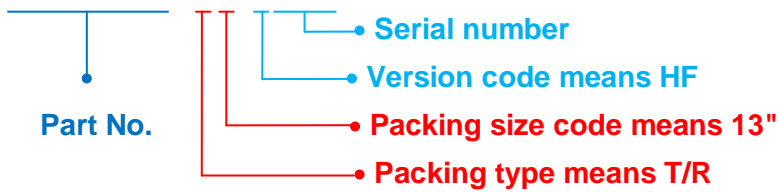
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Part No\_packing code\_Version

SVT12120U\_R2\_00001

For example :

RB500V-40\_R2\_00001



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> -5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | A                    | N/A                              | 0                    | HF                        | 0                    | serial number                         |
| Tape and Reel (T/R)                  | R                    | 7"                               | 1                    | RoHS                      | 1                    | serial number                         |
| Bulk Packing (B/P)                   | B                    | 13"                              | 2                    |                           |                      |                                       |
| Tube Packing (T/P)                   | T                    | 26mm                             | X                    |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | S                    | 52mm                             | Y                    |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | L                    | PANASERT T/B CATHODE UP (PBCU)   | U                    |                           |                      |                                       |
| FORMING                              | F                    | PANASERT T/B CATHODE DOWN (PBCD) | D                    |                           |                      |                                       |



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