

# TVS Flat: more power in thinner packages at higher temperatures



## TVS Flat series for industrial-grade applications

ST's transient voltage suppressors (TVS) are made to resist the stress levels specified in standards such as IEC 61000-4-x to meet all application requirements. Able to withstand 10/1000  $\mu$ s transient voltage surges and with power capability at 175 °C, they fit tough environments thanks to low power derating at high temperature. Manufactured on ST's upgraded production lines using robust and well-known silicon die leads to improved reliability for your applications.

### KEY FEATURES

- Increased power density
- Lower cost per watt ratio
- Footprint compatible with SMA, SMB
- $T_j$  (max.) = 175 °C
- 1 mm thickness

### KEY BENEFITS

- Thinner applications
- No PCB redesign thanks to backward footprint compatibility with standard SMD package
- 600 W protection can be ensured with SMA Flat package instead of SMB package
- Automatic visual inspection compatible

### KEY APPLICATIONS

- Motor control
  - Robots, drones, power tools, and e-bikes
- Telecommunications
  - Power line protection circuits
- SMPS
  - DC line, MOSFET and IGBT protection circuits
- Consumer
  - LNB circuits and power supplies

## DIFFERENTIATION AND IMPROVEMENTS

### Made for slim applications

SMA Flat package is rated 1 mm thick while SMA is about 2 mm.

### High temperature capability

With a maximum  $T_j$  rating of 175 °C, both series are built to comply with harsh environments.

### Low power derating at high temperature

- SMA4F: up to 200 W at 175°C
- SMA6F: up to 400 W at 175°C

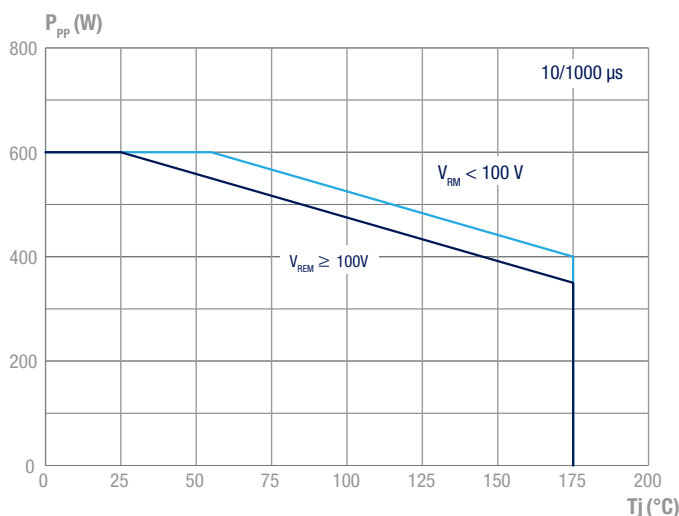
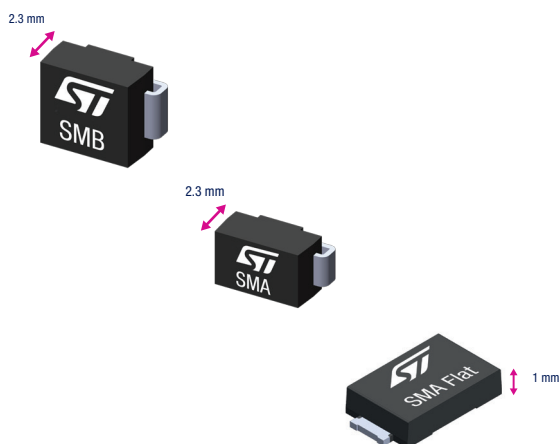
### Increased power / size ratio

- By increasing power capability with SMA6F series : 600 W in SMA Flat instead of SMB

### Low leakage

- Leakage current rated 5 times low than most of our competitors
- $I_R$  specified at 85°C

## MORE POWER IN THINNER PACKAGE



## TVS FLAT RANGE

Industrial grade TVS	Stand of voltage range ( $V_{RM}$ )	Breakdown voltage range ( $V_{BR}$ )	10/1000 $\mu$ s surge capability ( $P_{PP}$ )	8/20 $\mu$ s surge capability ( $P_{PP}$ )	Package
SMA4FxxA	5 V to 33 V	6.8 V to 39 V	400 W	2.5 kW	SMA Flat
SMA6FxxA	5 V to 33 V	6.8 V to 39 V	600 W	4 kW	SMA Flat

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