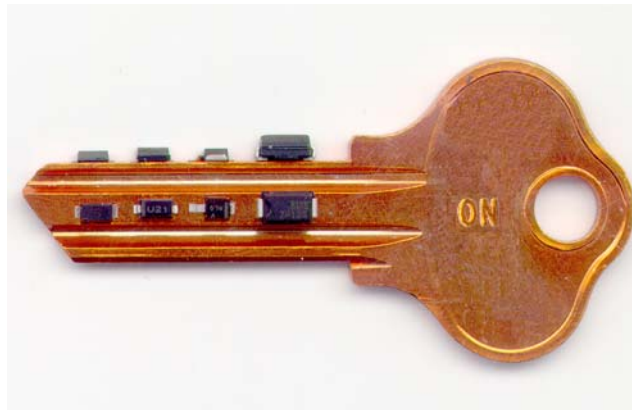


# SOD123FL New Products Launch

**Delivering Low Profile and Superior performance  
in a standard footprint**



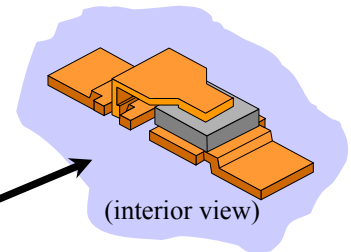
**Standard Components Business Unit  
Small Signal and Power Diode Product Lines**



# SOD123FL Package

The SOD123FL package is ideal for:

- Transient Voltage Suppression (TVS), Zener, and Schottky diodes needed for next generation:
  - power management
  - protection of portable and wireless applications



The SOD123FL package is designed to:

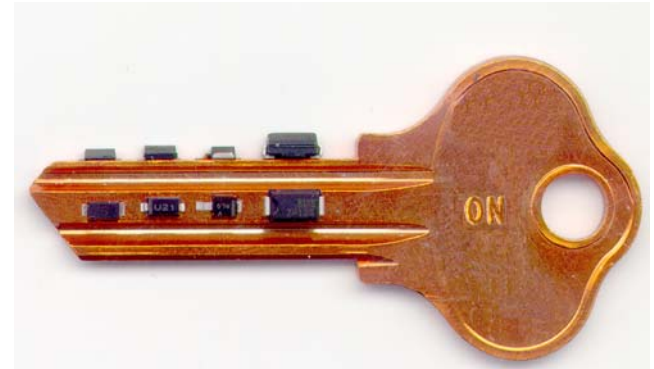
- Fit SOD123 foot print (JEDEC DO219)
- **Package height < 1.0mm**
- **Unique lead frame-clip design provides optimum power efficiency.**
- Improved energy savings with ON Semiconductor's low leakage- current silicon




# SOD123FL- Maximum Power per Board Area!

The SOD123FL Delivers:

- Same footprint as industry standard SOD123 with 45% lower package height
- 32% more power/board area than SOD123
- 14% more power/board area than Powermite<sup>R</sup>
- 86% more power/board area than SMA



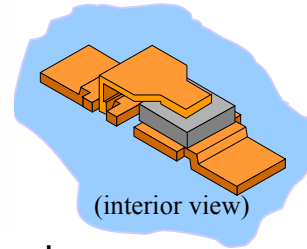
From left to right: SOD123FL, SOD123, Powermite, SMA

Package	Min Footprint			One Inch Pad			Dimensions (max)				
	Power Dissipation per Board Area (W/mm <sup>2</sup> )	P <sub>d(MAX)</sub> <sup>2</sup> (Watts)	R <sub>oja</sub> (C/W)	Power Dissipation per Board Area (W/mm <sup>2</sup> )	P <sub>d(MAX)</sub> <sup>2</sup> (Watts)	R <sub>oja</sub> (C/W)	Board Contact Area (mm <sup>2</sup> )	Length (mm)	Width (mm)	Height (mm)	Board Area (mm <sup>2</sup> )
 SOD123FL											
<b>SOD123FL</b>	<b>0.041</b>	0.308	325	<b>0.162</b>	1.22	82	0.70	3.80	1.80	<b>1.00</b>	7.54
SOD123	0.031	0.233	429	0.065	0.485	206	0.70	3.85	1.80	1.35	7.42
Powermite <sup>R</sup>	0.036	0.375	267	0.128	1.32	76	5.52	3.90	2.05	1.15	10.33
SMA	0.022	0.382	262	0.085	1.49	67	4.96	5.59	2.92	2.87	17.52



# New SOD123FL Package

## SMF5.0 Series Transient Voltage Suppressor



### Description

- Thin profile SOD123FL surface mount power package for portable applications
- The SMFxxBT1 protects voltage sensitive components from high voltage and high energy transients with excellent clamping capability, high surge capability, low zener impedance and fast response time.

### Benefits

- Superior surge capability over wire bond packages. Ideal for TVS applications
- Ideal for portable applications and any situation requiring a low board profile
- Drop-in replacement with superior power
- Full range of clamping voltages
- Excellent protection from ESD and EFT pulses

### Ordering Information

- SMFxxBT1, T3                      3kU, 10kU/reel

### Applications

- GSM handsets and accessories
- Computers
- Printers
- Communication systems
- Protecting data transmission lines

### Features

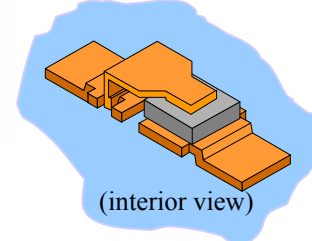
- Internal clip attach design
- 1.0mm max pkg. height, 33% lower than SOD123
- Same foot print as SOD123.
- Stand -off Voltage: 5 – 170 volt
- Meets
  - ESD > 16kV Human body model
  - protection meets IEC61000-4-2 level4
  - IEC61000-4-4 40A.

### More Information Online

See <http://www.onsemi.com>



# MBR120VLSFT1, MBR120LSFT1 MBR120ESFT1 and MBR140SFT1



Low Forward Voltage or Low Leakage **SOD123FL** Schottky Rectifiers

## Description

Low forward voltage drop ( $V_F$ ) or Low Leakage ( $I_R$ ), 1 amp, 20 volt reverse breakdown Schottky rectifiers, and a 1 amp, 40 volt reverse breakdown Schottky rectifier in the space saving, low profile SOD123FL surface mount power package.

## Benefits

- Low conduction losses, reduced battery drain, lower operating temperature
- Longer battery life
- Lower operating temperature
- Meets industry standard for low profile package requirements

## Ordering Information

▪ <b>MBR120VLSFT1, T3</b>	SOD123FL	3kU, 10kU /reel
▪ <b>MBR120LSFT1, T3</b>	SOD123FL	3kU, 10kU /reel
▪ <b>MBR120ESFT1, T3</b>	SOD123FL	3kU, 10kU /reel
▪ <b>MBR140SFT1, T3</b>	SOD123FL	3kU, 10kU /reel

## Applications

- Battery management and protection
- Power supplies
- Portable and wireless systems
- GSM handsets and accessories
- Computers, PDAs
- Printers
- Communications systems

## Features

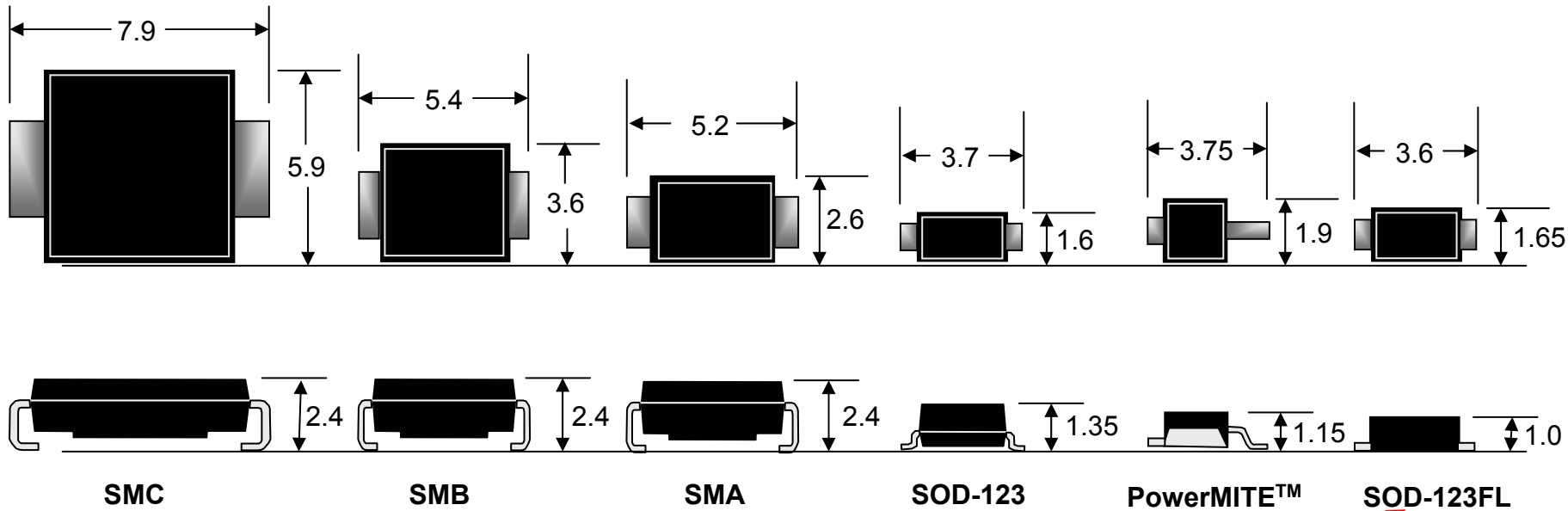
- **VL** version very low  $V_F$  rating of 0.27 V ( $T_J=25^\circ\text{C}$ )
- **L** version low  $V_F$  rating of 0.35 V ( $T_J=25^\circ\text{C}$ )
- **E** version optimized for low leakage current
- 25% Lower thermal resistance than SOD123
- 1.0mm max package height, 45% lower than SOD123 yet maintains same foot print.

## More Information Online

- See <http://www.onsemi.com> for:
  - Datasheets: MBR120LSFT1/D, MBR120VLSFT1/D, MBR120ELSFT1/D, MBR140SFT1/D
  - Samples and budgetary pricing



# SOD123FL Footprint and Profile Comparison



SOD123FL: smallest footprint and lowest profile in it's class



# Products List

TVS Devices In SOD123FL			SCHOTTKY In SOD123FL
<b>SMF5.0AT1</b>	SMF17AT1	SMF54AT1	<b>MBR120LSF</b>
<b>SMF6.0AT1</b>	<b>SMF18AT1</b>	<b>SMF58AT1</b>	<b>MBR120ESF</b>
<b>SMF6.5AT1</b>	SMF20AT1	SMF60AT1	<b>MBR140SF</b>
<b>SMF7.0AT3</b>	SMF22AT1	SMF64AT1	<b>MBR120VLSF</b>
<b>SMF7.5AT1</b>	<b>SMF24AT1</b>	SMF70AT1	
<b>SMF8.0AT1</b>	<b>SMF26AT1</b>	SMF75AT1	
SMF8.5AT1	SMF28AT1	SMF85AT1	
SMF9.0AT1	<b>SMF30AT1</b>	SMF90AT1	
SMF10AT1	<b>SMF33AT1</b>	SMF100AT1	
SMF11AT1	<b>SMF36AT1</b>	SMF110AT1	
<b>SMF12AT1</b>	SMF40AT1	SMF120AT1	
SMF13AT1	SMF43AT1	SMF130AT1	
SMF14AT1	SMF45AT1	SMF150AT1	
SMF15AT1	SMF48AT1	SMF160AT1	
<b>1SMF16BT1</b>	SMF51AT1	<b>SMF170AT1</b>	
<b>SMF16AT1</b>			

## Availability Notes:

1. Devices in **bold**, samples available.
2. Remainder of devices, 4 to 8 weeks after receipt of requests for samples



# SMF Series Package Conversion Guide For Zener TVS

Company	SOD123FL	Powermite	SMA
ON Semi	SMFxxA	1PMTxxA	1SMAxxA
Vishay	SMFxxA		SMAJxxA
Microsemi		UPTxx	SMAJxxA
Philips			PSMAxxA
Diodes			SMAJxxA
STM		SM2TxxA	SMAJxxA
XX = $V_{RWM}$			





# For More Information

- Please visit our website:  
URL: <http://www.onsemi.com>
- For more information Please contact:
  - TVS devices: [Jennifer.Johnson@onsemi.com](mailto:Jennifer.Johnson@onsemi.com)
  - Rectifiers: [George.Dorman@onsemi.com](mailto:George.Dorman@onsemi.com)

