

AEC-Q101 Uni and Bi-Directional 600W Surface-Mount TVS

New 600W TVS in a compact SOD-128 package. Compared with the conventional DO-214AA (SMB) package offering the same 600W PPK rating, the SOD-128 package reduces PCB area by up to 40% and significantly lowers package height. This makes it well suited for PCB space optimization and low-profile enclosure designs.

Designed for compact, high-reliability automotive electronics, this TVS series delivers robust surge protection in a space-saving package—enabling higher power density without increasing board size.

PACKAGE

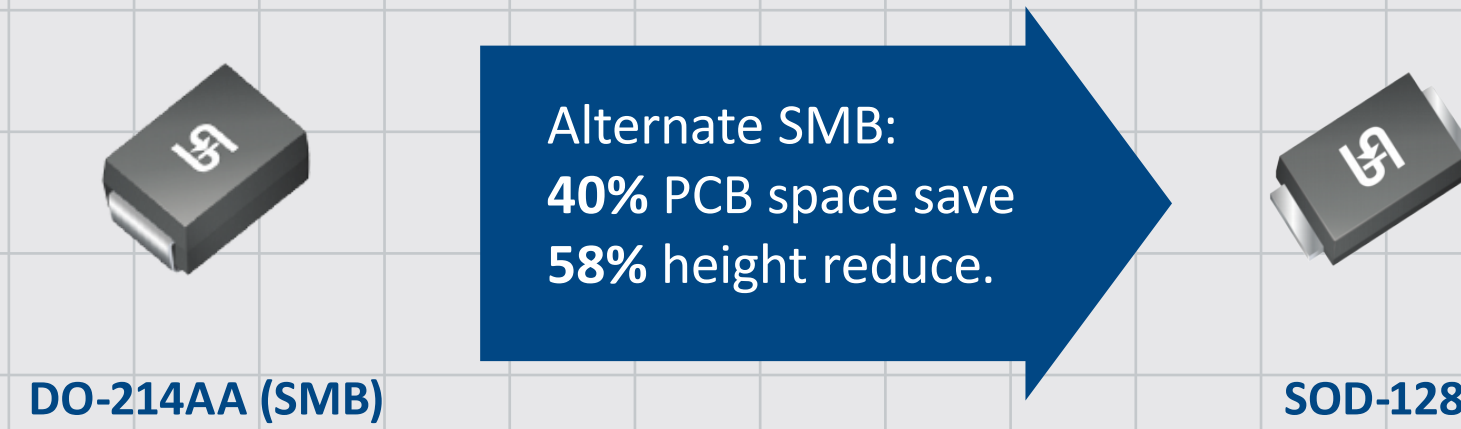


Figure 1: Space- and Height-Saving Advantages of the SOD-128 Package

SPECIFICATION

Configuration: Uni & Bi-directional

Part number with "C" suffix (e.g. SMA6S12CAH) are bi-directional 12V–56V; without "C" (e.g. SMA6S12AH) are uni-directional 12V–60V.

Part number	Breakdown voltage VBR@IT (V)		Test current IT (mA)	Working stand-off voltage VWM (V)	Maximum blocking leakage current IR@VWM (μA)	Maximum peak impulse current IPPM (A) tp =10/1000 μs	Maximum clamping voltage VC@IPPM (V)
	Typ.	Max.					
SMA6S12CAH	13.4	14.8	1	12	1	30.8	19.5
SMA6S15CAH	16.8	18.5		15		24.6	24.4
SMA6S18CAH	20.1	22.2		18		20.5	29.2
SMA6S20CAH	22.4	24.7		20		18.5	32.5
SMA6S21CAH	23.5	25.9		21		17.6	34.1
SMA6S22CAH	24.6	27.2		22		16.8	35.7
SMA6S24CAH	26.8	29.6		24		15.4	39.0
SMA6S25CAH	27.9	30.9		25		14.8	40.6
SMA6S26CAH	29.1	32.1		26		14.2	42.2
SMA6S30CAH	33.5	37.1		30		12.3	48.7
SMA6S33CAH	36.9	40.8		33		11.2	53.6
SMA6S36CAH	40.2	44.5		36		10.3	58.4
SMA6S39CAH	43.6	48.2		39		9.5	63.3
SMA6S40CAH	44.7	49.4		40		9.2	64.9
SMA6S43CAH	48.1	53.1		43		8.6	69.8
SMA6S47CAH	52.5	58.1		47		7.9	76.3
SMA6S51CAH	57.0	63.0	51	7.2	82.8		
SMA6S56CAH	62.6	69.2	56	6.6	90.9		

FEATURES

- AUTOMOTIVE QUALIFIED **AEC-Q101**
- UNI-DIRECTIONAL & BI-DIRECTIONAL TYPES
- MEETS SURGE SPECIFICATION (Varied by test conditions) **ISO7637-2** (Pulse 1/2a/2b/3a/3b)

APPLICATIONS

- AUTOMOTIVE
- MOTOR FOR BLDC
- BATTERY MANAGEMENT SYSTEM
- LIGHTING
- SWITCHING MODE POWER SUPPLY (SMPS)



Official Website X LinkedIn

For more information: marketing@ts.com.tw

© 2026 TAIWAN SEMICONDUCTOR, CO., LTD. ALL RIGHTS RESERVED.



www.taiwansemi.com