

**OVERVIEW**

The SM6503A is the Diode array for ESD protection. 5 circuits consisted of diode element are integrated into ultra-small 6 pin plastic package. It is the most appropriate to protect the external interface circuit of portable equipment which requires miniaturization from ESD.

**FEATURES**

- ± 8kV ESD immunity level (IEC61000-4-2 contact discharge)
- Clamp voltage: 7.5V typ.
- Low capacitance: 10pF typ.
- 5 circuits integrated into one package
- Ultra-small package
  - SM6503AD: 6-pin SON
  - SM6503AH: SOT23-6

**APPLICATIONS**

- Cellular phone
- PDA
- Set Top Box
- Digital Still Camera

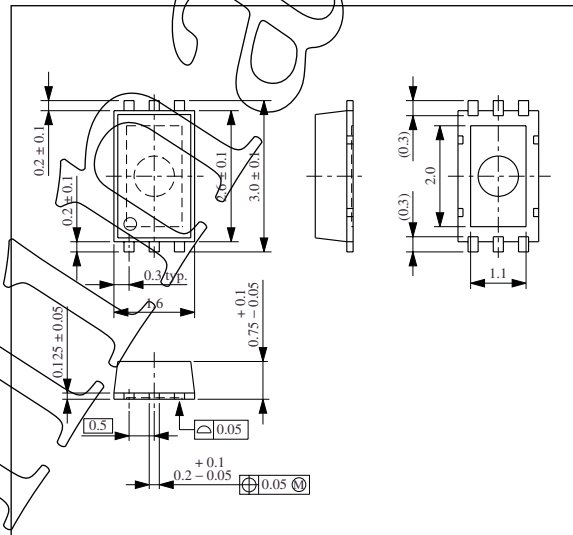
**ORDERING INFORMATION**

Device	Package
SM6503AD	6-pin SON
SM6503AH	SOT23-6

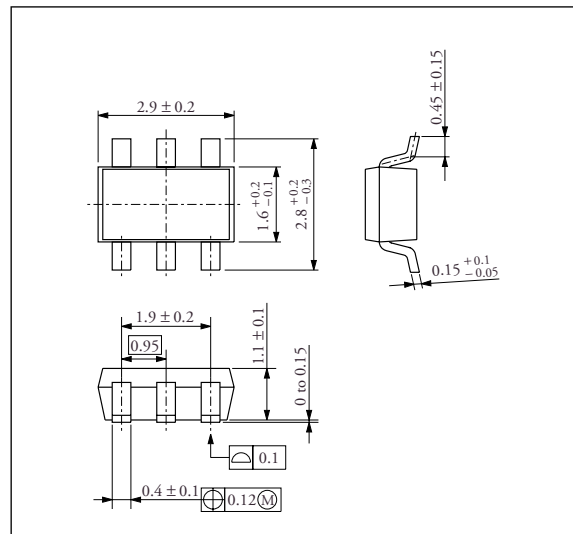
**PACKAGE DIMENSIONS**

(Unit: mm)

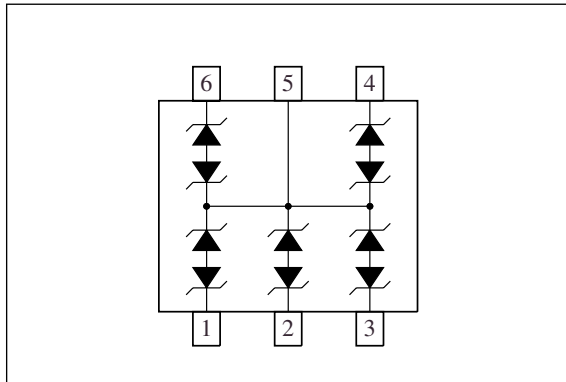
**SM6503AD (6-pin SON)**



**SM6503AH (SOT23-6)**



**PINOUT** (Top view)



**PIN DESCRIPTION**

Number	Name	Description
1	DIO1	Diode 1
2	DIO2	Diode 2
3	DIO3	Diode 3
4	DIO4	Diode 4
5	VSS	Ground
6	DIO5	Diode 5

**SPECIFICATIONS**

**Absolute Maximum Ratings**

Ta = 25°C

Parameter	Symbol	Condition	Rating	Unit
Power dissipation	P <sub>D</sub>		220	mW
Storage temperature range	T <sub>stg</sub>		- 55 to 125	°C

**Electrical Characteristics**

Ta = 25°C

Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Diode maximum leakage current	I <sub>LEAK</sub>	6V applied	-	-	1	μA
Forward clamp voltage	V <sub>ZF</sub>	I <sub>Z</sub> = 1μA	6.5	7.5	8.5	V
		I <sub>Z</sub> = 5mA	-	6.5	-	V
Reverse clamp voltage	V <sub>ZR</sub>	I <sub>Z</sub> = -1μA	-8.5	-7.5	-6.5	V
		I <sub>Z</sub> = -5mA	-	-8.0	-	V
Terminal capacitance	C <sub>T</sub>	f = 1MHz, between DIO1 to DIO5 and VSS	-	10	-	pF
Maximum operating voltage	V <sub>MAX</sub>		-	-	6	V

Preliminary

NIPPON PRECISION CIRCUITS INC. reserves the right to make changes to the products described in this data sheet in order to improve the design or performance and to supply the best possible products. Nippon Precision Circuits Inc. assumes no responsibility for the use of any circuits shown in this data sheet, conveys no license under any patent or other rights, and makes no claim that the circuits are free from patent infringement. Applications for any devices shown in this data sheet are for illustration only and Nippon Precision Circuits Inc. makes no claim or warranty that such applications will be suitable for the use specified without further testing or modification. The products described in this data sheet are not intended to use for the apparatus which influence human lives due to the failure or malfunction of the products. Customers are requested to comply with applicable laws and regulations in effect now and hereinafter, including compliance with export controls on the distribution or dissemination of the products. Customers shall not export, directly or indirectly, any products without first obtaining required licenses and approvals from appropriate government agencies.

**NPC**  
NIPPON PRECISION CIRCUITS INC.

NIPPON PRECISION CIRCUITS INC.

4-3, Fukuzumi 2-chome  
Koto-ku, Tokyo 135-8430, Japan  
Telephone: +81-3-3642-6661  
Facsimile: +81-3-3642-6698  
<http://www.npc.co.jp/>  
Email: [sales@npc.co.jp](mailto:sales@npc.co.jp)

NP0023AE 2001.02