



NXP ESD protection diodes



Advanced ESD protection for more robust designs

The NXP portfolio includes more than 150 ESD protection diodes, optimized for various applications. There are high-speed dataline protection devices with capacitances down to $C_d = 0.4$ pF (typical), products in ultra-small packages for improved PCB design flexibility, single- and multi-line solutions for integrated protection of multiple bus lines and many more.

Key features

- ▶ 6 capacitance classes down to $C_d = 0.4$ pF (typ)
- ▶ High ESD robustness of up to 30 kV
- ▶ More than 20 available packages, from standard to ultra small
- ▶ AEC-Q101 qualified

Applications

- ▶ Computing
- ▶ Audio / Video equipment
- ▶ High-speed data lines
- ▶ Automotive bus systems

Criteria for decision	Competitive advantage	Customers benefit from
Capacitance	Products available with capacitances down to 0.4 pF	▶ optimum performance in high-frequency applications
ESD robustness	Most products exceed IEC 6100-4-2 standards	▶ better protection against ESD strikes ▶ fewer ESD strike related field returns
Saving space	Products in ultra small leadless SOD882 (1.0 x 0.6 x 0.5 mm) package	▶ increased layout flexibility and more PCB space
Leakage current	Maximum leakage currents of down to 0.01 μ A	▶ reduced power consumption for extended battery life
Field quality	Leading supplier with quality standards that ensure a very low (1-digit) product failure rate per billion cases	▶ reduced field returns

Product highlights

New type in Femto Farad capacitance class:

PESD5V0F1BL	1 line	$C_d = 0.4$ pF, ESD robustness = 10 kV	in SOD882, bidirectional
-------------	--------	--	--------------------------

Ultra-small package


PESD5V0X1BL	1 line	$C_d = 0.9$ pF, ESD robustness = 9 kV	in SOD882, bidirectional
PESD5V0U1UL	1 line	$C_d = 2.0$ pF, ESD robustness = 10 kV	in SOD882, unidirectional

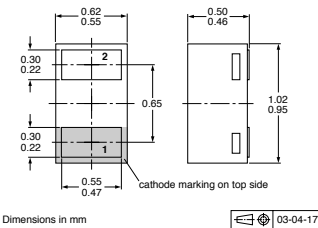
Application-optimized products

PESD1CAN	2 lines	$C_d = 11$ pF, ESD robustness = 23 kV	in SOT23, bidirectional → for automotive bus systems
PRTR5V0U2D	2 lines	$C_d = 1$ pF, ESD robustness = 8 kV	in SOT457, rail-to-rail configuration → for high-speed data lines (USB 2.0, DVI)

Have a look at NXP's complete ESD protection portfolio and get details at www.nxp.com → Products → ESD, EMI and signal conditioning

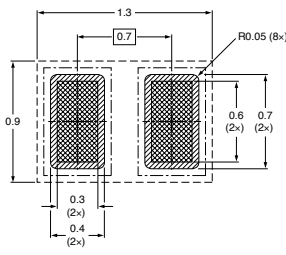
Package information





Dimensions in mm


03-04-17

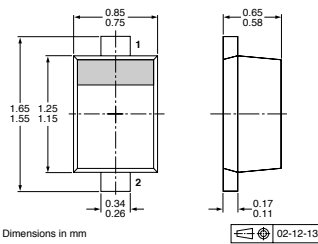


Dimensions in mm

sod882_fr

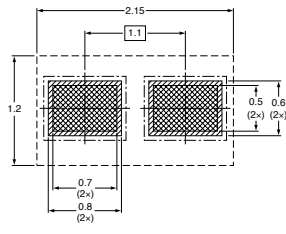
SOD882: Ultra-small leadless package (1.0 x 0.6 x 0.5 mm)





Dimensions in mm

02-12-13



Dimensions in mm

sod523_fr

SOD523: Ultra-small 2-pin package (1.2 x 0.8 x 0.6 mm)

www.nxp.com

founded by

PHILIPS

© 2009 NXP B.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Date of release: August 2009

Document order number: 9397 750 16760

Printed in the Netherlands