NXP SOD882D package with reduced height and innovative pad design

First leadless package with tin-plated, solderable side pads

This new, ultra-small leadless plastic package is the industry's first to offer solderable side pads. It measures only 1.0 x 0.6 x 0.37 mm and delivers very high mechanical stability.

Key features

- Solderable side pads
- Low package height of 0.37 mm
- AEC-Q101 qualified

Key benefits

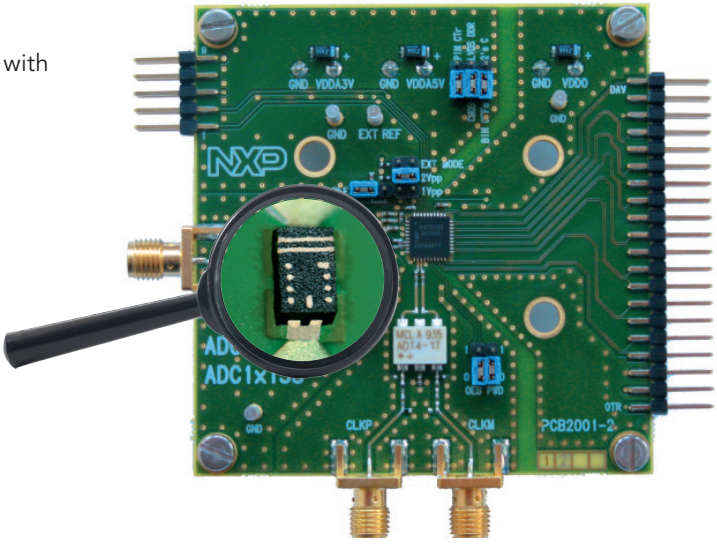
- Supports ultra-flat PCB designs
- Side pads for easy visual soldering inspection
- High shear force robustness
- Full thermal, electrical, and mounting compatibility with SOD882 and competitor offerings
- Very high mechanical stability
- Minimized package tilting

More information

- http://www.nxp.com/infocus/topics/sod882d/

Key applications

- Highly space-constrained devices
- Mobile phones
- Handheld (consumer) appliances
- Tablet PCs

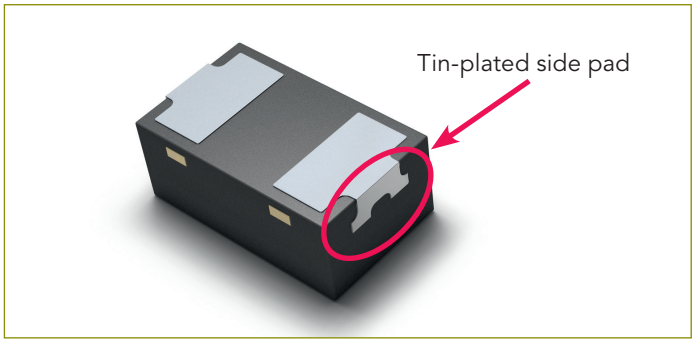


Exposed solderable side pads

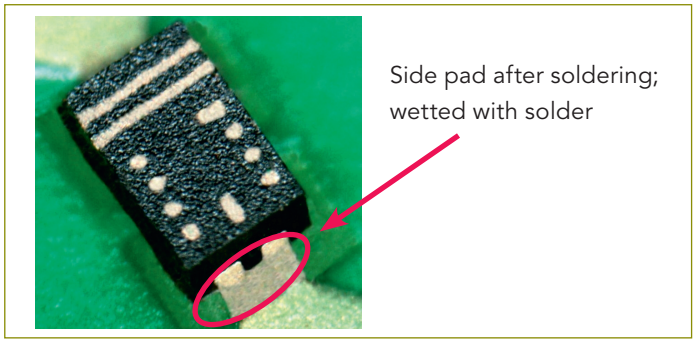
NXP's new SOD882D package is the first leadless package in the market with tin-plated, solderable side pads.

The innovative pad design provides the side pads with an exposed surface for solder wetting. The result is very high mechanical robustness and easy visual inspection of the soldering.

SOD882D

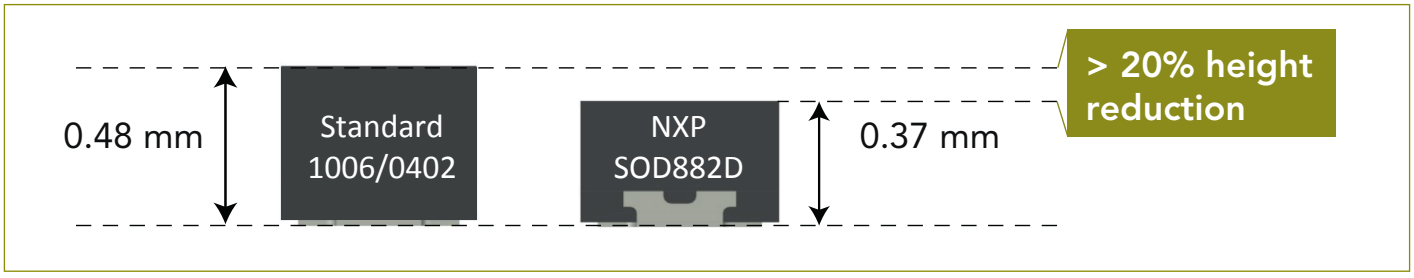


SOD882D (mounted on PCB)



Reduced package height

The package height is only 0.37 mm. This is up to 20% lower than comparable 1006/0402 packages in the market and is optimal for ultra-flat PCB designs.



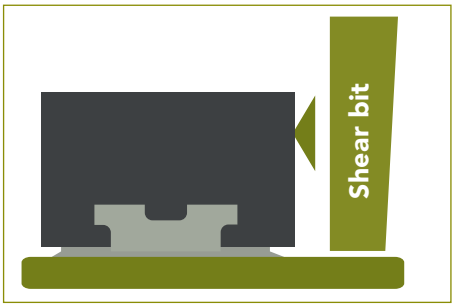
Height comparison of competitor packages with form factor of 1.0 x 0.6 mm (0402 inch)

	NXP		Competitor 1	Competitor 2	Competitor 3	Competitor 4	Competitor 5
Package	SOD882D	SOD882	SLP1006P2	DFN1006H4-2L	TSLP-2L	CST2	LLP1006-2L
Height [mm] typ	0.37	0.47	0.48	0.40	0.38	0.38	0.36

Improved mechanical robustness

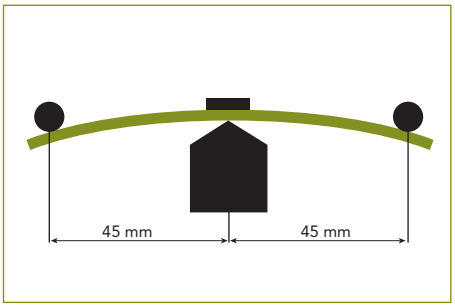
Maximum shear force

Optimized for high shear forces for robust soldering



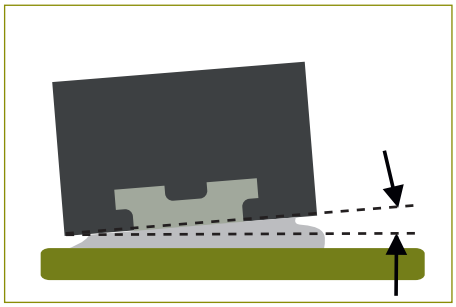
Maximum board bending

Very high board bending capability for designs with flexible PCBs



Minimum tilting angle

Reduced tilting angle for ultra flat PCB designs



Shear force comparison of competitor packages with form factor of 1.0 x 0.6 mm (0402)

	NXP	Competitor 1	Competitor 2	Competitor 3	Competitor 4	Competitor 5	Competitor 6
Package	SOD882D	SLP1006P2	TSLP-2L	CST2	LLP1006-2L	VMN2	SOD923
Shear force [N] average	19.11	18.91	14.72	13.01	14.18	12.23	7.98

SOD882D – portfolio

ESD protection diodes

SOD882D Type	V_{RWM} (V)	C_d typ (pF)	C_d max (pF)	ESD rating max (kV)	I_R typ@ V_{RWM} (nA)	I_{PP} (8/20 µs pulse) (A)	V_{CL} @ I_{PP} (8/20 µs pulse) (V)	Configuration
PESD5V0S1ULD	5	152	200	30	100	15	20	
PESD5V0L1ULD	5	25	30	26	10	3.5	12	
PESD5V0X1UALD	5.5	1.55	1.75	15	1	2	9	
PESD5V0X1ULD	5	0.95	1.1	8	1	3	10	
PESD12VS1ULD	12	38	75	30	<1	5	35	
PESD15VS1ULD	15	32	70	30	<1	5	40	
PESD24VS1ULD	24	23	50	23	<1	3	70	
PESD5V0S1BLD	5	35	45	30	5	12	14	
PESD5V0V1BLD	5	11	13	30	1	4.8	12.5	
PESD5V0U1BLD	5	2.9	3.5	10	5	-	-	

Low V_F MEGA Schottky diodes

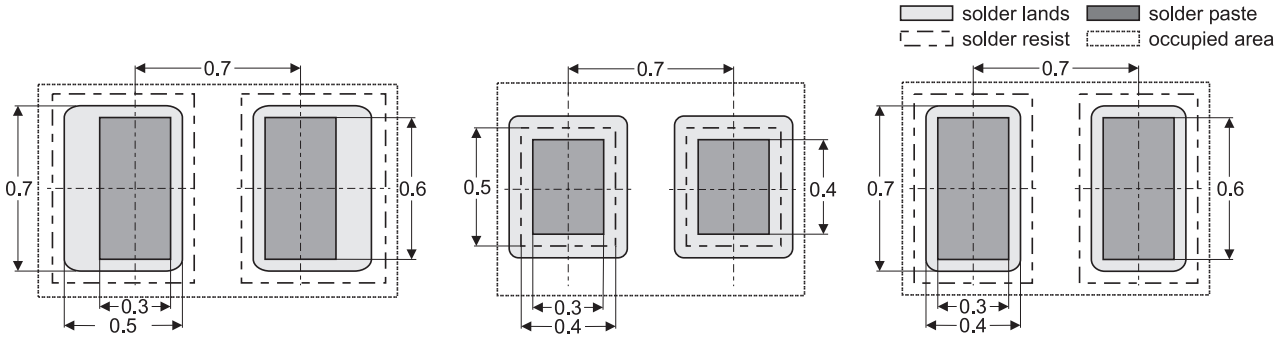
SOD882D Type	V_R max (V)	I_F max (mA)	V_F max @ I_F max (mV)	V_F max @ 10 mA (mV)	I_R max (µA)	@ V_R (V)	t_{rr} typ (ns)	Configuration
PMEG2005ELD	20	500	500	290	30	10	7	
PMEG2005AELD	20	500	440	190	600	10	6	
PMEG3002AELD	30	200	480	300	10	10	6	
PMEG3005ELD	30	500	500	270	200	10	6	
PMEG4002ELD	40	200	600	360	0,5	25	4	

High speed switching diode

SOD882D Type	V_R max (V)	V_F max @ 50 mA (V)	I_R max @ 80 V (µA)	I_F max (mA)	T_{rr} max (ns)	P_{tot} (mW)	Configuration
BAS16LD	100	1	0.5	215	4	250	

SOD882D package characteristics

Footprint options for SOD882D package



SOD882D footprint

- **Standard** footprint for SOD882D
- Full utilization of all features

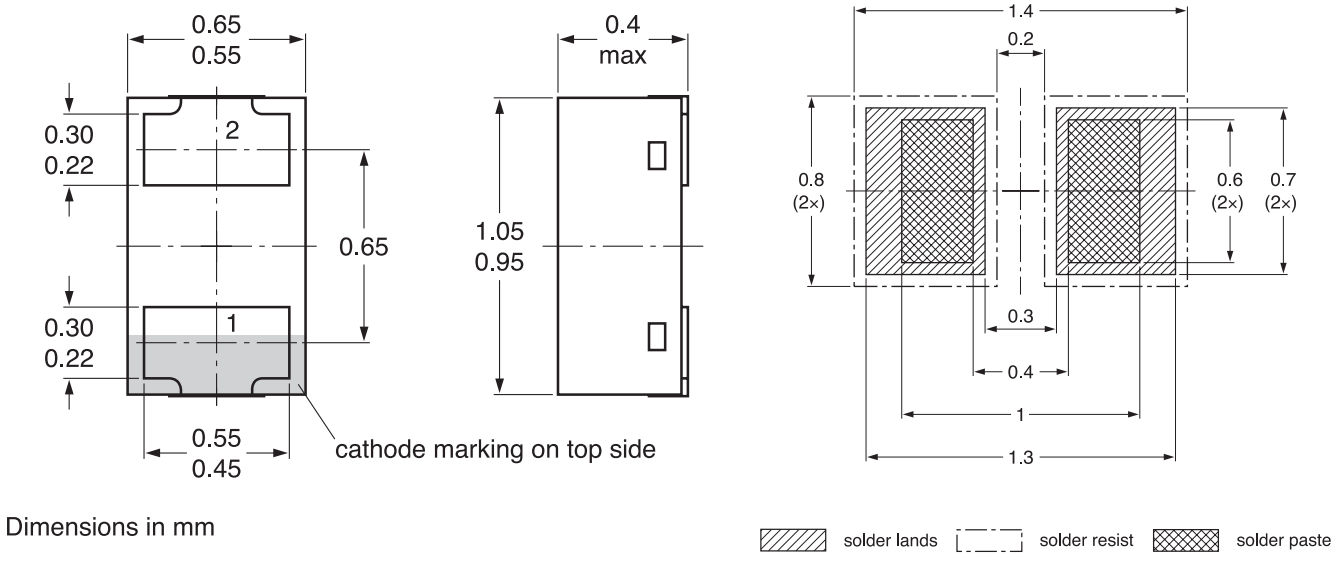
SOD882D footprint

- **Minimized** SOD882D footprint (reduced side pads wetting)
- Optimal for ultra compact PCB layouts

SOD882 footprint

- Full compatibility to SOD882 footprint
- Optimal for existing PCB layouts with standard 1006/0402 devices

Dimensions and soldering recommendation



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