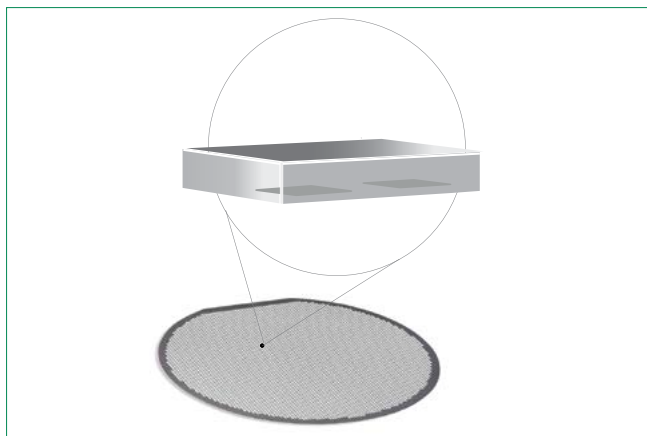


FC09B1606NL-0/FC09B1606NS-0

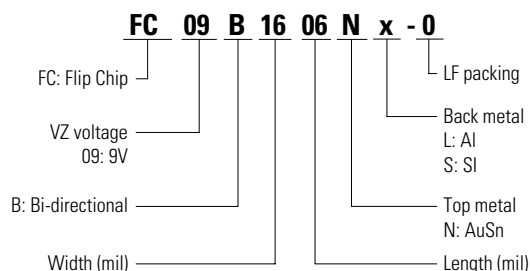
Flip Chip Zener Die, Bi-directional for ESD Protection



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
T_j	Operating Temperature	150	°C

Part Numbering



Description

The new FC09B1606Nx-0 is to be designed next to the LED together to provide improved bi-directional ESD protection, and it can safely absorb repetitive ESD strikes above the maximum contact level specified in IEC 61000-4-2 international standard level 4.

Features & Benefits

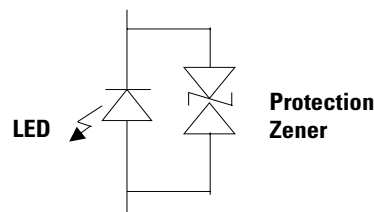
- Bi-directional
- Enhanced ESD performance
- ESD, IEC 61000-4-2 standard level 4: 8kV contact & 15kV air
- Saves bonding wire in assemble process
- AEC-Q qualified with package SOT-23; qualification report to be provided upon request.
- Optional backside metalization for optical appearance (Al/ Si)

Applications

- Handset Flash LED ESD protection
- Auto LED headlight ESD
- Backlight LED in Display TV and Monitor
- Outdoor LED
- Ultraviolet UV light / Sterilamp
- Module embedded ESD die for I/Os

Functional Diagram

Equivalent Circuit



Electrical Characteristics ($T_{OP}=25\text{ }^{\circ}\text{C}$)

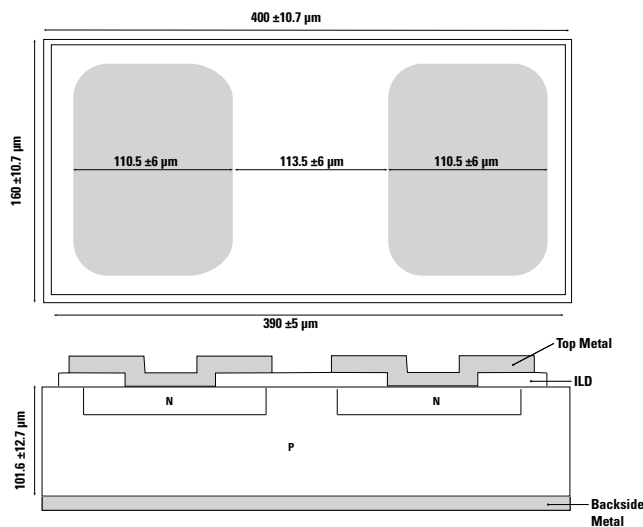
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Zener Voltage	$V_z 1$ (Forward)	$I_{zf1}=5\text{ mA}$	7.0	-	10.5	V
	$V_z 2$ (Forward)	$I_{zf2}=10\text{ }\mu\text{A}$	7.0	-	10.5	V
	$V_z 1$ (Reverse)	$I_{zf1}=5\text{ mA}$	7.0	-	10.5	V
	$V_z 2$ (Reverse)	$I_{zf2}=10\text{ }\mu\text{A}$	7.0	-	10.5	V
Leakage Current	I_{df}	$V=5\text{ V}$	-	10	500	nA
	I_{dr}		-	10	500	nA

Note: Parameter is guaranteed by package characterization

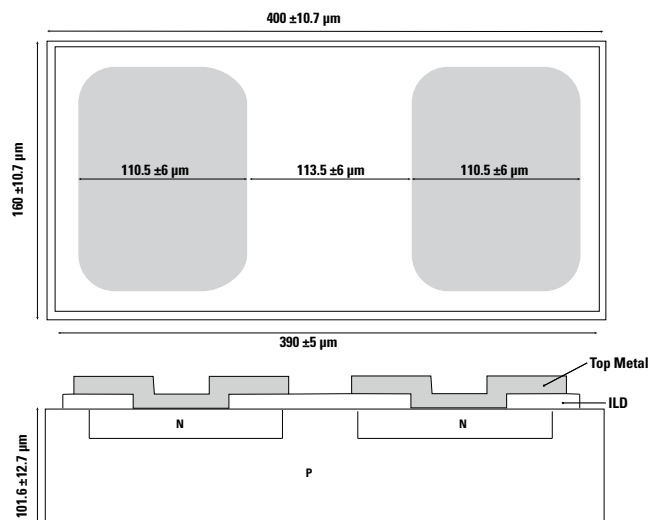
FC09B1606NL-0/FC09B1606NS-0

Flip Chip Zener Die, Bi-directional for ESD Protection

Physical Dimensions



FC09B1606NL-0	Characteristics	
Die size	$400 * 160 \pm 10.7 \mu\text{m}$	$15.75 * 6.3 \pm 0.42 \text{ mil}$
Pad size	$110.5 \pm 6.0 \mu\text{m}$	$4.35 \pm 0.20 \text{ mil}$
Die thickness	$101.6 \pm 12.7 \mu\text{m}$	$4.00 \pm 0.50 \text{ mil}$
Top metalization	SnAu 20 / 80 $3 \mu\text{m}$	SnAu 20 / 80 0.12 mil
Back metallization	Al	



FC09B1606NS-0	Characteristics	
Die size	$400 * 160 \pm 10.7 \mu\text{m}$	$15.75 * 6.3 \pm 0.42 \text{ mil}$
Pad size	$110.5 \pm 6.0 \mu\text{m}$	$4.35 \pm 0.20 \text{ mil}$
Die thickness	$101.6 \pm 12.7 \mu\text{m}$	$4.00 \pm 0.50 \text{ mil}$
Top metalization	SnAu 20 / 80 $3 \mu\text{m}$	SnAu 20 / 80 0.12 mil
Back material	SI	

Packing Specification

For detail packing size or specification, please contact Littelfuse.

Disclaimer Notice - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.