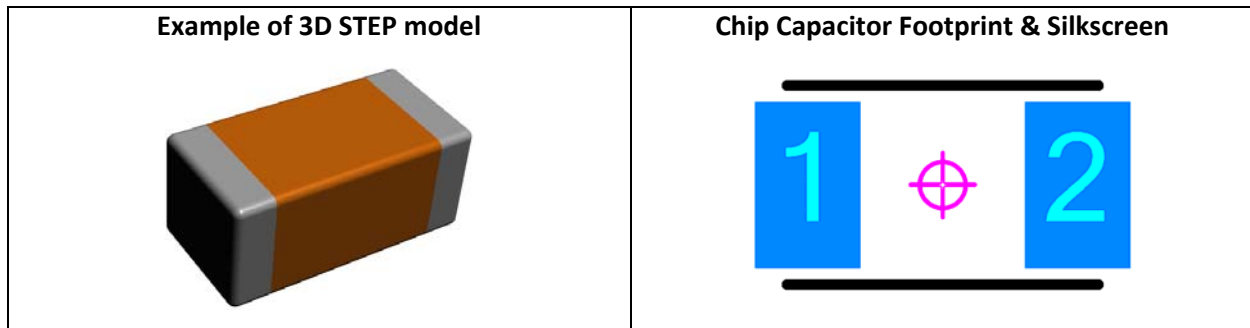
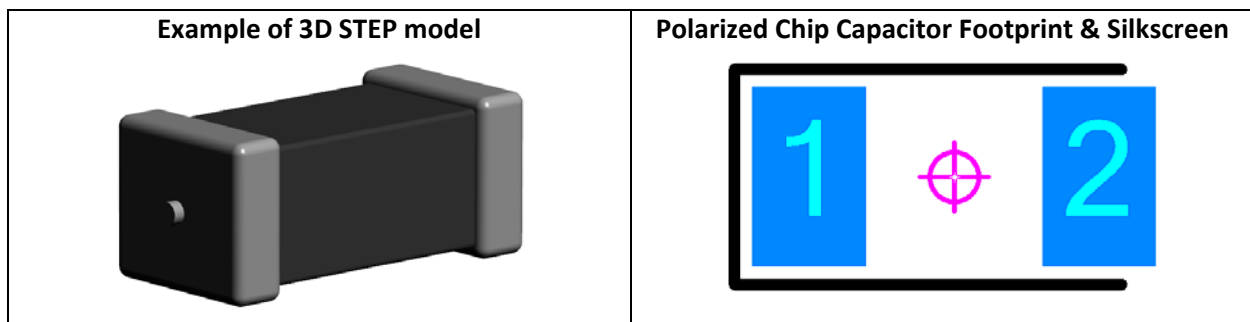


# Library Expert IPC-7351C Calculator Component Families

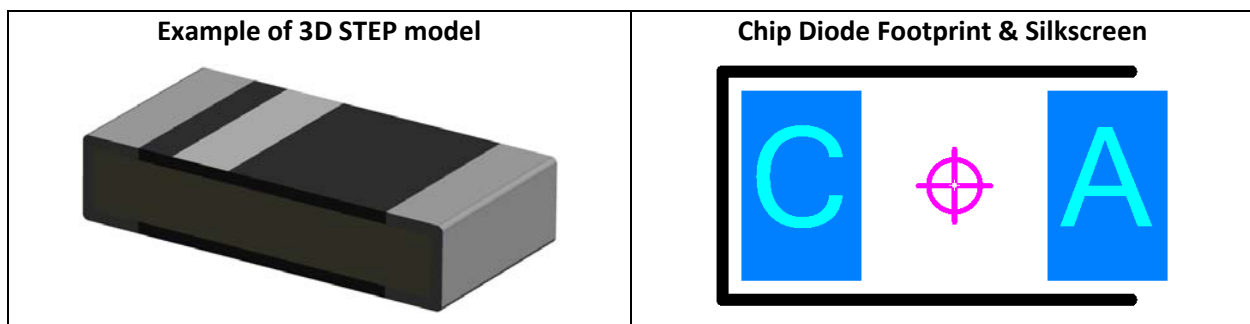
## Chip Capacitor (CAPC)



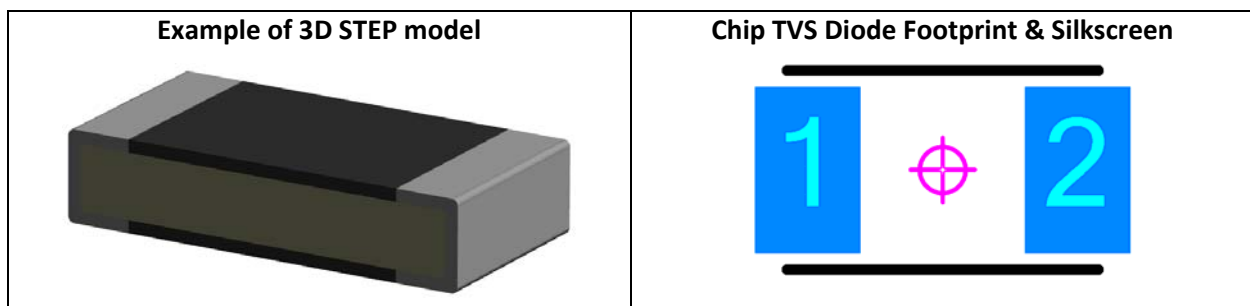
## Chip Capacitors, Polarized (CAPCP)



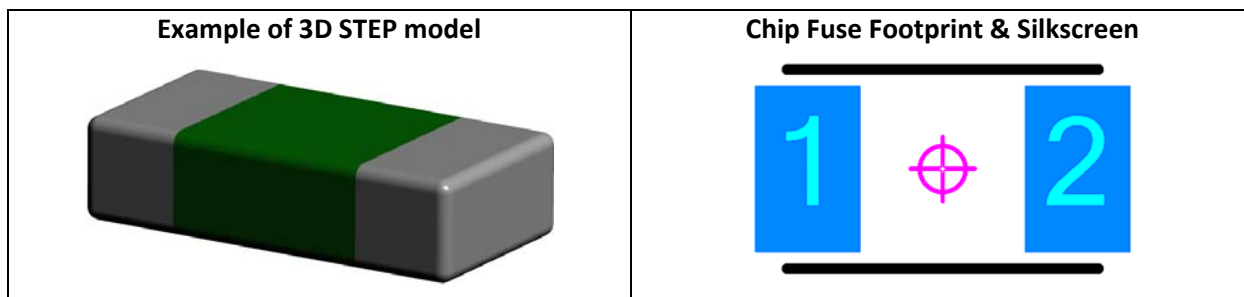
## Chip Diode (DIOC)



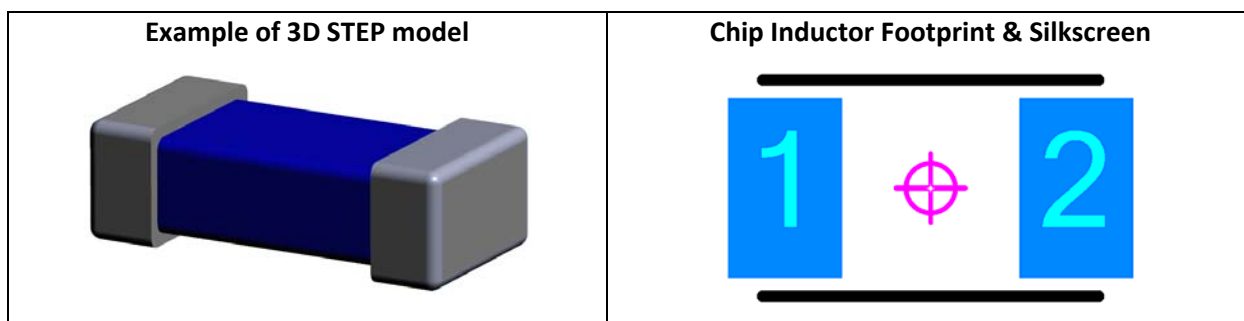
## Chip Diode, Non-polarized (DIOCN)



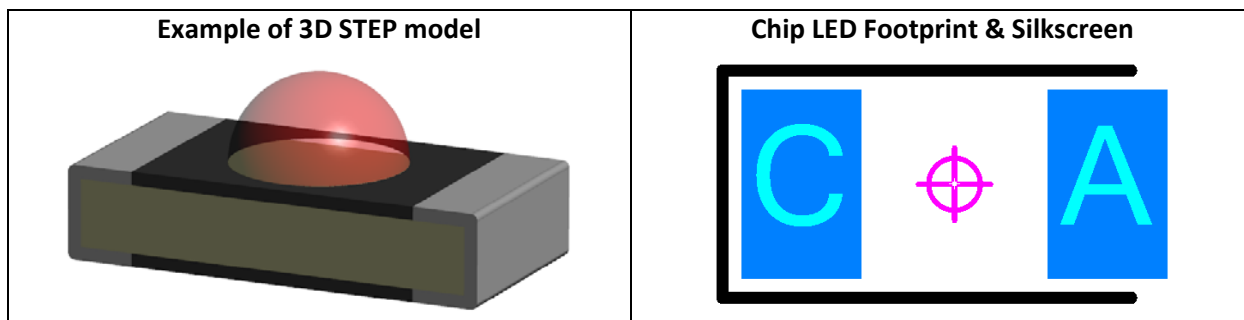
## Chip Fuses (FUSC)



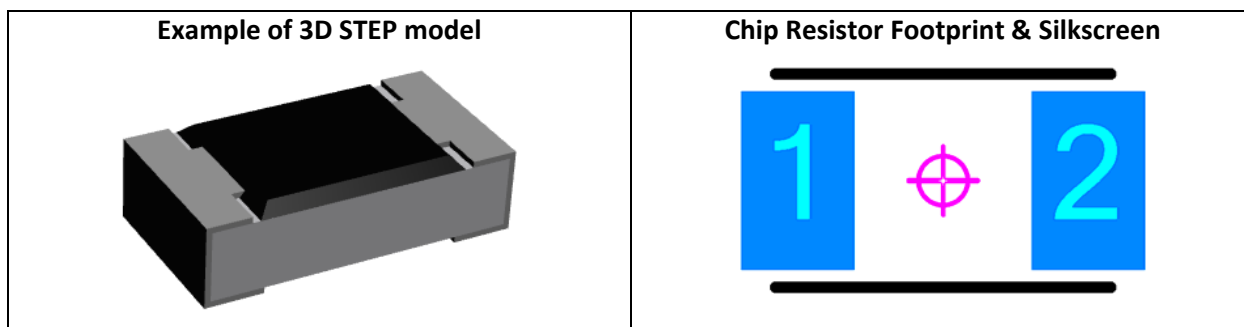
## Chip Inductors (INDC)



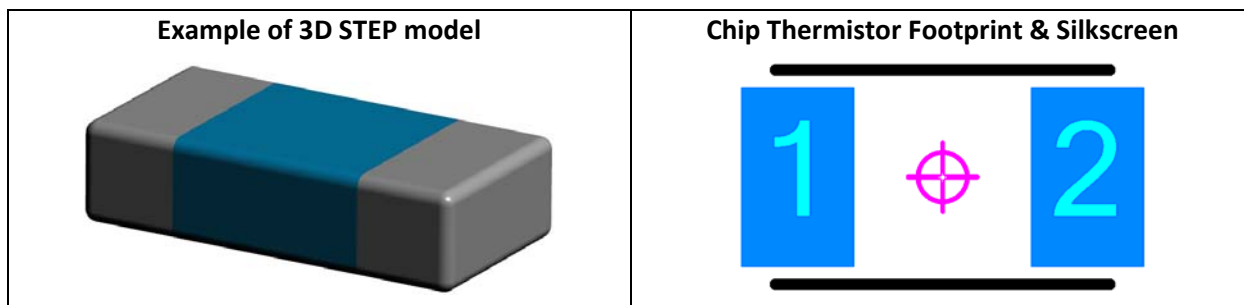
## Chip Light-emitting Diodes (LEDC)



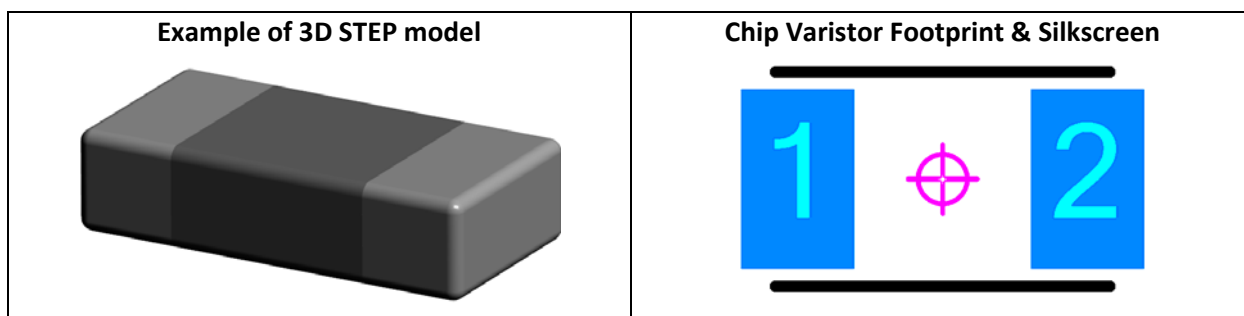
## Chip Resistors (RESC)



## Chip Thermistors (THRMC)



## Chip Varistors (VARC)

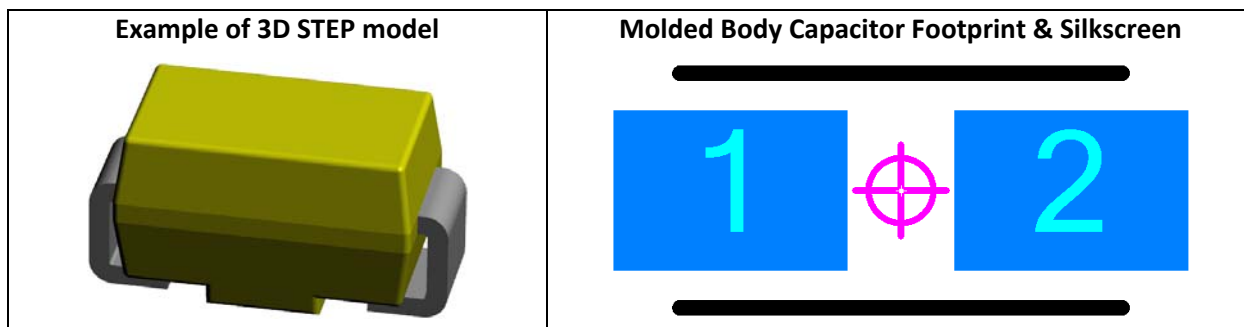


## Rectangular Chip Components (unit: mm)

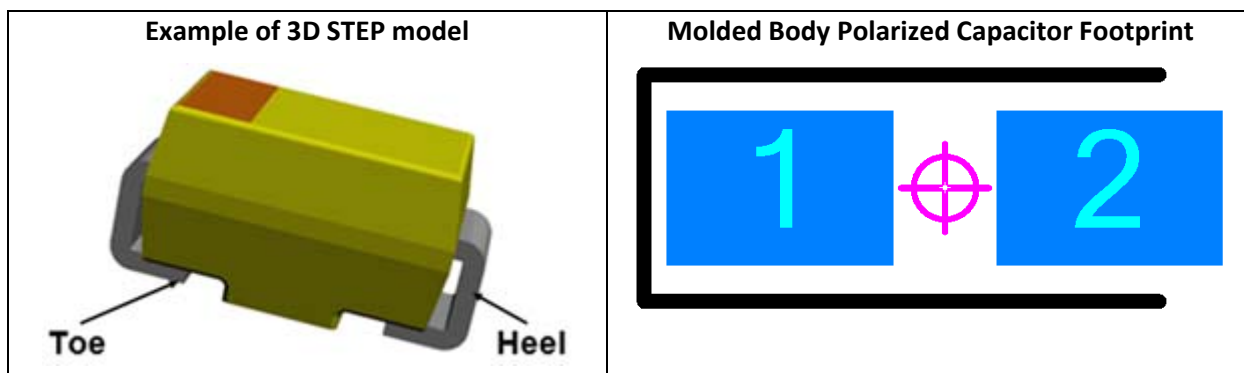
Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ )	0.00	0.00	0.00
Side ( $J_S$ )	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12
<b>Rectangular Chip Components Smaller than 1608 (0603) (unit: mm)</b>			
Toe ( $J_T$ ) 0402	0.15		
Toe ( $J_T$ ) 0201	0.12		
Toe ( $J_T$ ) 01005	0.10		
Heel ( $J_H$ )	0.00		
Side ( $J_S$ )	0.00		
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.15		

Chip Package Size Codes and Dimensions			
EIA (inch) Name	Inch Dimensions	IEC (metric) Name	Metric Dimensions
01005	0.0157 in × 0.0079 in	0402	0.4 mm × 0.2 mm
0201	0.024 in × 0.012 in	0603	0.6 mm × 0.3 mm
0402	0.039 in × 0.020 in	1005	1.0 mm × 0.5 mm
0603	0.063 in × 0.031 in	1608	1.6 mm × 0.8 mm
0805	0.079 in × 0.049 in	2012	2.0 mm × 1.25 mm
1008	0.098 in × 0.079 in	2520	2.5 mm × 2.0 mm
1206	0.126 in × 0.063 in	3216	3.2 mm × 1.6 mm
1210	0.126 in × 0.098 in	3225	3.2 mm × 2.5 mm
1806	0.177 in × 0.063 in	4516	4.5 mm × 1.6 mm
1812	0.18 in × 0.13 in	4532	4.5 mm × 3.2 mm
2010	0.197 in × 0.098 in	5025	5.0 mm × 2.5 mm
2512	0.25 in × 0.13 in	6332	6.4 mm × 3.2 mm
2920	(0.29 in × 0.20 in	7451	7.4 mm × 5.1 mm

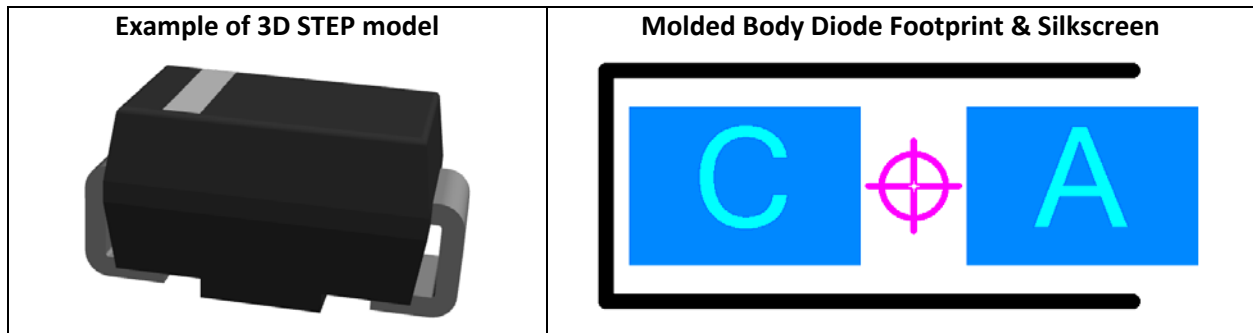
#### Molded Body Capacitors (CAPM)



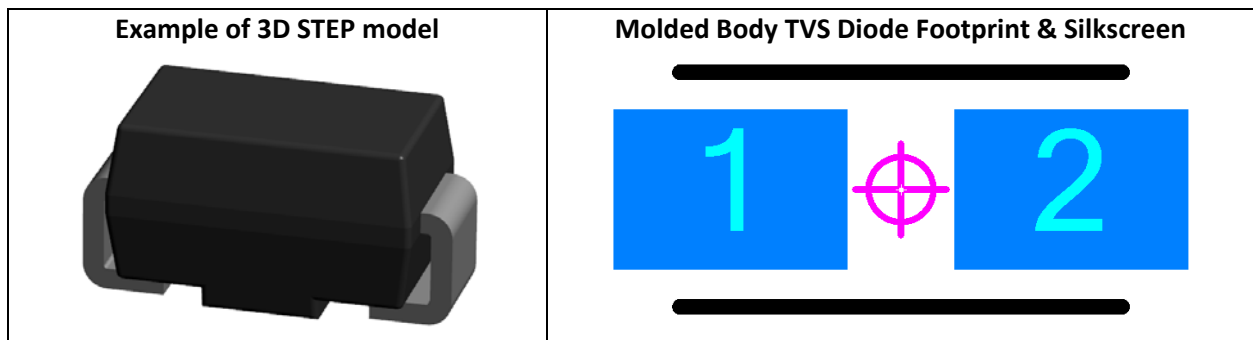
#### Molded Body Capacitors, Polarized (CAPMP)



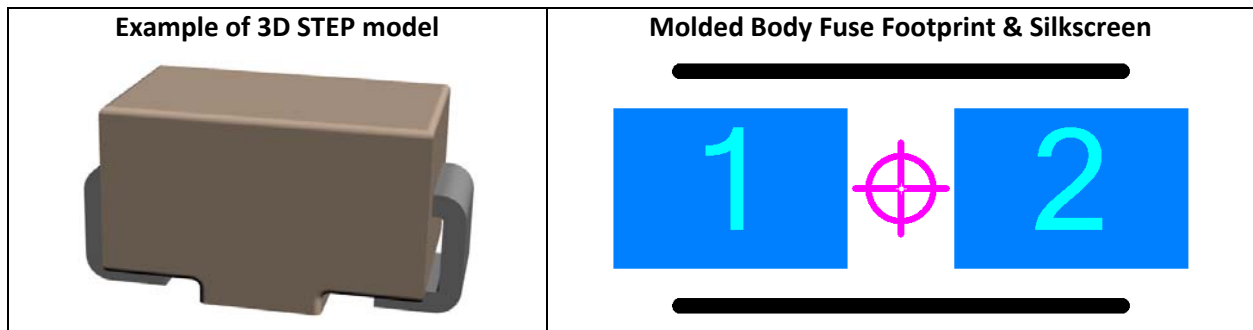
### Molded Body Diodes (DIOM)



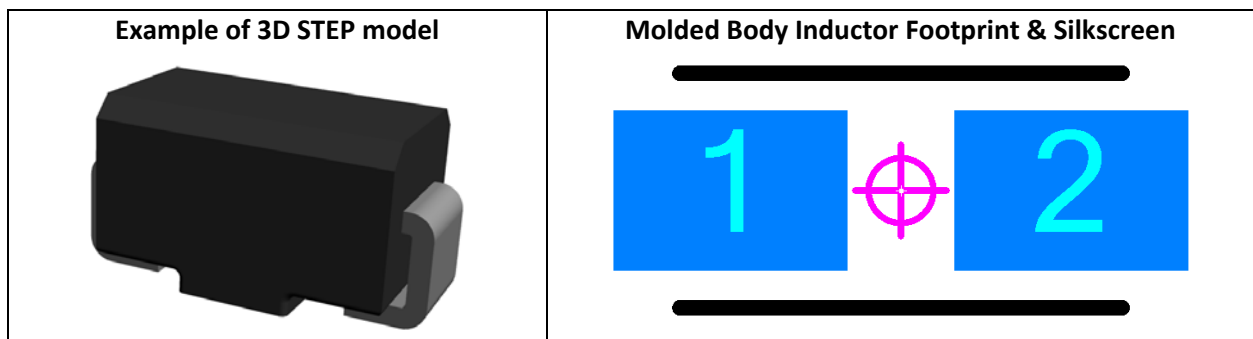
### Molded Body Diodes, Non-polarized (DIOMN)



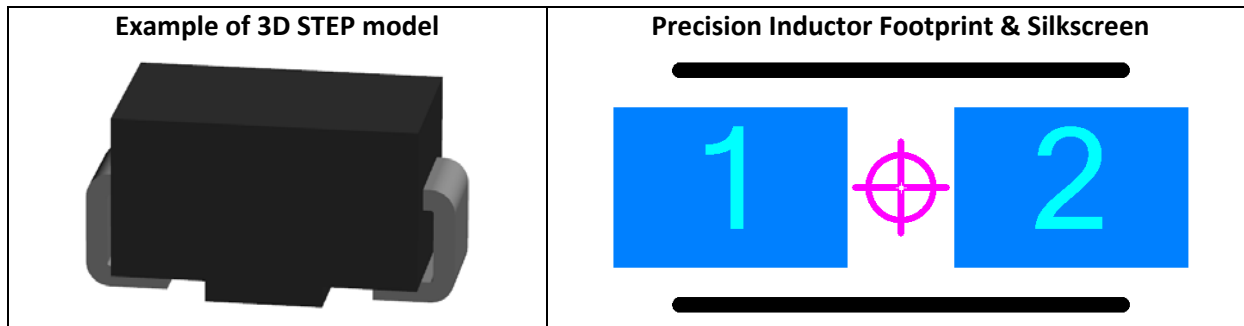
### Molded Body Fuses (FUSM)



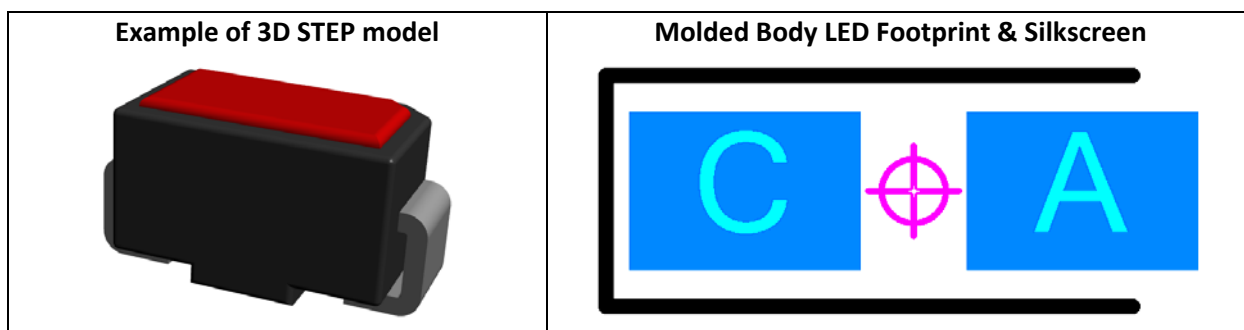
### Molded Body Inductors (INDM)



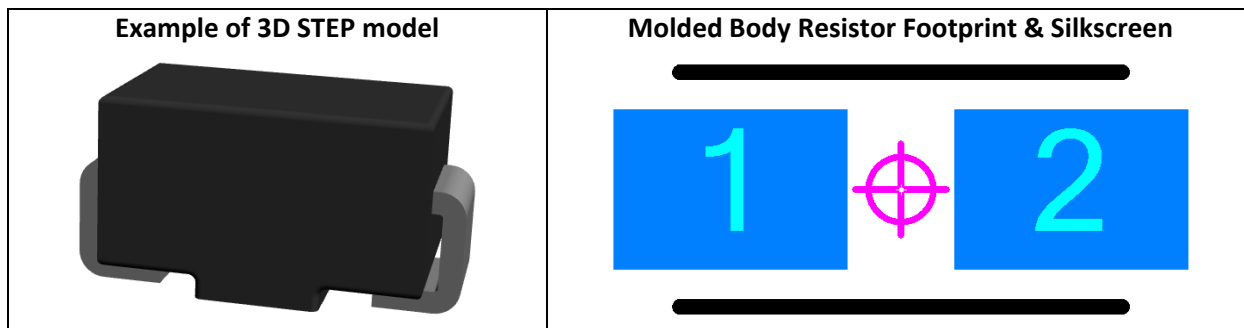
### Molded Body Inductors, Precision (INDPM)



### Molded Body Light-emitting Diode (LEDM)



### Molded Body Resistors (RESM)



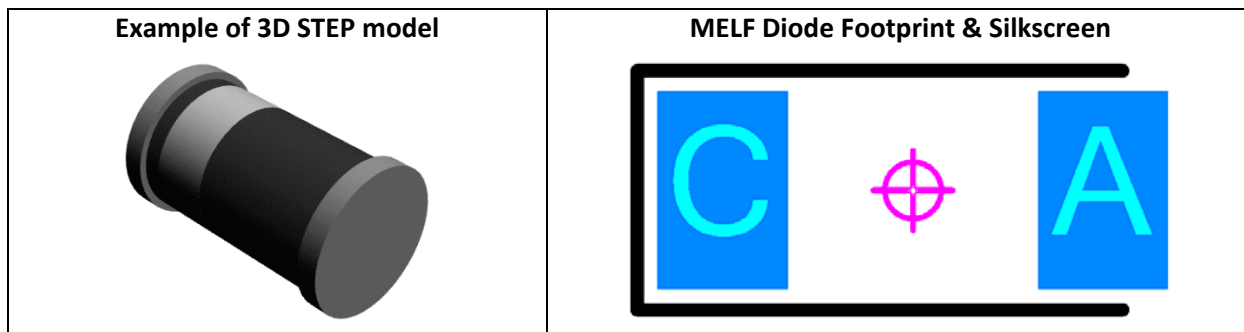
### Inward Flat Ribbon L-Leads (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ ) (to find G dim)	0.25	0.15	0.07
Heel ( $J_H$ ) (to find Z dim)	0.80	0.50	0.20
Side ( $J_S$ )	0.01	-0.05	-0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

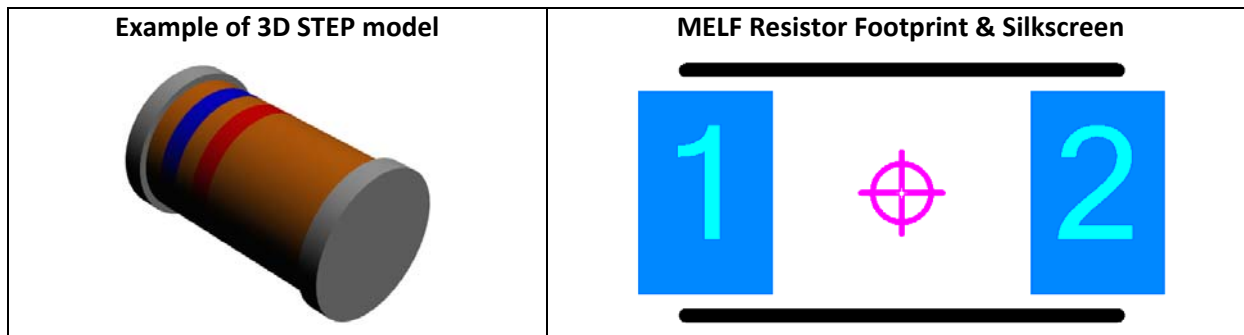
Common Molded Body Tantalum Capacitors			
EIA Size Code	Package Dimensions	KEMET Case Code	AVX Case Code
2012-12	2.0 mm × 1.3 mm × 1.2 mm	R	R
3216-10	3.2 mm × 1.6 mm × 1.0 mm	I	K
3216-12	3.2 mm × 1.6 mm × 1.2 mm	S	S
3216-18	3.2 mm × 1.6 mm × 1.8 mm	A	A
3528-12	3.5 mm × 2.8 mm × 1.2 mm	T	T
3528-21	3.5 mm × 2.8 mm × 2.1 mm	B	B
6032-15	6.0 mm × 3.2 mm × 1.5 mm	U	W
6032-28	6.0 mm × 3.2 mm × 2.8 mm	C	C
7260-38	7.3 mm × 6.0 mm × 3.8 mm	E	V
7343-20	7.3 mm × 4.3 mm × 2.0 mm	V	Y
7343-31	7.3 mm × 4.3 mm × 3.1 mm	D	D
7343-43	7.3 mm × 4.3 mm × 4.3 mm	X	E

Common Molded Body Diodes		
JEDEC Standard	Case Code	Package Dimensions
DO-214AA	SMB	5.30 mm × 3.60 mm × 2.25 mm
DO-214AB	SMC	7.95 mm × 5.90 mm × 2.25 mm
DO-214AC	SMA	5.20 mm × 2.60 mm × 2.15 mm

### MELF Diodes (DIOMELF)



### MELF Resistors (RESMELF)

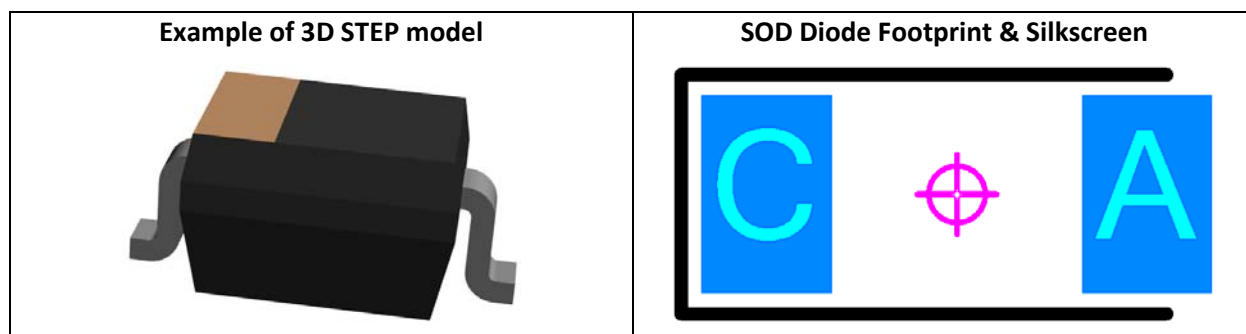


### Cylindrical End Cap Terminations (MELF) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.60	0.40	0.20
Heel ( $J_H$ )	0.20	0.10	0.02
Side ( $J_S$ )	0.10	0.05	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

Common MELF Package Sizes		
Common Case Names	Size Code	Package Dimensions
MicroMelf (MMU)	0102	2.20 mm L X 1.10 mm Dia.
MiniMelf (MMA)	0204	3.60 mm L X 1.40 mm Dia.
Melf (MMB)	0207	5.80 mm L X 2.20 mm Dia.

### Small Outline Diode (SOD)



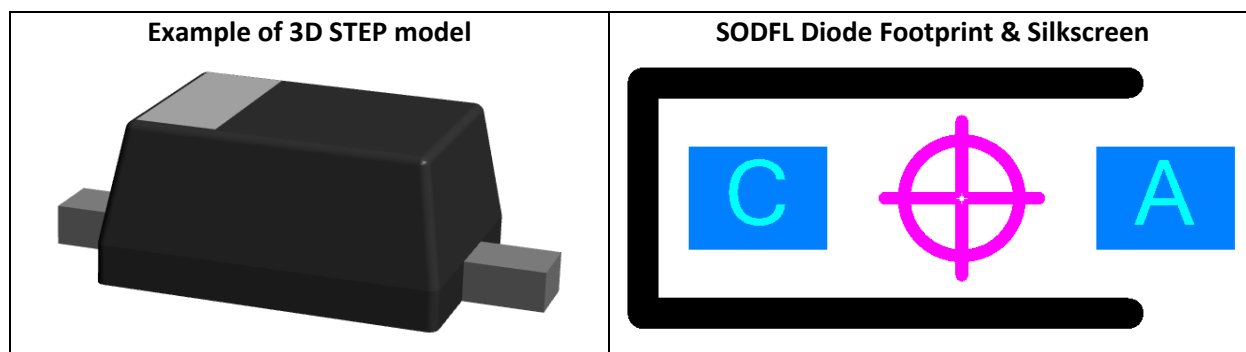
### Flat Ribbon L and Gull-Wing Leads (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ ) <sup>1</sup>	0.45	0.35	0.25
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12



Common Small Outline Diode (SOD) Sizes	
Case Code	Package Dimensions
SOD-123	3.68 mm × 1.17 mm × 1.60 mm
SOD-128	5.00 mm × 2.70 mm × 1.10 mm
SOD-323	1.70 mm × 1.25 mm × 0.95 mm
SOD-523	1.25 mm × 0.85 mm × 0.65 mm
SOD-723	1.40 mm × 0.60 mm × 0.59 mm

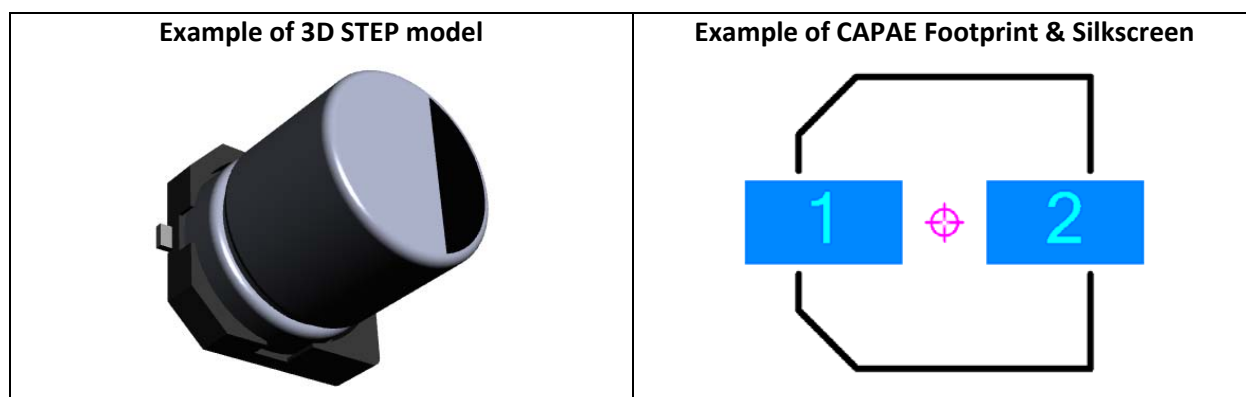
### Small Outline Diode, Flat Lead (SODFL)



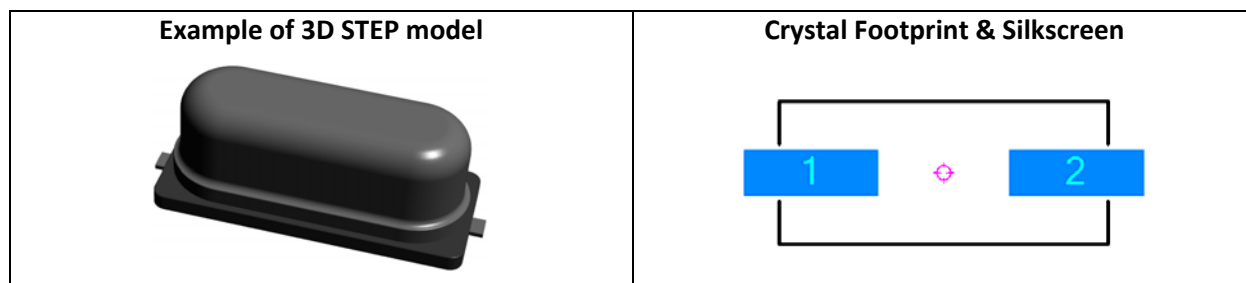
### Small Outline Diodes, Flat Lead (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.30	0.20	0.10
Heel ( $J_H$ )	0.00	0.00	0.00
Side ( $J_S$ )	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.20	0.15	0.12

### Electrolytic Aluminum Capacitor (CAPAE)



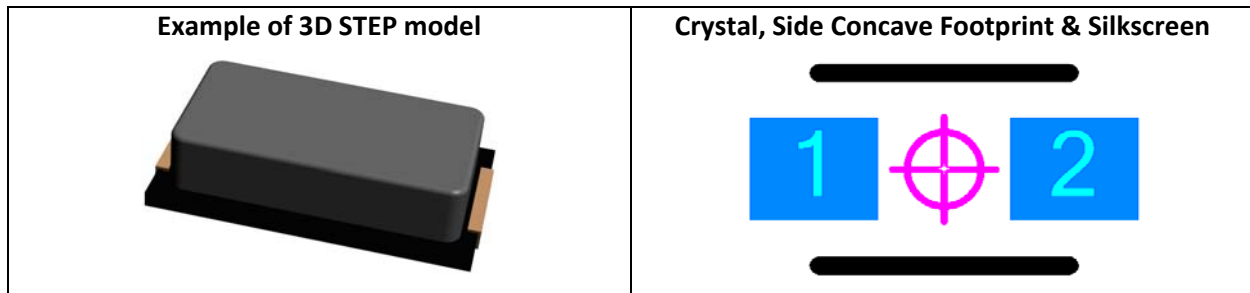
## Crystal



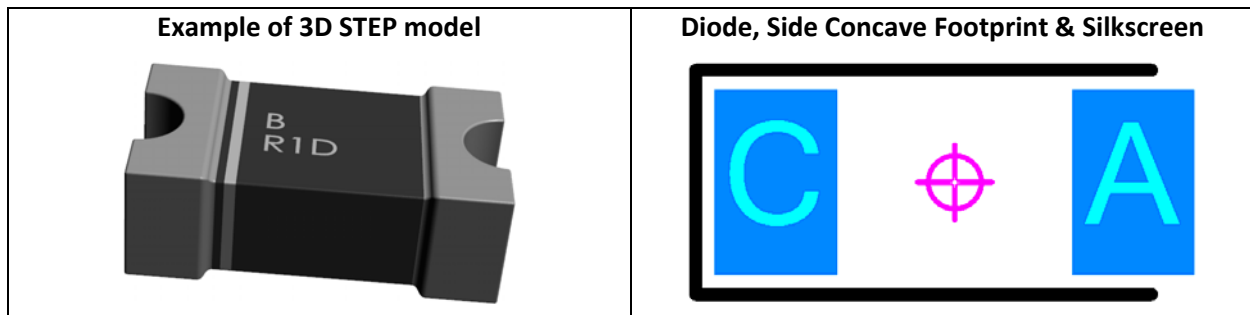
Electrolytic Aluminum Capacitor and Crystal (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.70	0.50	0.30
10.0 mm or higher	1.00	0.70	0.40
Heel ( $J_H$ )	0.00	-0.10	-0.20
10.0 mm or higher	0.00	-0.05	-0.10
Side ( $J_S$ )	0.50	0.40	0.30
10.0 mm or higher	0.60	0.50	0.40
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	1.00	0.50	0.25

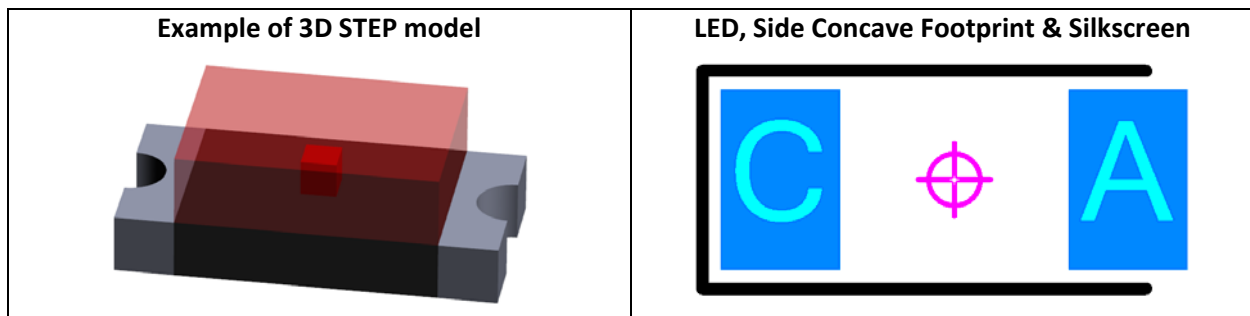
### Crystals, Side Concave (XTALSC)



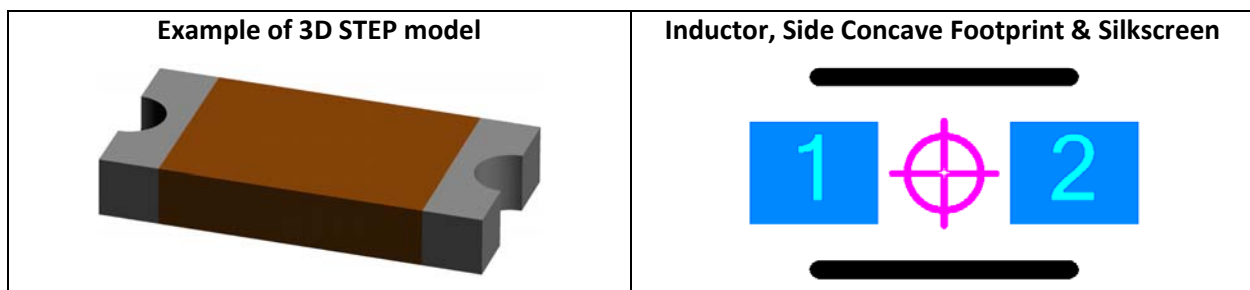
### Diodes, Side Concave (DIOESC)



### Light-emitting Diode, Side Concave (LEDSC)



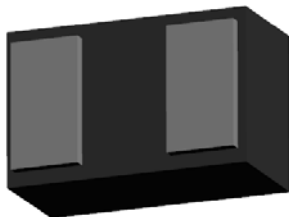

### Inductor, Side Concave (INDSC)



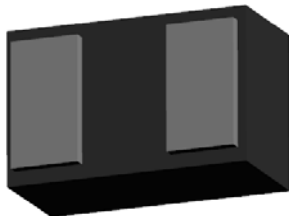

### Side Concave Terminal (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.45	0.35
Heel ( $J_H$ )	-0.05	-0.07	-0.10
Side ( $J_S$ )	-0.05	-0.07	-0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

### Resistor, Dual Flat No-lead (RESDFN)

<p>Example of 3D STEP model</p> 	<p>Resistor, DFN Footprint &amp; Silkscreen</p> 
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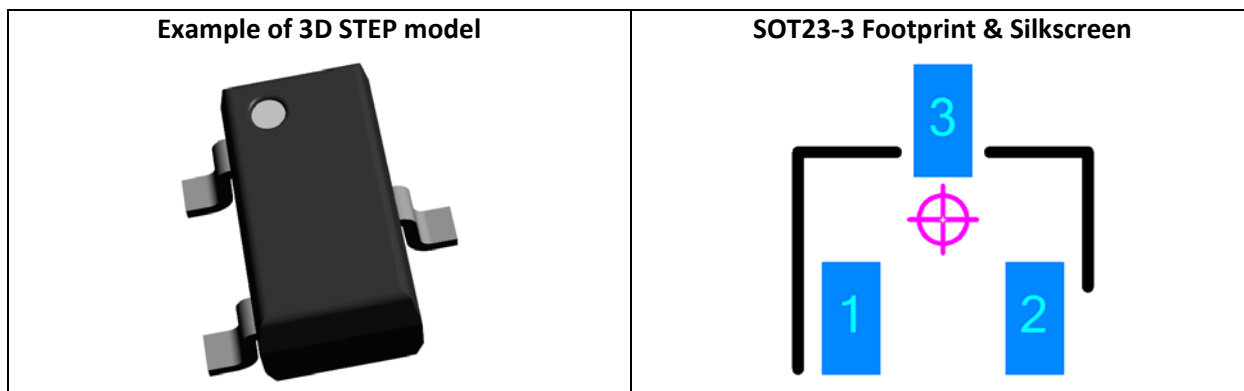
### Diode, Dual Flat No-lead (DIODFN)

<p>Example of 3D STEP model</p> 	<p>Diode, DFN Footprint &amp; Silkscreen</p> 
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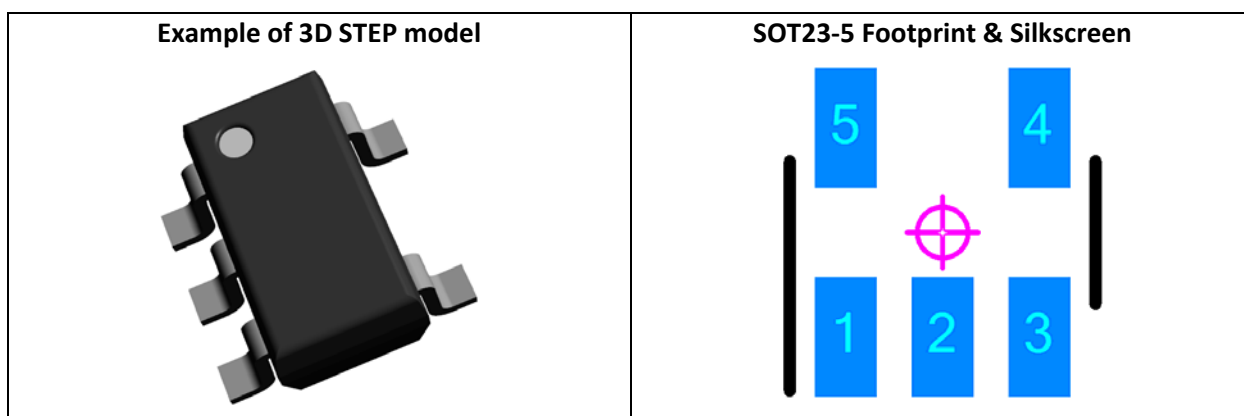
### Dual Flat No-Lead (DFN) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Periphery	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12
<b>Dual Flat No-Lead (DFN) Less than 1608 (0603)</b>			
Periphery	-0.04		
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.15		

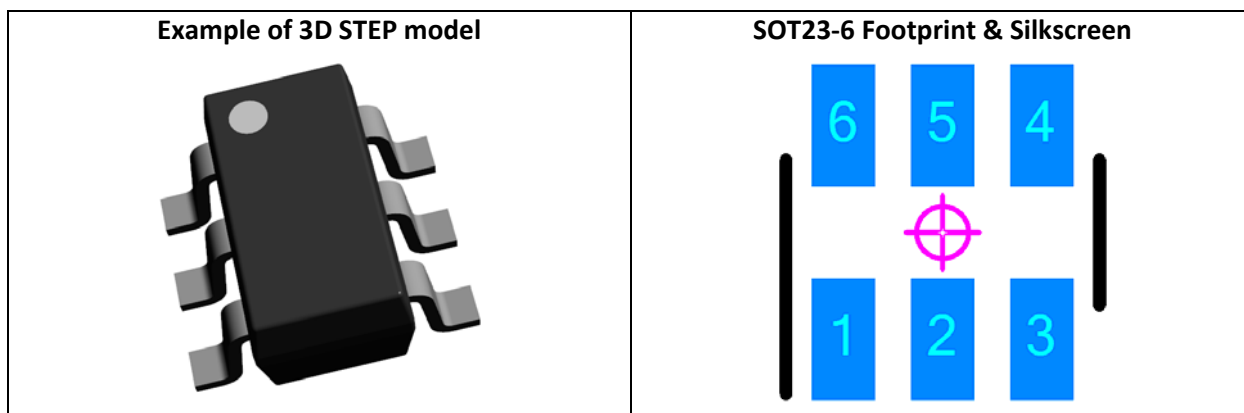
### Small Outline Transistor (SOT23) 3-pin



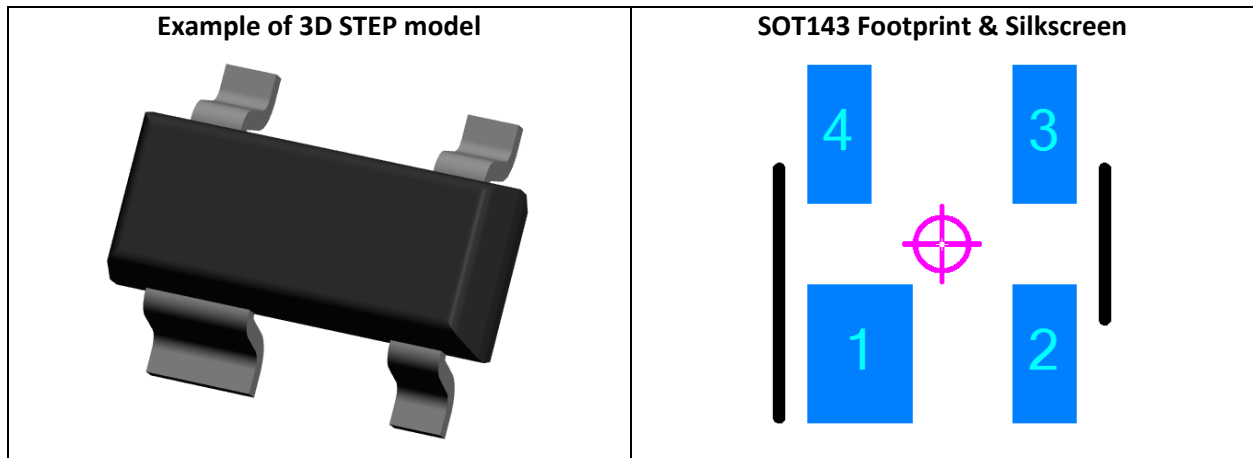
### Small Outline Transistor (SOT23) 5-pin



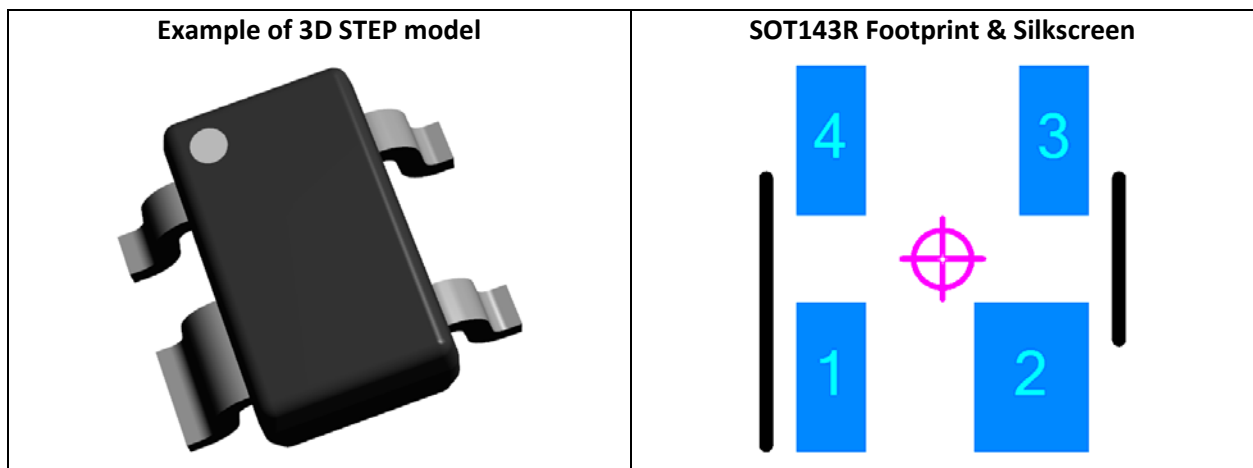
### Small Outline Transistor (SOT23) 6-pin



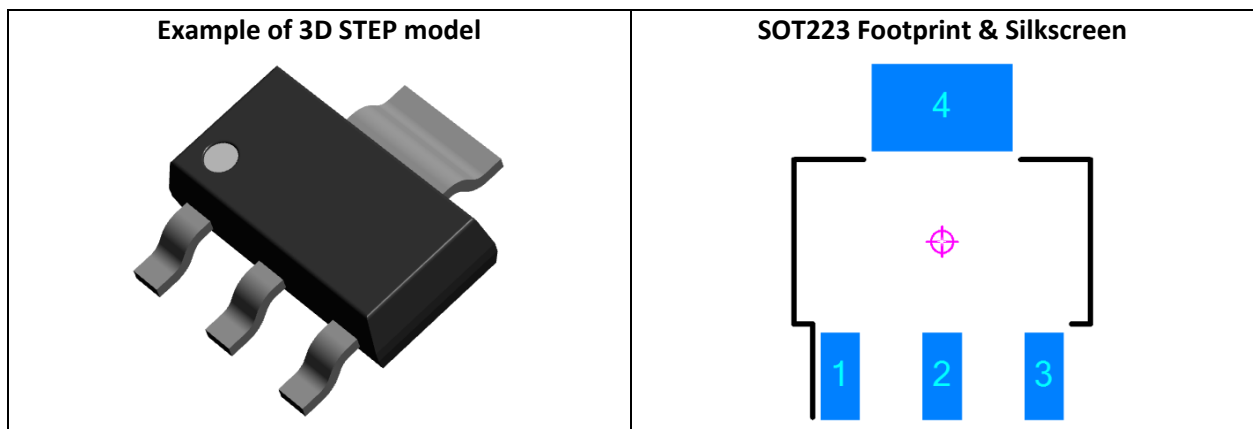
### Small Outline Transistor SOT143



### Small Outline Transistor SOT143 Reversed



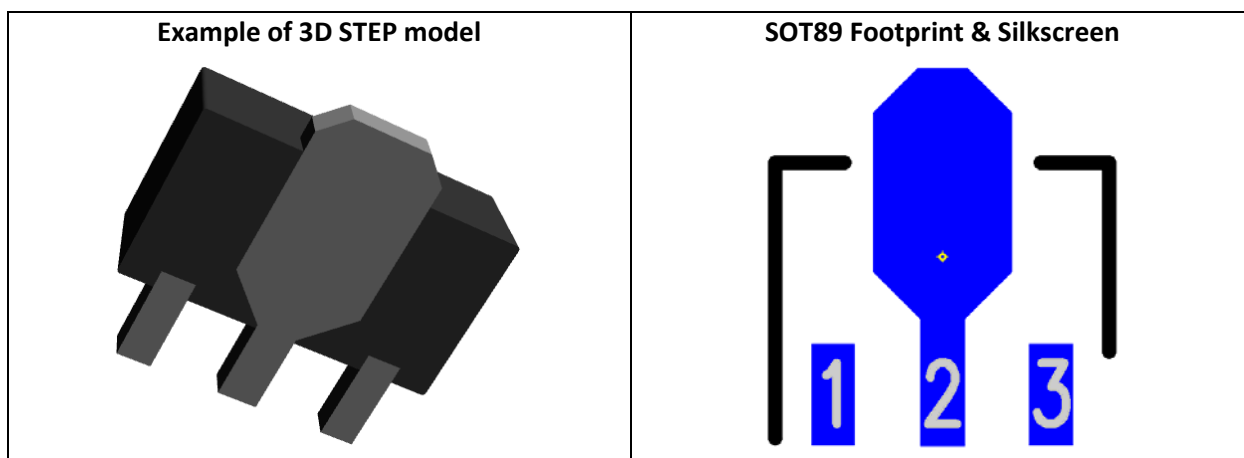
### Small Outline Transistor (SOT223)



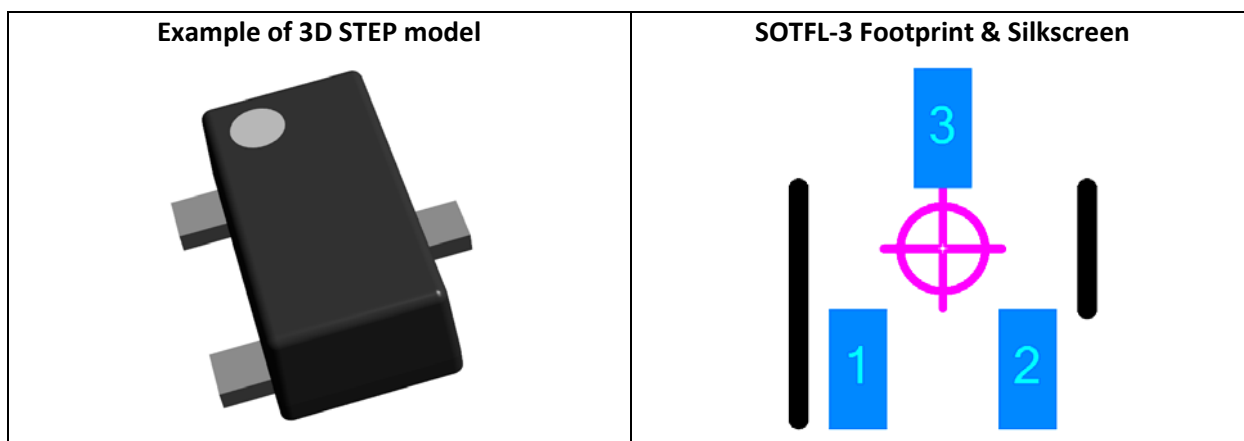
### Flat Ribbon Land Gull-Wing Leads (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ ) <sup>1</sup>	0.45	0.35	0.25
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

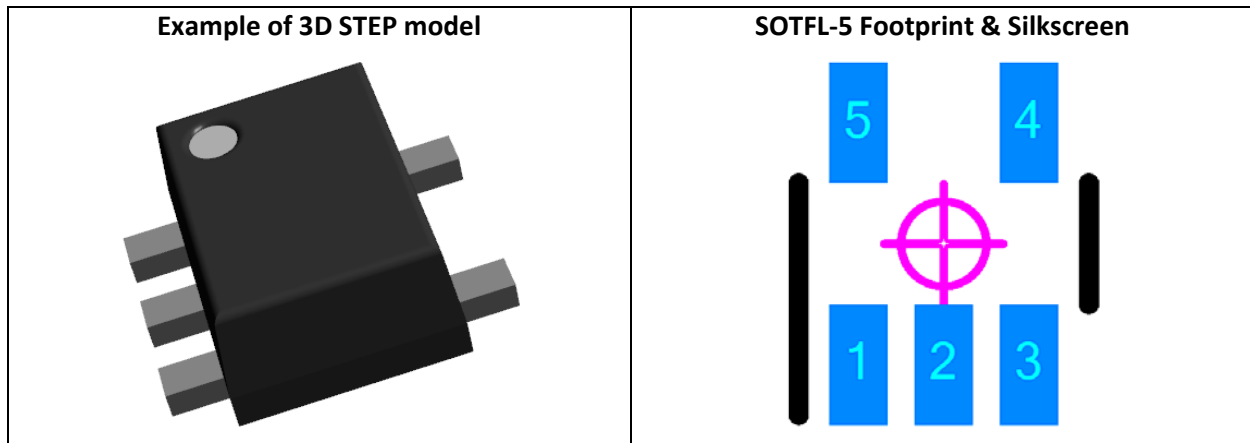
### Small Outline Transistor (SOT89)



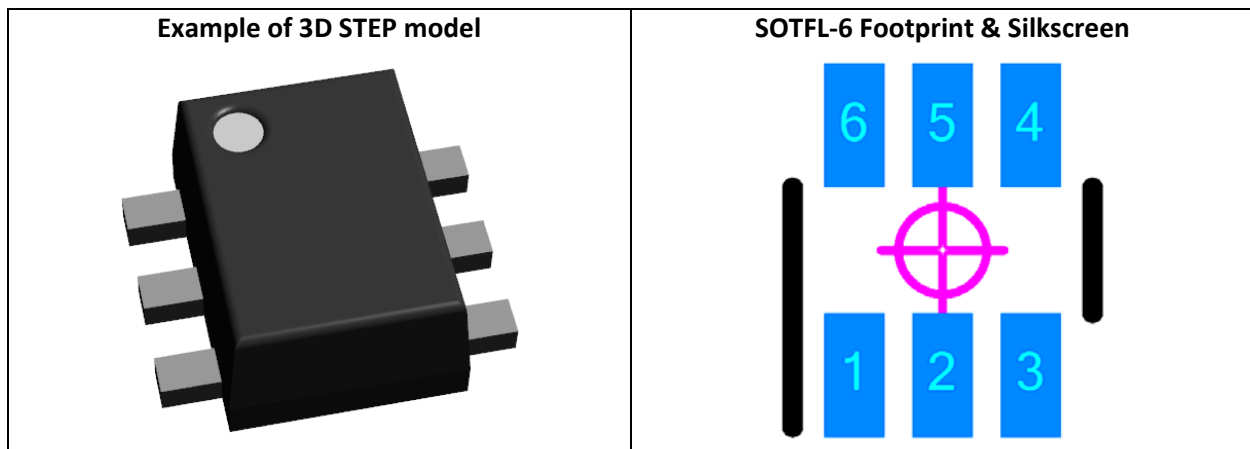
### Small Outline Transistor Flat Lead (SOTFL) 3-pin



### Small Outline Transistor Flat Lead (SOTFL) 5-pin



### Small Outline Transistor Flat Lead (SOTFL) 6-pin

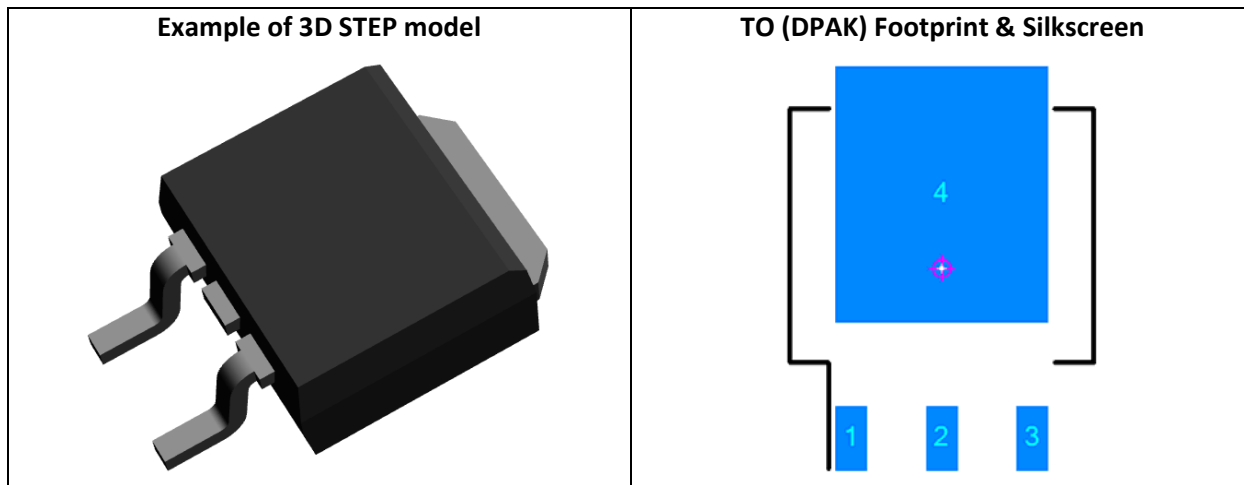


Small Outline Components, Flat Lead (unit: mm)

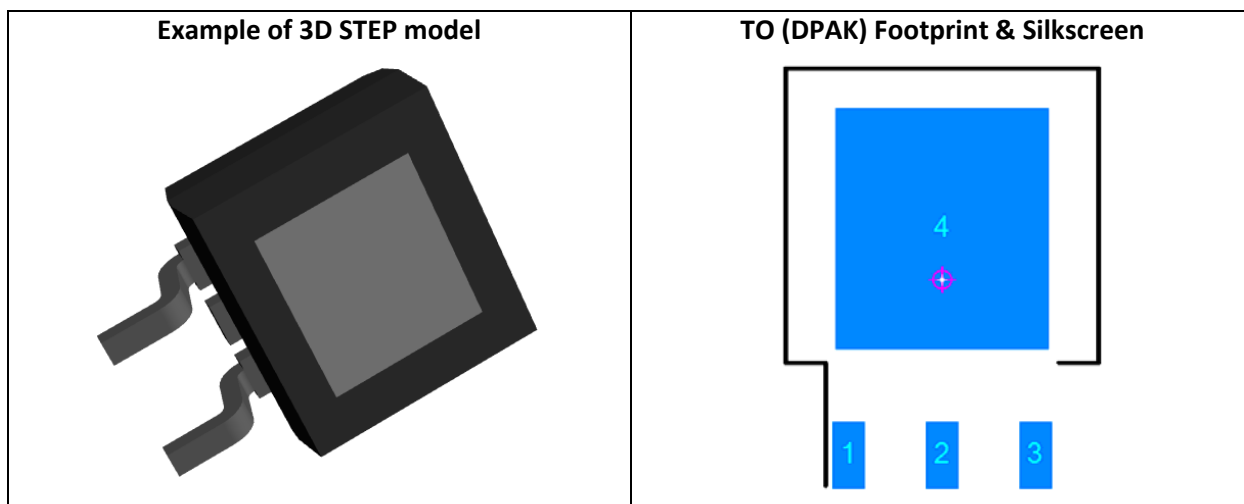
Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.30	0.20	0.10
Heel ( $J_H$ )	0.00	0.00	0.00
Side ( $J_S$ )	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess <sup>1</sup>	0.20	0.15	0.12



### DPAK with Extended Thermal Tab (TO)



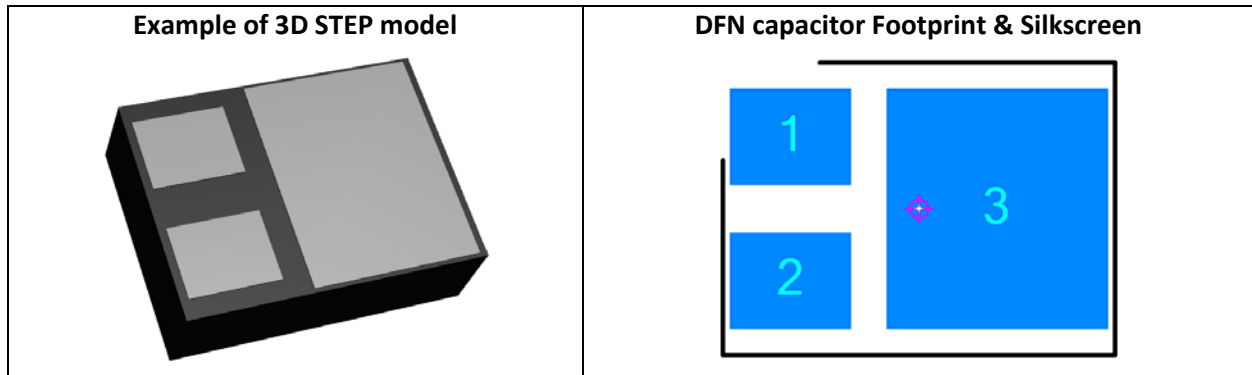
### DPAK with Under Body Thermal Tab (TO)



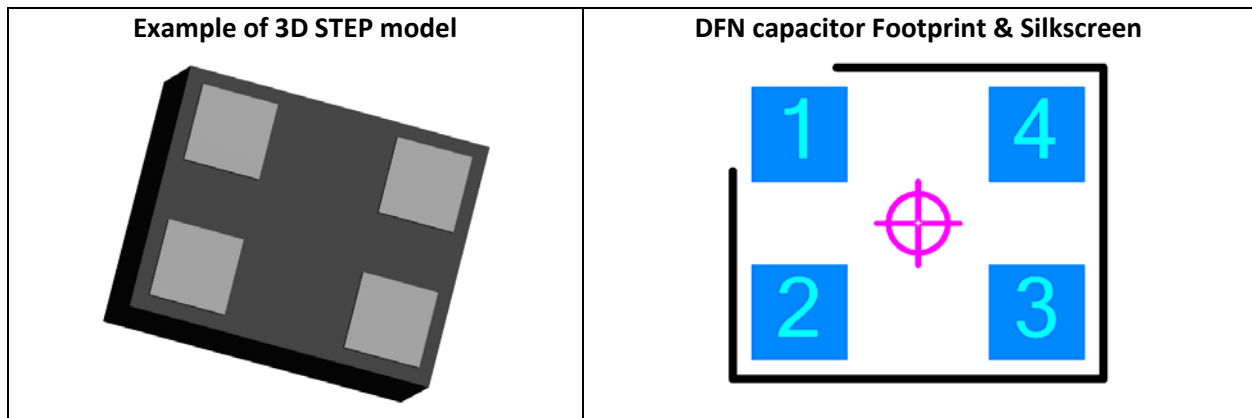
### Flat Lug Leads (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ )	0.45	0.35	0.25
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

### Transistor, Dual Flat No-lead (TRXDFN)



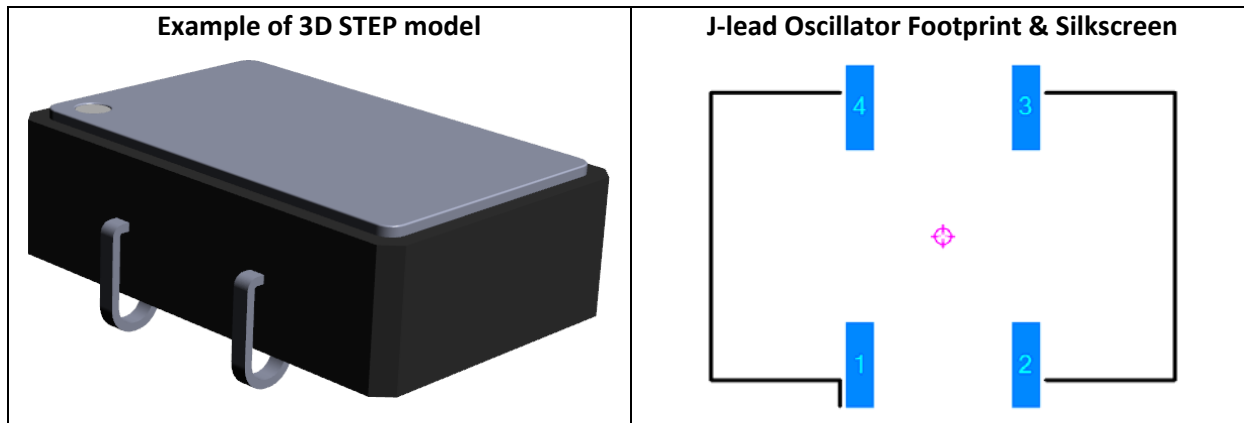
### Oscillator, Dual Flat No-lead (OSCDFN)



### Dual Flat No-lead (DFN) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Periphery	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

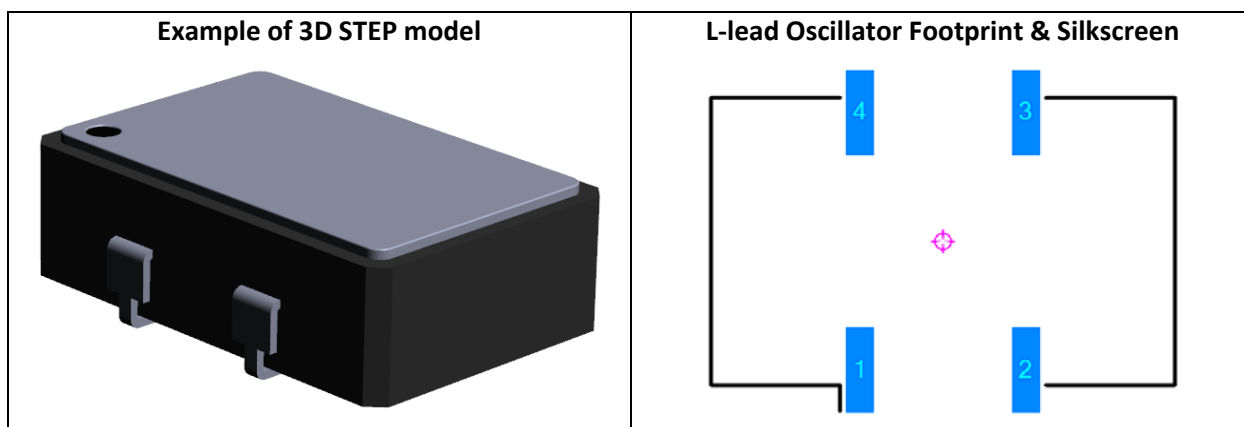
## Oscillator, J-Lead (OSCJ)



J Leads (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Heel ( $J_H$ ) (to find Z dim)	0.55	0.35	0.15
Toe ( $J_T$ ) (to find G dim)	0.10	0.00	-0.10
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

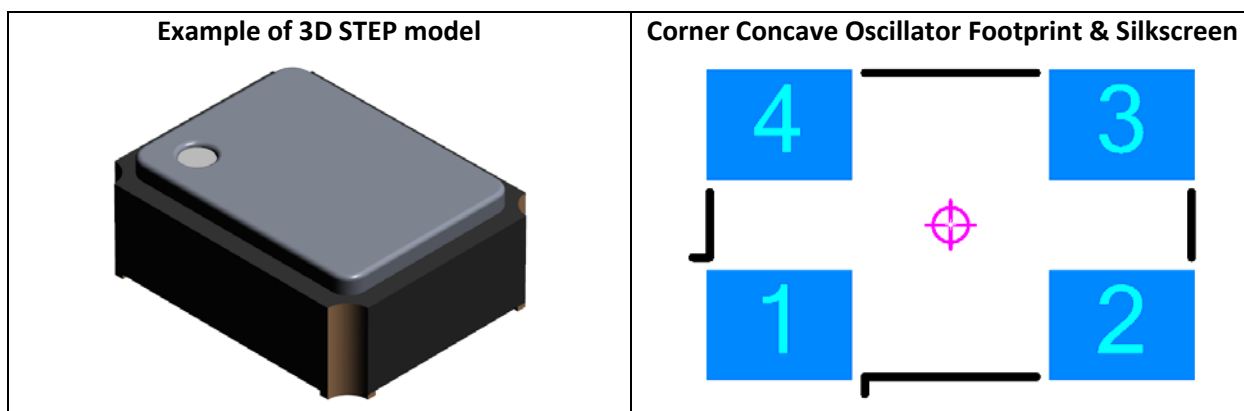
## Oscillator, L-Lead (OSCL)



### Inward Flat Ribbon L Lead (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ ) (to find G dim)	0.10	0.05	0.00
Heel ( $J_H$ ) (to find Z dim)	0.55	0.35	0.15
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

### Oscillator, Corner Concave (OSCCC)



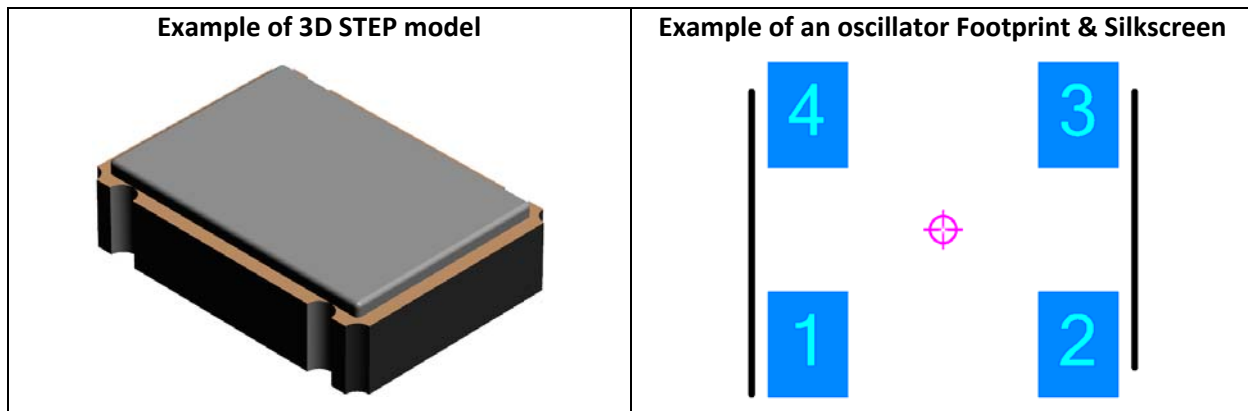
### Corner Concave Component Oscillator Lead Package (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Outer Periphery <sup>1</sup>	0.35	0.25	0.15
Inner Periphery <sup>2</sup>	0.10	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

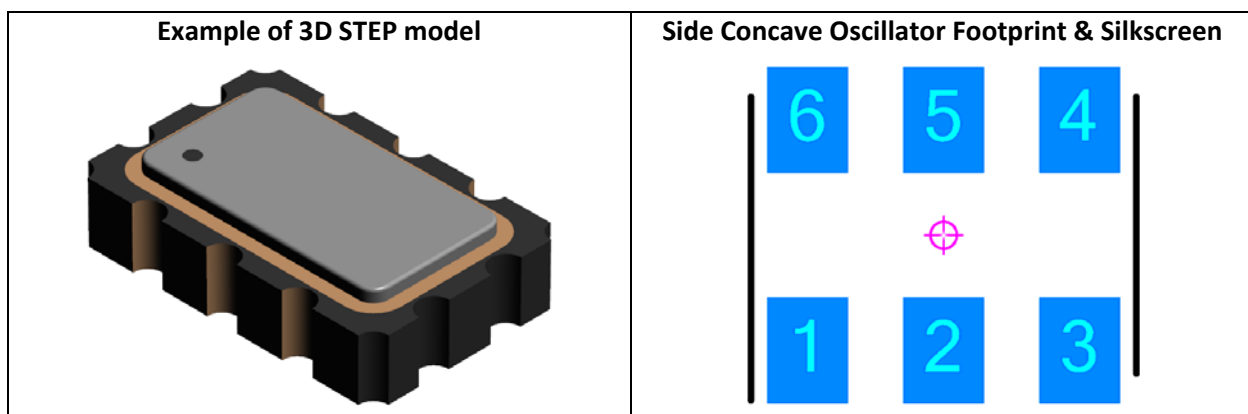
**Note 1.** The edge of the land associated with the outside of the component body.

**Note 2.** The edge of the land under the component body.

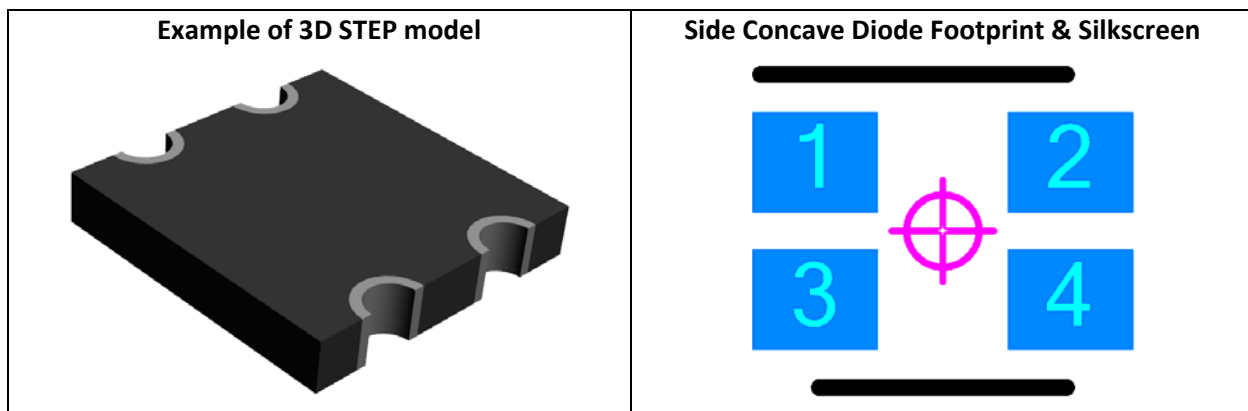
### Oscillator, Side Concave 4-pin (OSCSC)



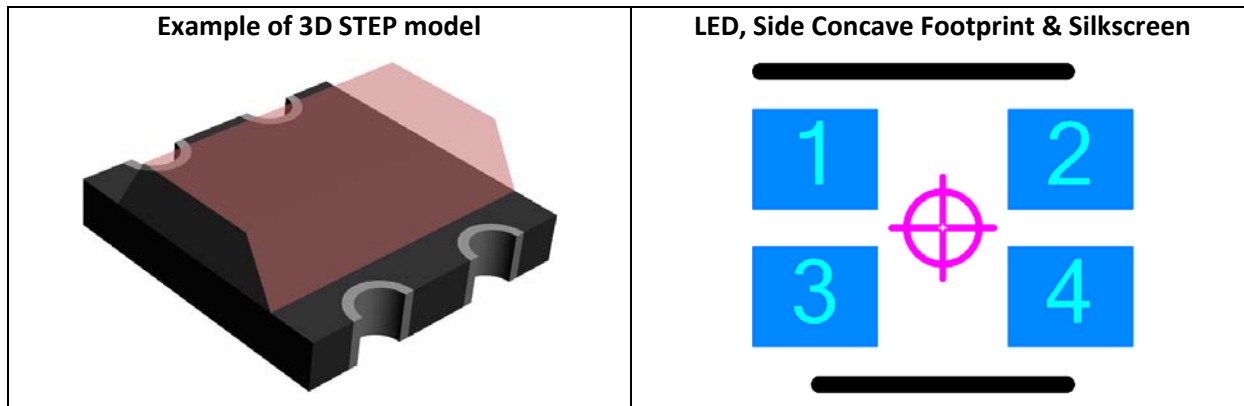
### Oscillator, Side Concave 6-pin (OSCSC)



### Diode, Side Concave 4-pin (DIO SC)



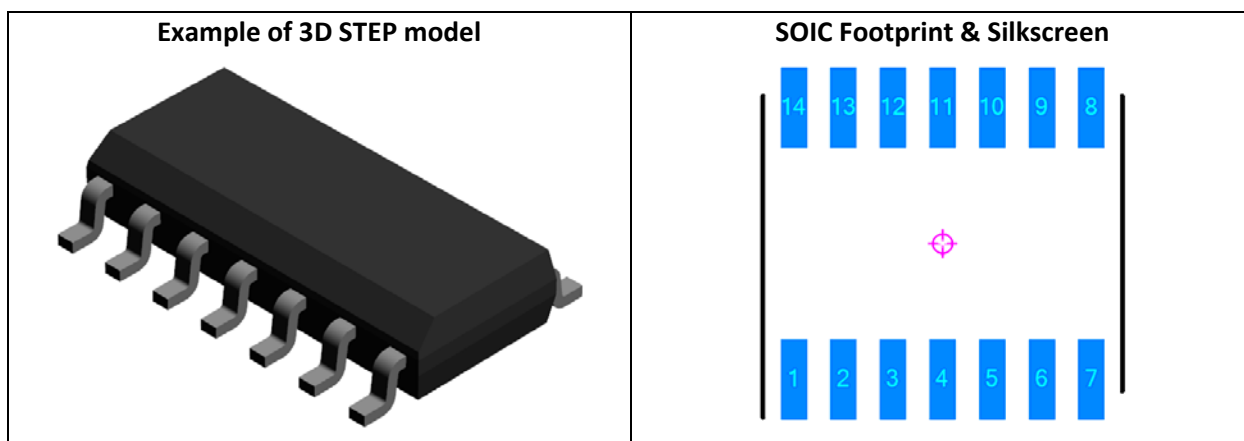
## LED, Side Concave 4-pin (LEDSC)



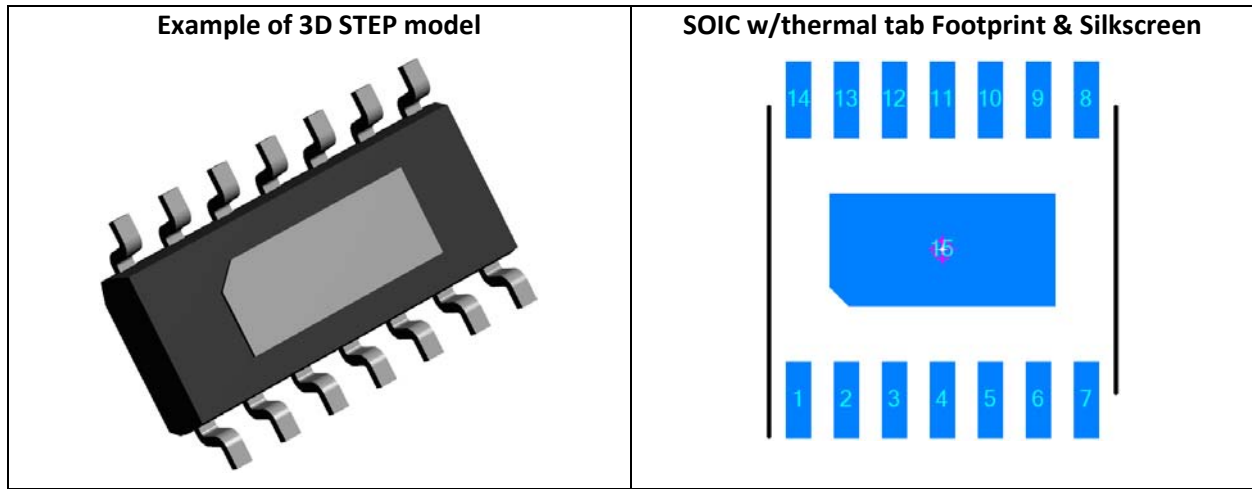
Side Lead Flat, Concave and Convex Terminal (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.45	0.35
Heel ( $J_H$ )	-0.05	-0.07	-0.10
Side ( $J_S$ )	-0.05	-0.07	-0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

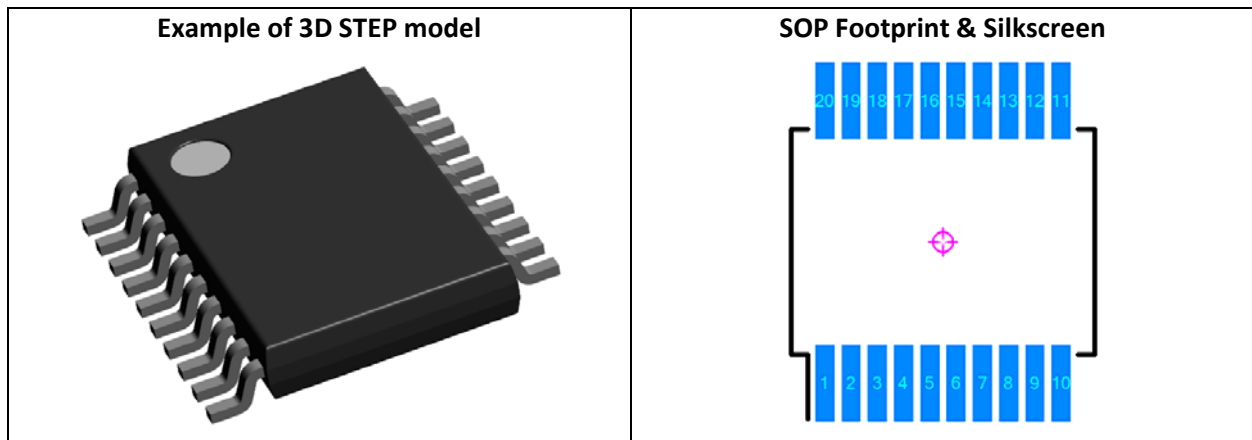
## Small Outline IC (SOIC)



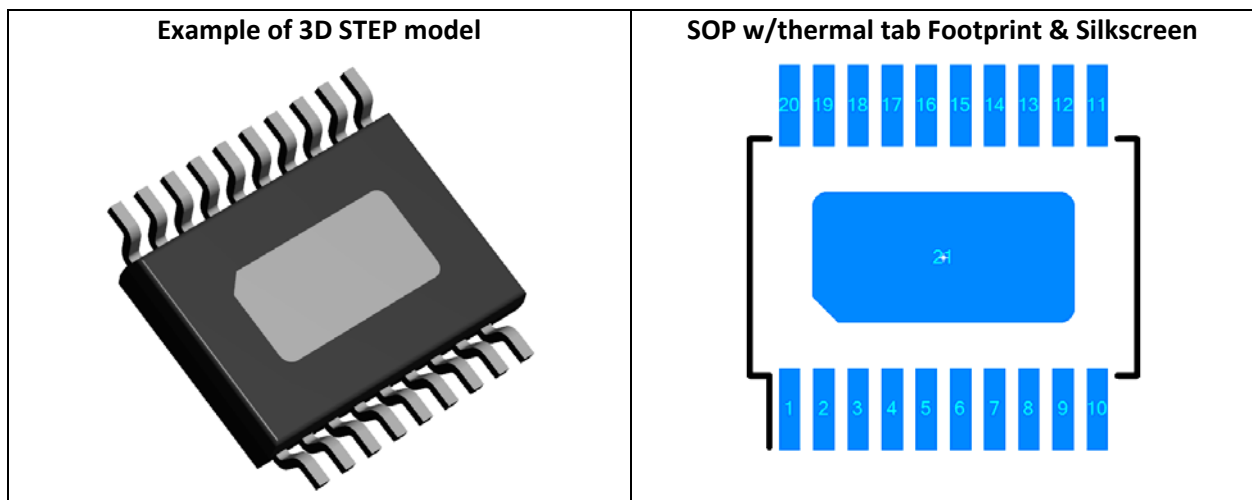
### Small Outline IC (SOIC) with Thermal Tab



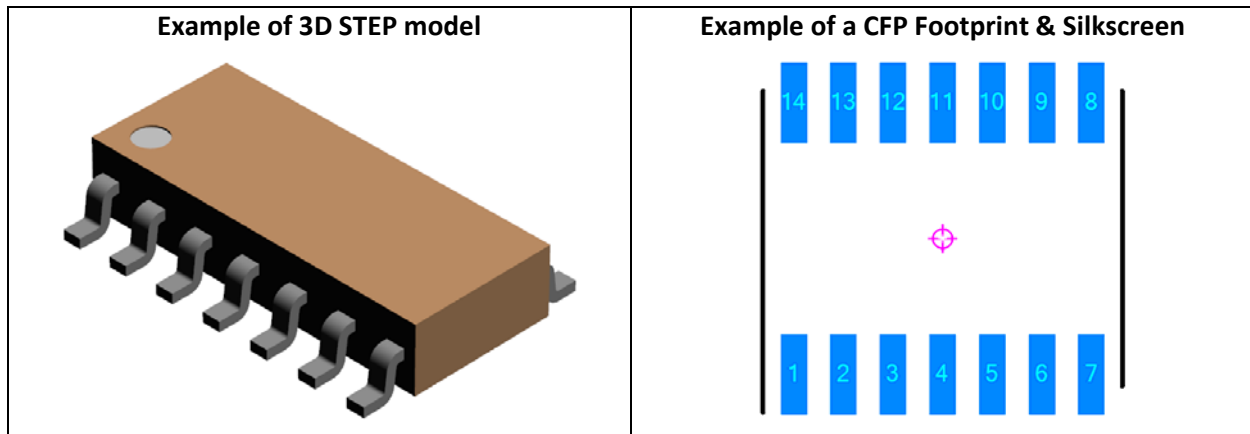
### Small Outline Package (SOP)



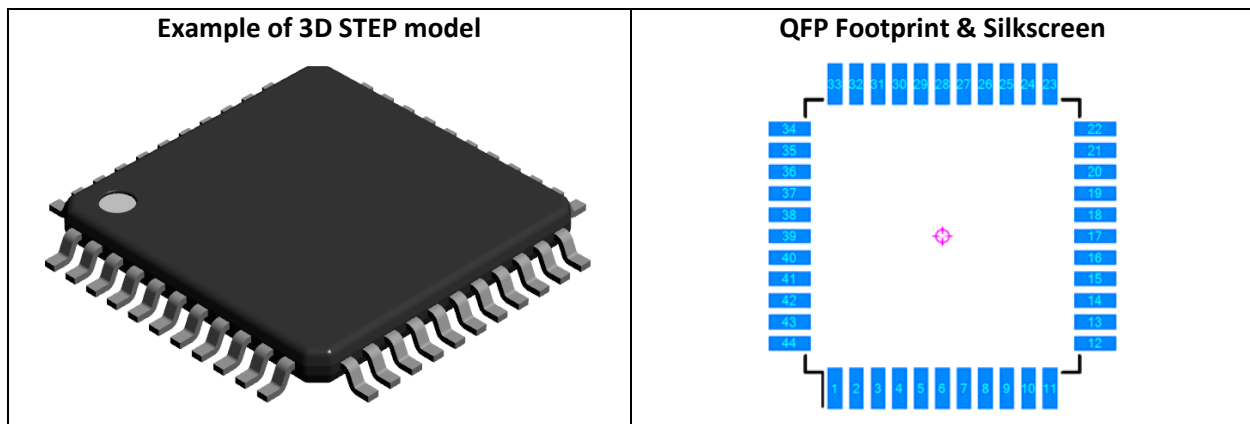
### Small Outline Package (SOP) with Thermal Tab



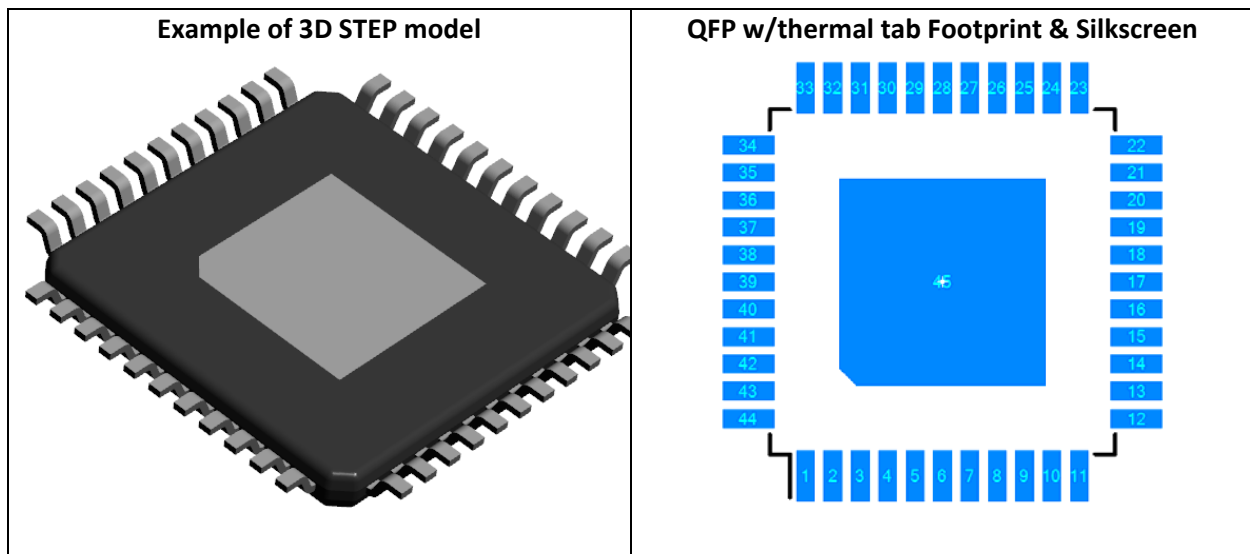
### Ceramic Flat Package (CFP)



### Quad Flat Package (QFP)

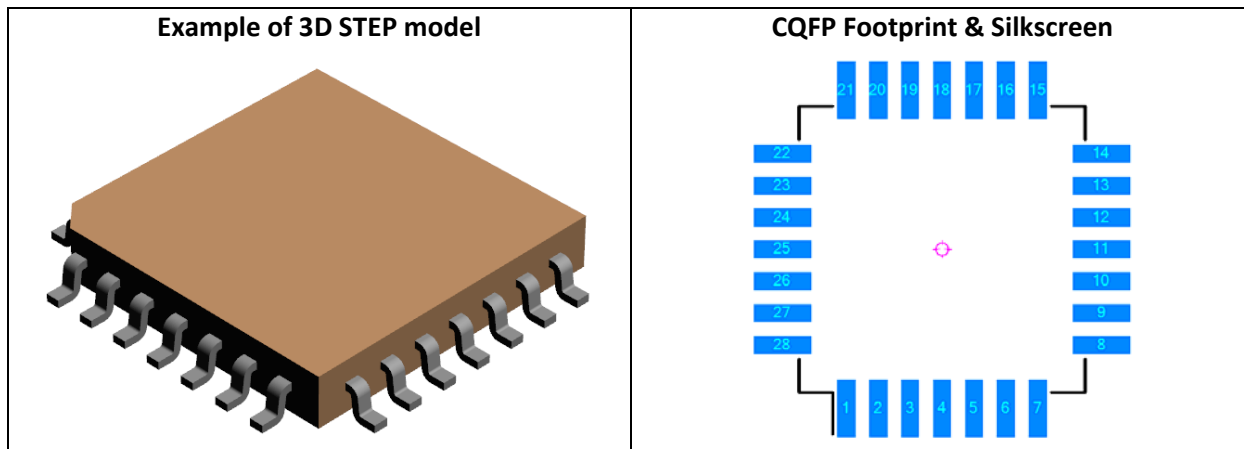


### Quad Flat Package (QFP) with Thermal Tab





## Ceramic Quad Flat Package (CQFP)



### Flat Ribbon L and Gull-Wing Leads (greater than 0.625 mm pitch) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ ) <sup>1</sup>	0.45	0.35	0.25
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

**Note 1.** For gull wing components where dimension  $S_{min}$  is less than or equal to dimension  $A_{max}$ , use the following heel fillet goals:

Density Level A - 0.25 mm

Density Level B - 0.15 mm

Density Level C - 0.05 mm

**Note 2.** This does not apply to gull wing components where the lead terminals have a tolerance  $T_1$  that is greater than 0.5 mm.

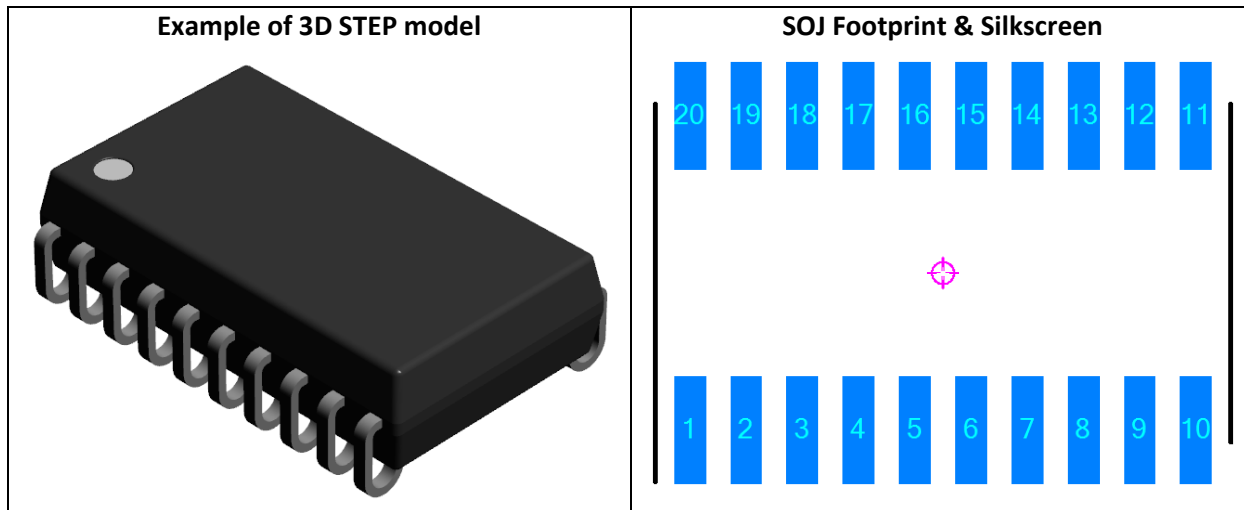
### Flat Ribbon L and Gull-Wing Leads (less than or equal to 0.625 mm pitch) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.55	0.35	0.15
Heel ( $J_H$ ) <sup>1</sup>	0.45	0.35	0.25
Side ( $J_S$ )	0.01	-0.02	-0.04
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

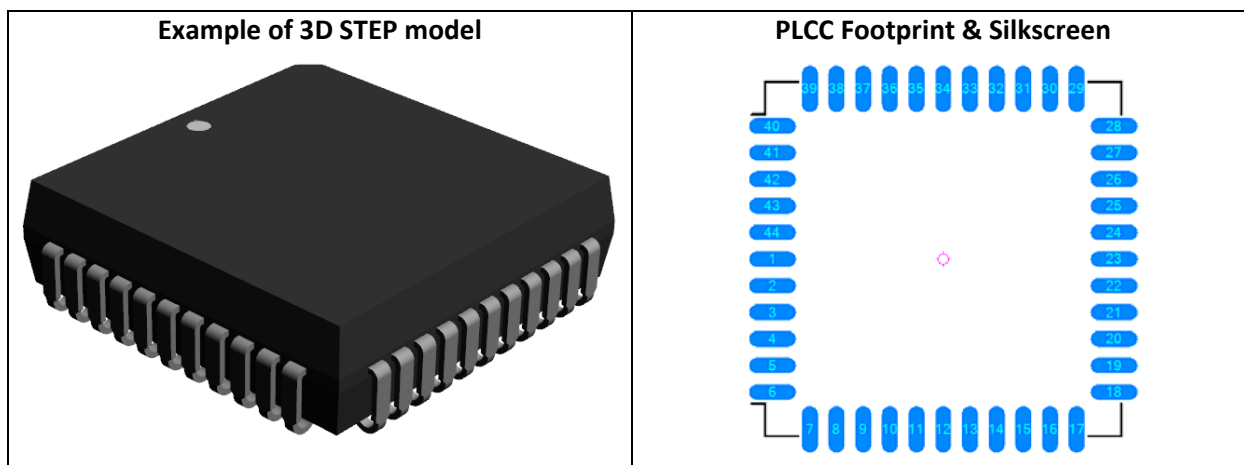
**Note 1.** For gull wing components where dimension  $S_{min}$  is less than or equal to dimension  $A_{max}$ , use the following heel fillet goals:

Density Level A - 0.25 mm

## Small Outline J-Lead (SOJ)



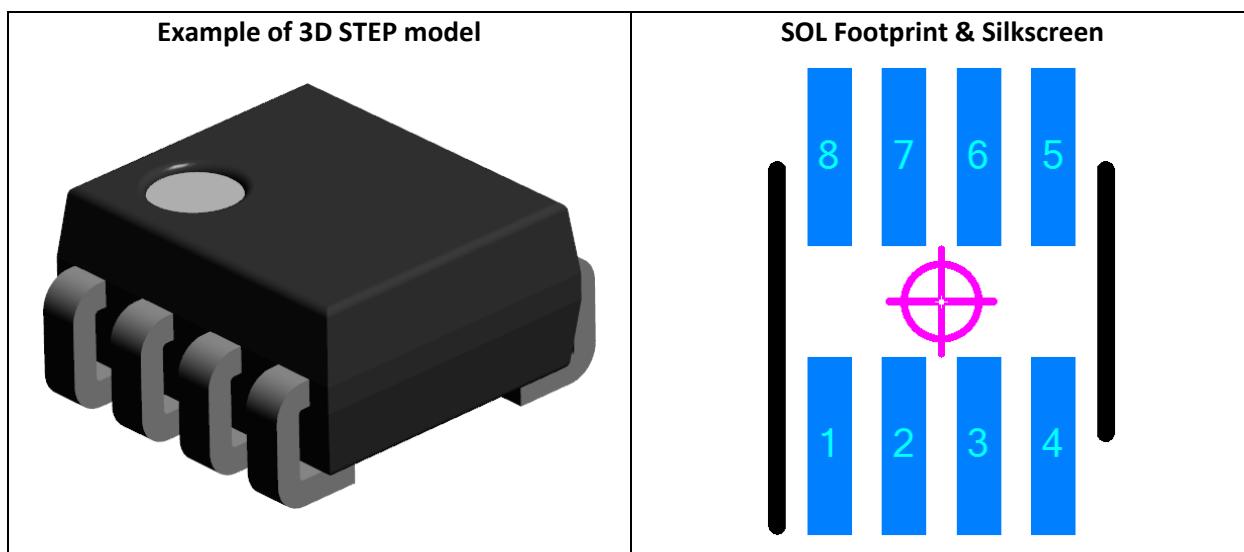
## Plastic Leaded Chip Carrier (PLCC)



### Small Outline J-Lead (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Heel ( $J_H$ ) (to find Z dim)	0.55	0.35	0.15
Toe ( $J_T$ ) (to find G dim)	0.10	0.00	-0.10
Side ( $J_S$ )	0.05	0.03	0.01
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

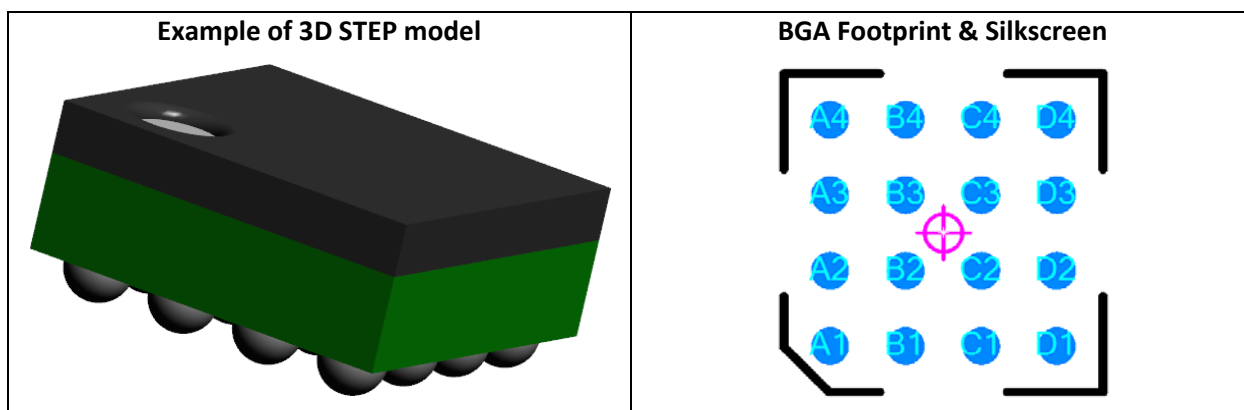
## Small Outline L-Lead (SOL)



Small Outline L-Lead (SOL) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ ) (to find G dim)	0.10	0.00	-0.10
Heel ( $J_H$ ) (to find Z dim)	0.55	0.35	0.15
Side ( $J_S$ )	0.01	-0.02	-0.04
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

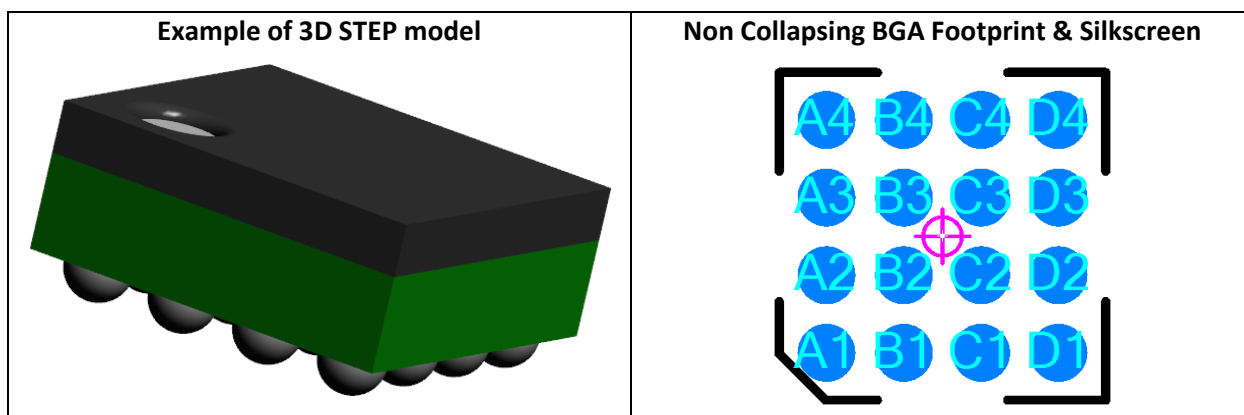
### Collapsing Ball Grid Array (BGA)



### Collapsing Ball Grid Array (BGA) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Periphery	25% reduction below nominal ball diameter	20% reduction below nominal ball diameter	15% reduction below nominal ball diameter
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	1.00	0.50	0.25

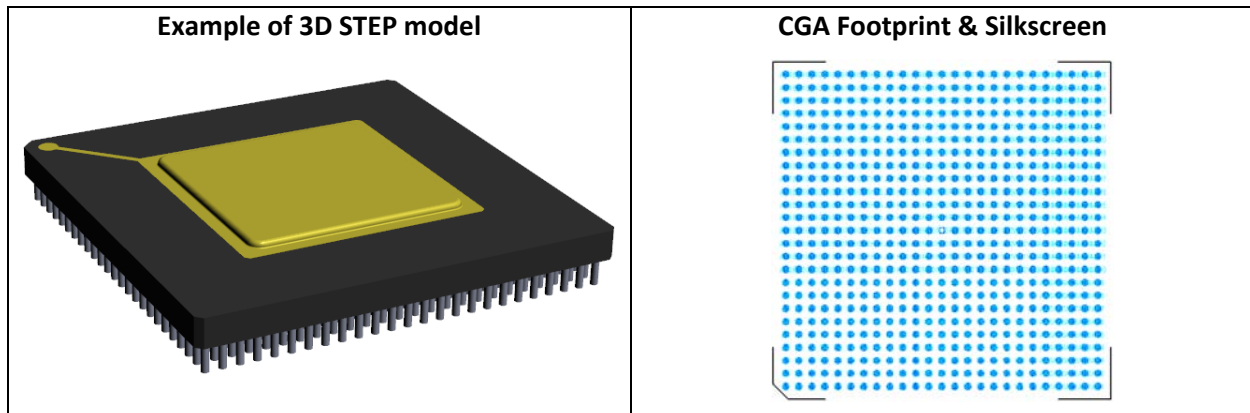
### Non-collapsing Ball Grid Array (BGAN)



### Non-collapsing Ball Grid Array (BGA) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Periphery	15% increase above the nominal ball or column diameter	10% increase above the nominal ball or column diameter	5% increase above the nominal ball or column diameter
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	1.00	0.50	0.25

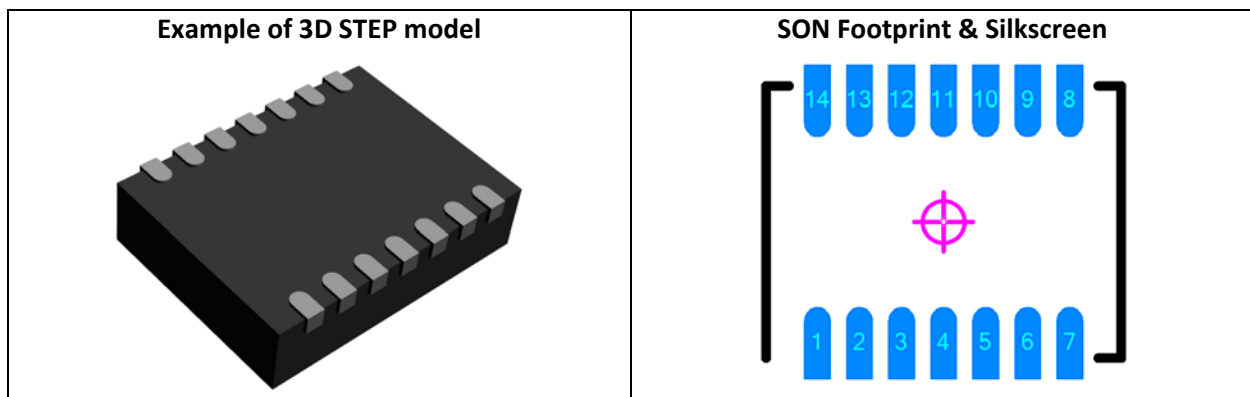
## Column Grid Array (CGA)



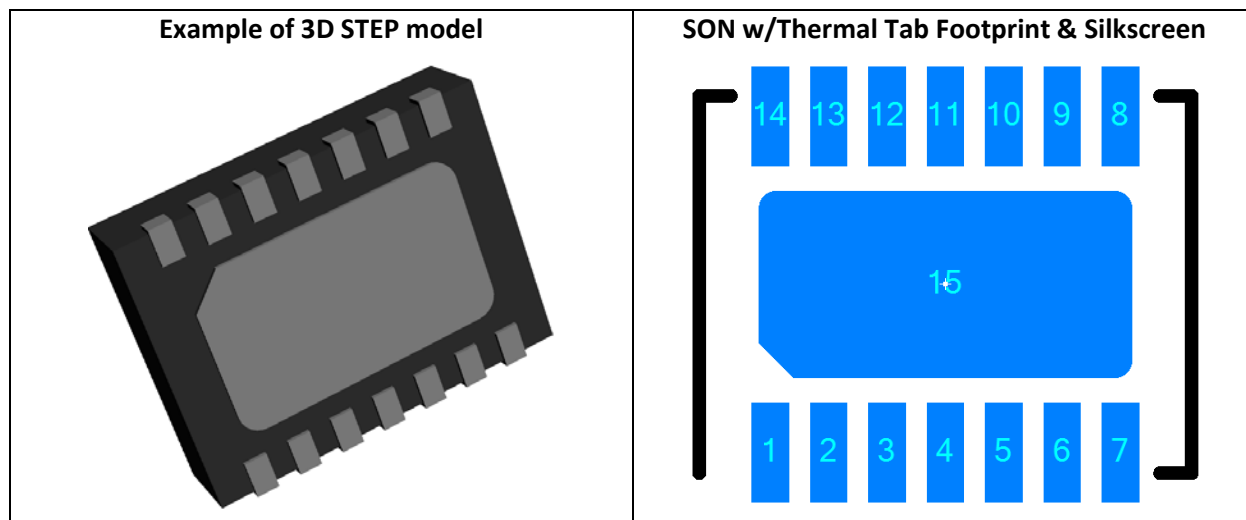
## Column Grid Array (CGA)

Lead Part	Median (Nominal) Density Level B
Periphery	0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03
Courtyard excess	1.00

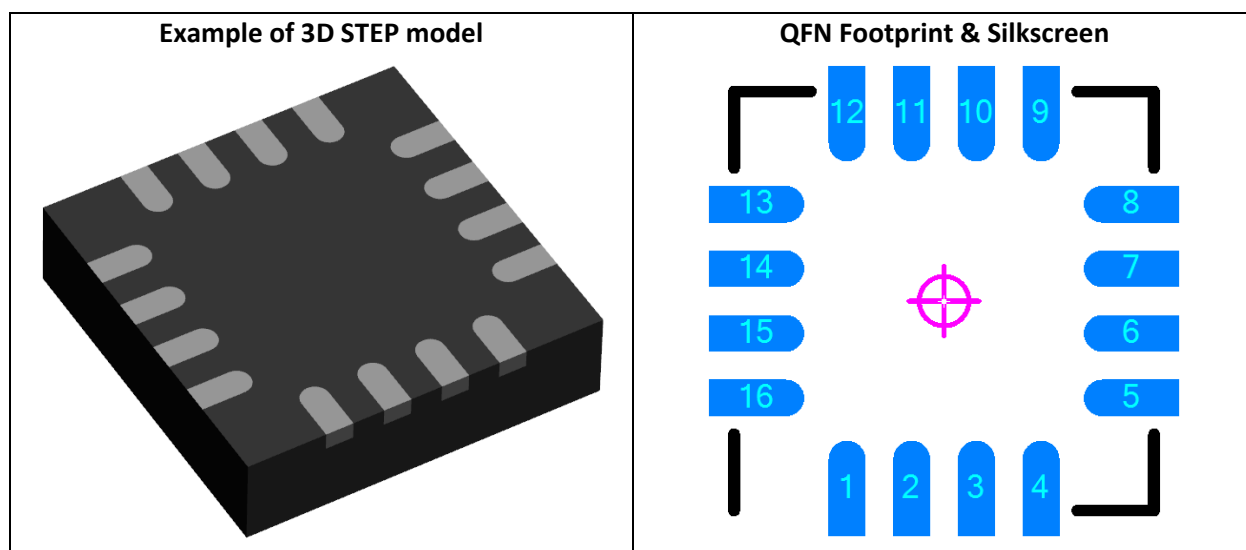
## Small Outline No-lead (SON)



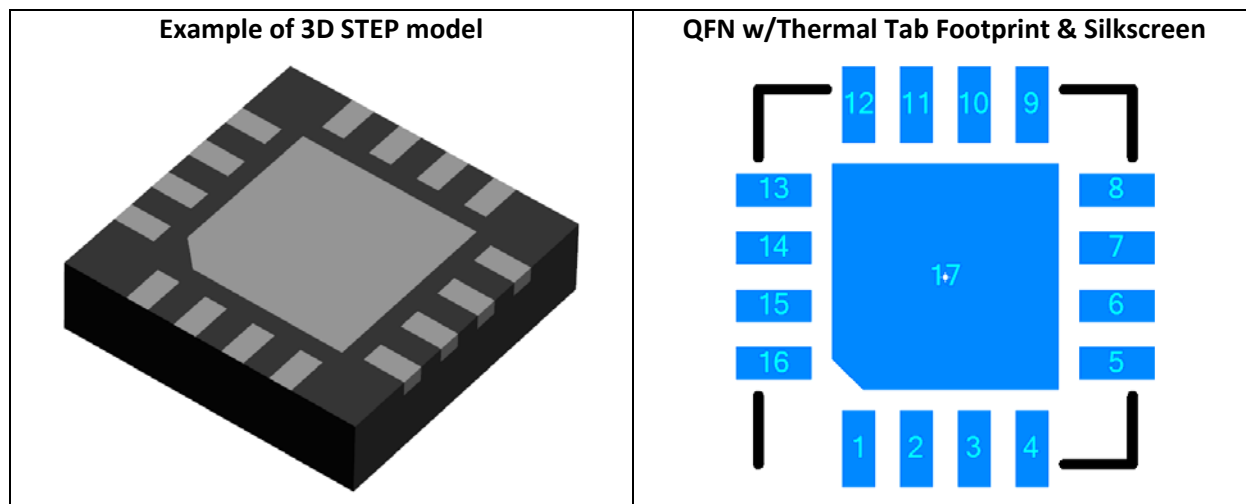
## Small Outline No-lead (SON) with Thermal Tab



## Quad Flat No-lead (QFN)



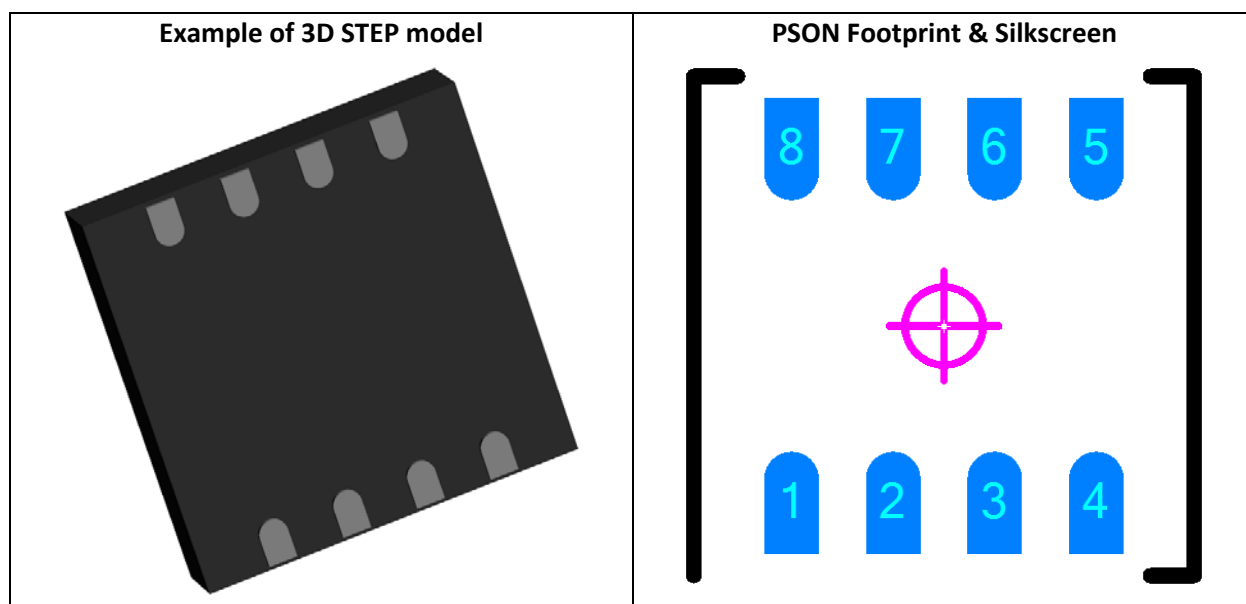
## Quad Flat No-lead (QFN) with Thermal Tab



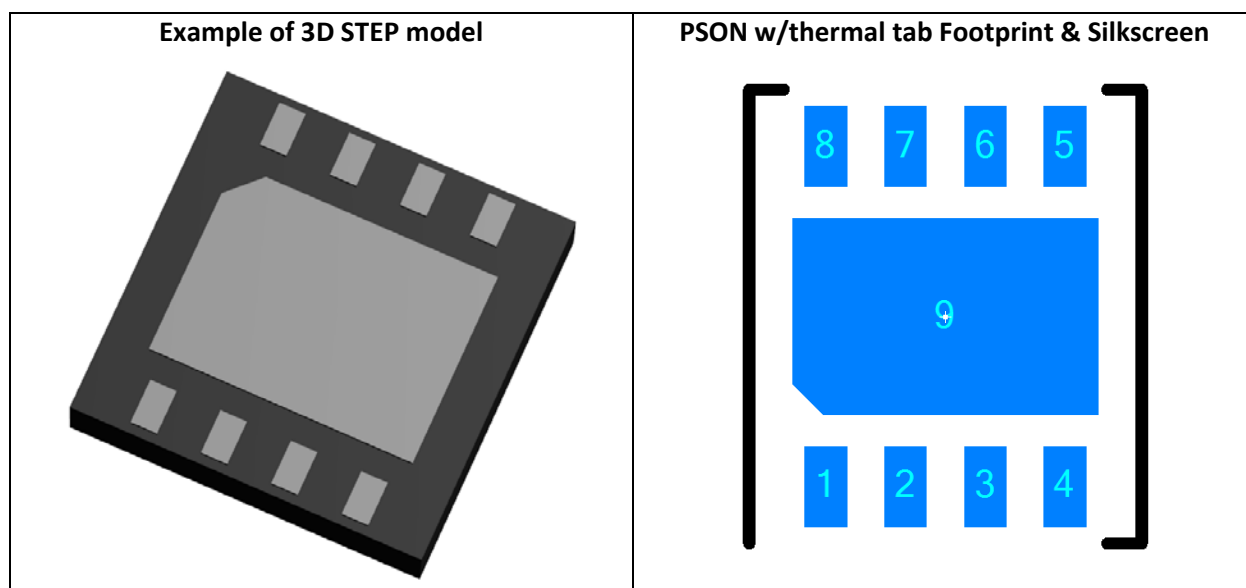
Small Outline No-Lead and Quad Flat No-Lead (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Toe ( $J_T$ )	0.40	0.30	0.20
Heel ( $J_H$ )	0.00	0.00	0.00
Side ( $J_S$ )	-0.04	-0.04	-0.04
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

## Pull-back Small Outline No-lead (PSON)

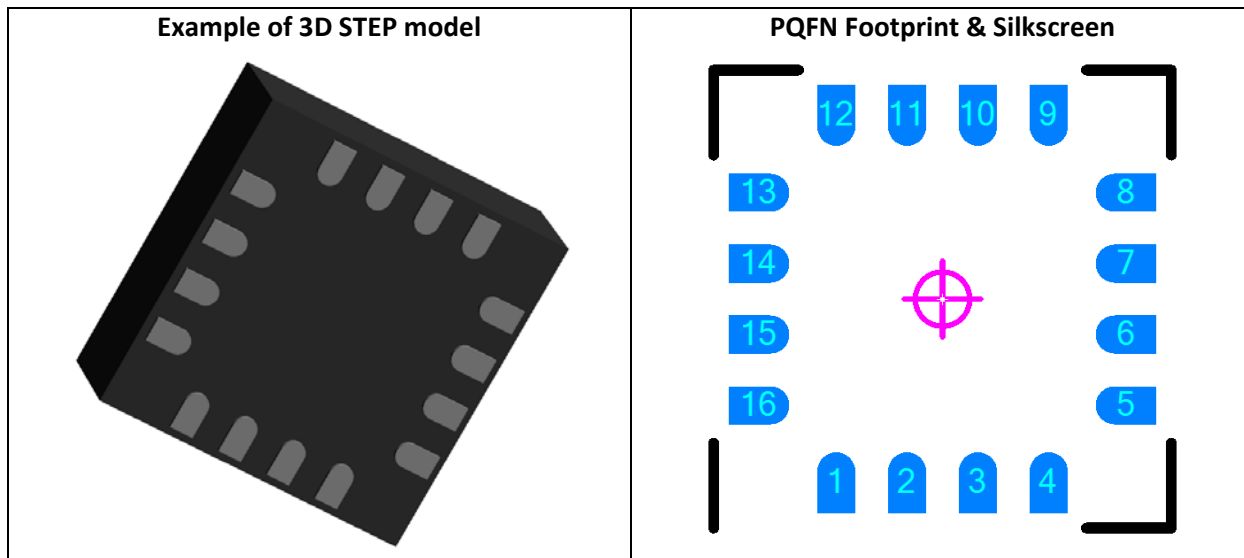


## Pull-back Small Outline No-lead (PSON) with Thermal Tab

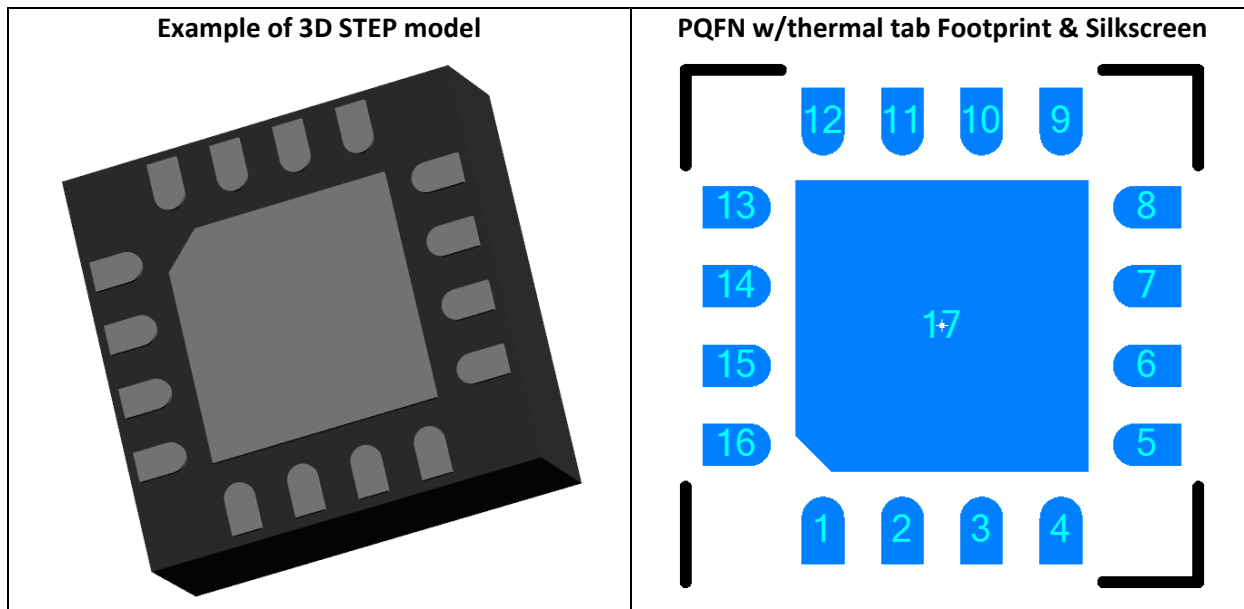




### Pull-back Quad Flat No-lead (PQFN)



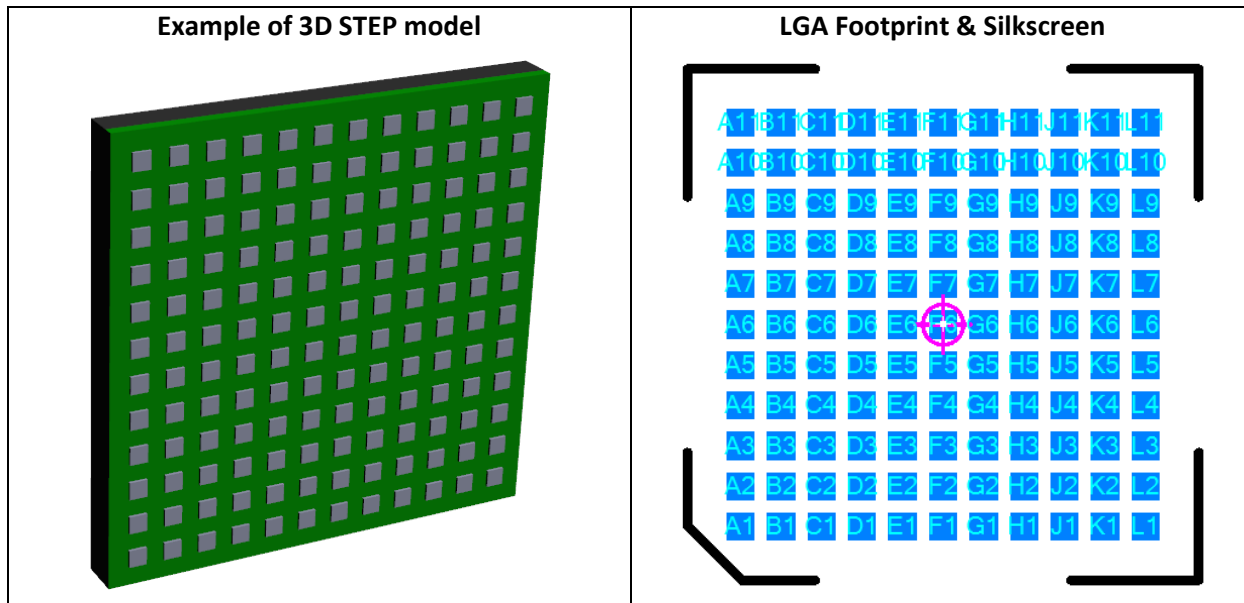
### Pull-back Quad Flat No-lead (PQFN) with Thermal Tab



### Small Outline No-Lead and Quad Flat No-Lead with Pullback (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Periphery	0.05	0.00	-0.05
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.50	0.25	0.12

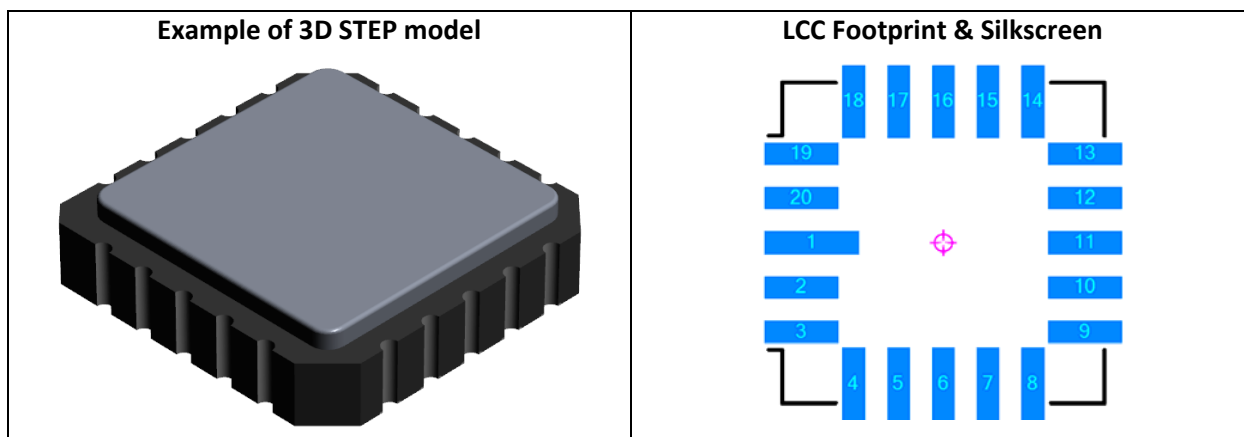
## Land Grid Array (LGA)



### Land Grid Array (LGA) (unit: mm)

Lead Part	Median (Nominal) Density Level B
Periphery	0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03
Courtyard excess	1.00

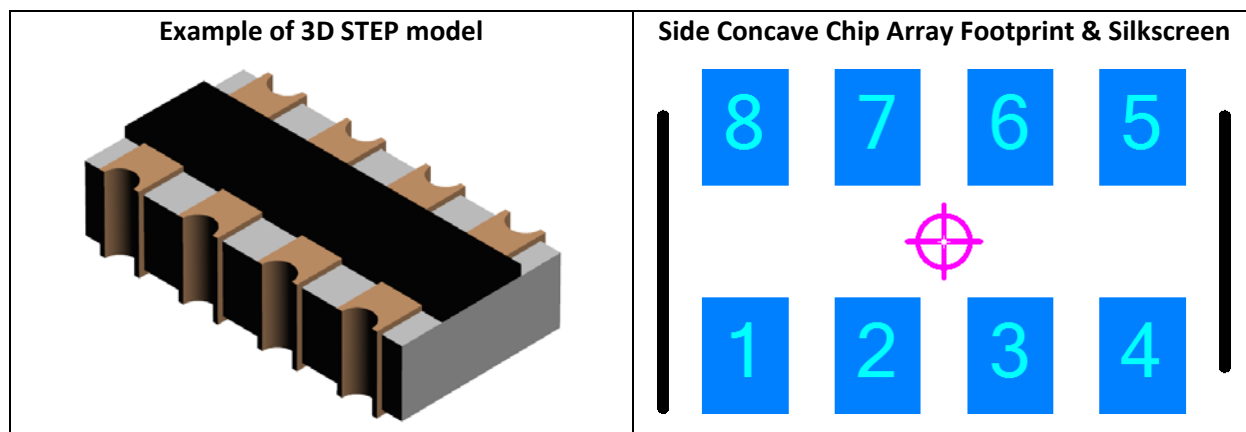
## Leadless Chip Carrier (LCC)



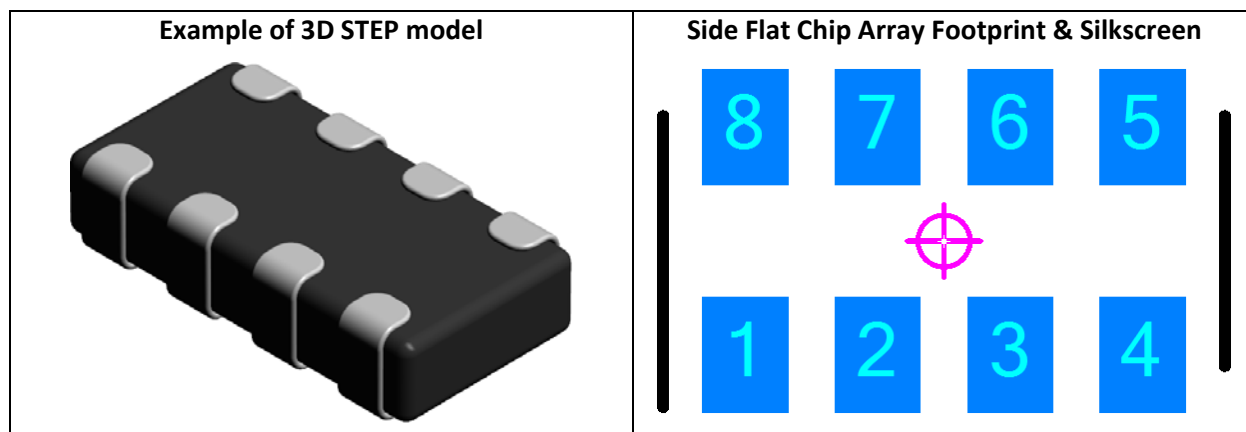
### Leadless Chip Carrier (LCC) (unit: mm)

Lead Part	Maximum (Most) Density Level A	Median (Nominal) Density Level B	Minimum (Least) Density Level C
Heel ( $J_H$ ) (to find Z dim)	0.65	0.55	0.45
Toe ( $J_T$ ) (to find G dim)	0.25	0.15	0.05
Side ( $J_S$ )	0.05	-0.05	-0.15
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.05, 1.10, 1.15		
Courtyard excess	0.5	0.25	0.1

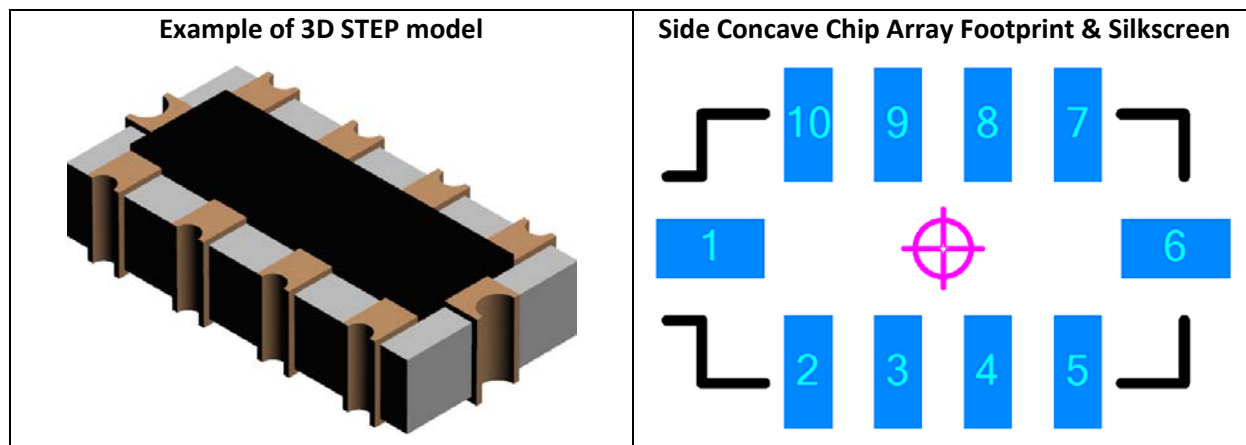
### Resistor, Side Concave Chip Array (RESCAV)



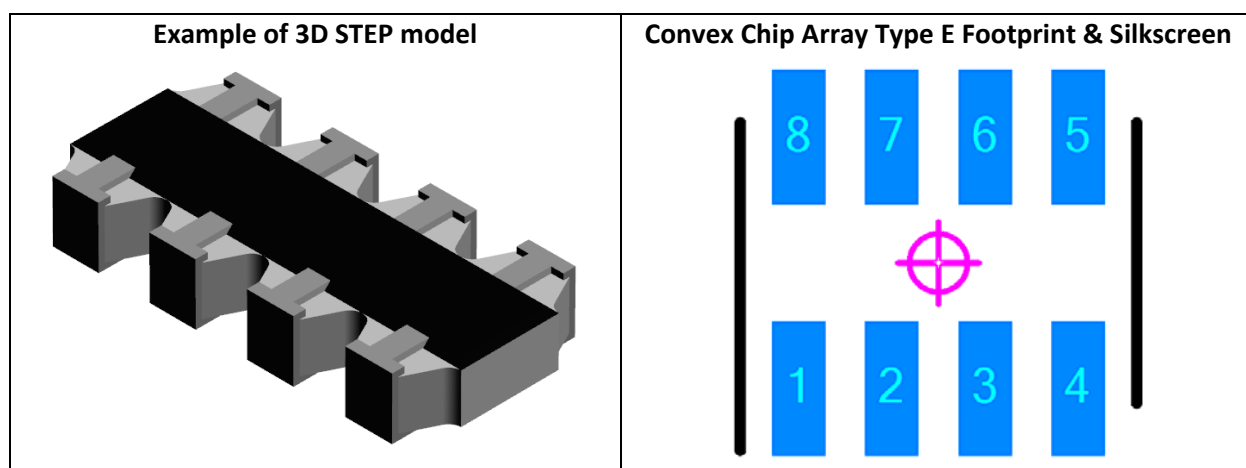
### Inductor, Side Flat Chip Array (INDCAV)



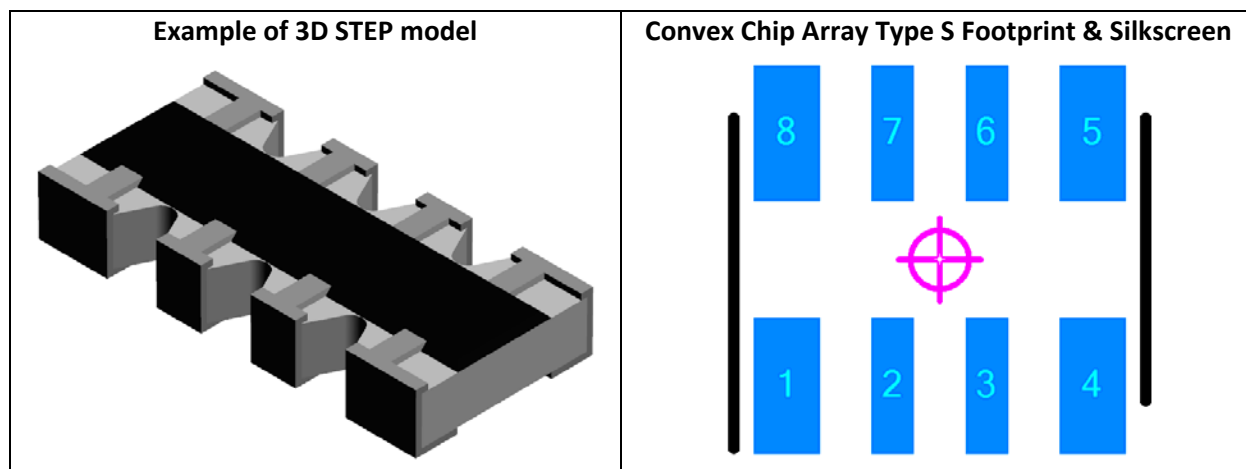
### Resistor, Side Concave Chip Array 4-Sided (RESCAV)



### Resistor, Convex Chip Array Type E (RESCAXE)



### Resistor, Convex Chip Array Type S (RESCAXS)



**Side Flat/Concave/Convex Terminals (unit: mm)**

<b>Lead Part</b>	<b>Maximum (Most) Density Level A</b>	<b>Median (Nominal) Density Level B</b>	<b>Minimum (Least) Density Level C</b>
Toe ( $J_T$ )	0.55	0.45	0.35
Heel ( $J_H$ )	-0.05	-0.07	-0.10
Side ( $J_S$ )	-0.05	-0.07	-0.10
Round-off factor	Round off to the nearest two place decimal, i.e., 1.00, 1.01, 1.02, 1.03		
Courtyard excess	0.5	0.25	0.12