
CN24C32

I²C-Compatible (2-Wire) Serial E²PROM 32-Kbits (4,096 x 8)

Description

The CN24C32 is an industrial standard electrically erasable programmable read only memory (E²PROM) device that utilizes the industrial standard 2-wire interface for communications. The CN24C32 contains a memory array of 32K bits (4,096x8), which is organized in 32-byte per page.

The E²PROM operates in a wide voltage range from 1.7V to 5.5V, which fits most application. The product provides low-power operations and low standby current. The CN24C32 is compatible to the standard 2-wire bus protocol. The simple bus consists of Serial Clock (SCL) and Serial Data (SDA) signals.

The CN24C32 also has a Write Protect function via WP pin to cease from overwriting the data stored inside the memory array. In order to refrain the state machine from entering into a wrong state during power-up sequence or a power toggle on-off condition, a POR circuit is embedded. During power-up, the device does not respond to any instructions until the supply voltage (V_{CC}) has reached an acceptable stable level above the reset threshold voltage. Once V_{CC} drops below the POR threshold, the device is reset and enters into the Standby mode. This would also avoid any inadvertent Write operations during power-up stage. During power-down process, the device will enter into standby mode, once V_{CC} drops below the POR threshold voltage. In addition, the device will be in standby mode after receiving the Stop command, provided that no internal write operation is in progress. Nevertheless, it is illegal to send a command unless the V_{CC} is within its operating level.

Features

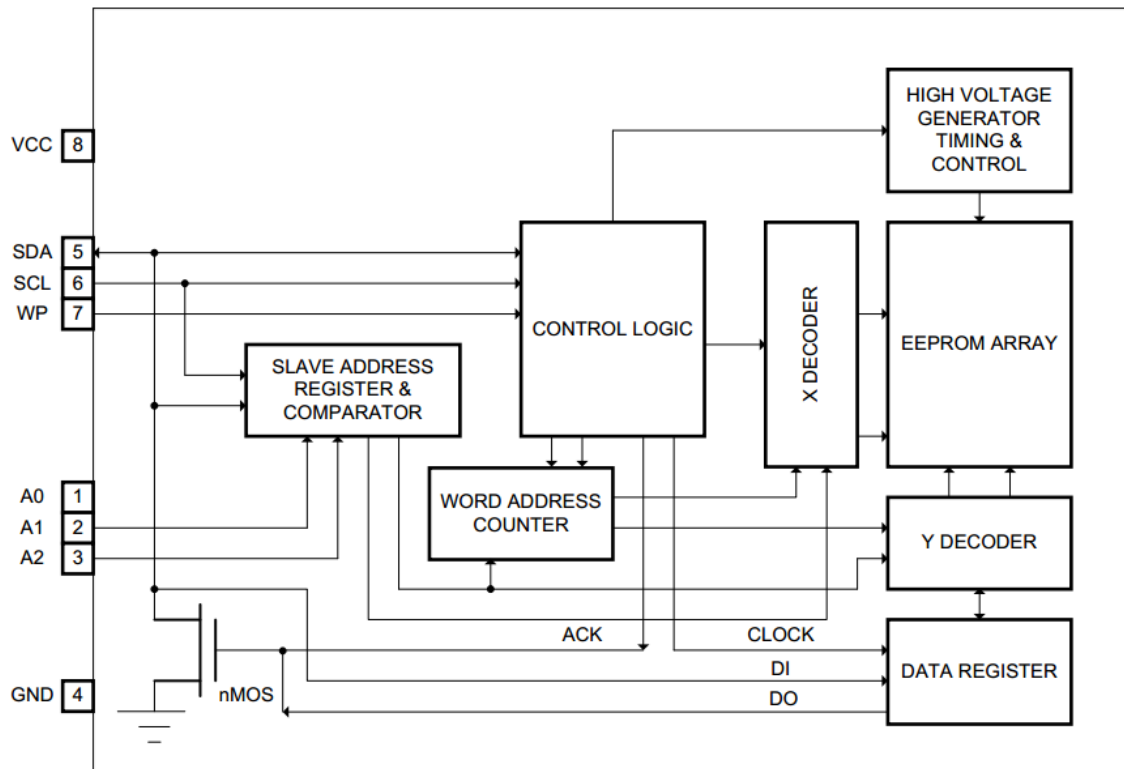
- Compatible with all I²C bi-directional data transfer protocol
 - Memory array:
 - 32 Kbits (4Kbytes) of E²PROM
 - Page size: 32 bytes
 - Additional Write lockable page
 - Single supply voltage and high speed:
 - 1.7V-5.5V
 - 100KHz, 400KHz and 1MHz
- Random and sequential Read modes
- Write:
 - Byte Write within 3 ms
 - Page Write within 3 ms
 - Partial Page Writes Allowed
 - Write Protect Pin for Hardware Data Protection
 - Schmitt Trigger, Filtered Inputs for Noise Suppression
 - High-reliability
 - Endurance: 1 Million Write Cycles
 - Data Retention: 100 Years
 - Enhanced ESD/Latch-up protection
 - HBM 8000V

Package

- SOP-8L/TSSOP-8L/MSOP-8L
- DFN-8L
- SOT23-5/TSOT23-5L

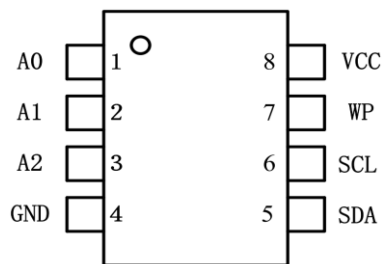
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2. Block Diagram

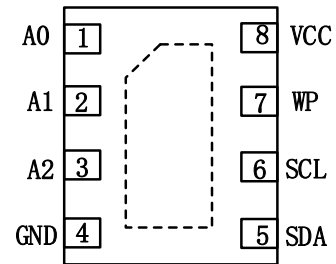


3. Pin Information

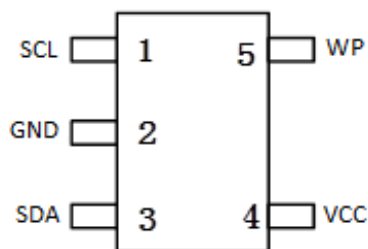
◆ Pin Assignments



SOP-8L/TSSOP-8L/MSOP-8L(Top View)



DFN-8L(Top View)

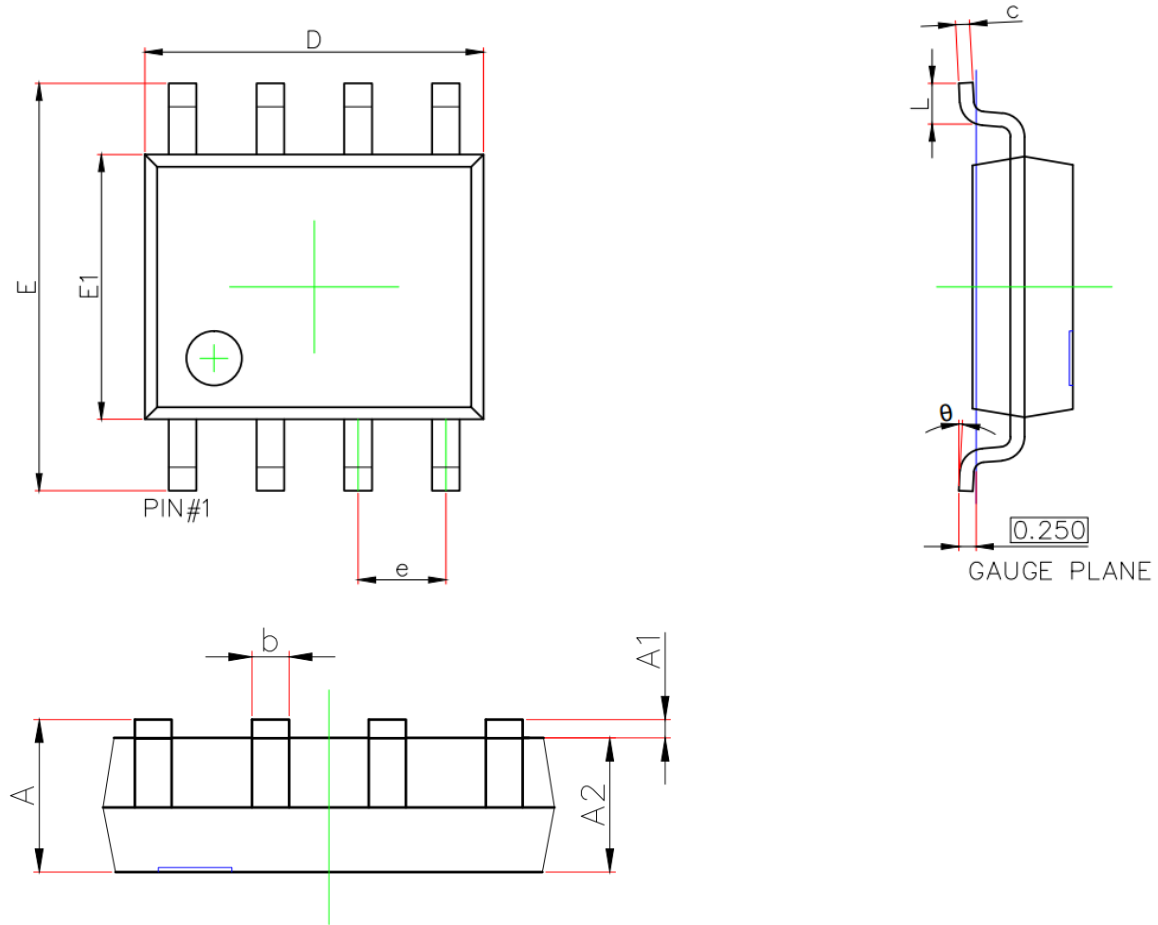


SOT23-5L/TSOT23-5L (Top View)

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10 Package information

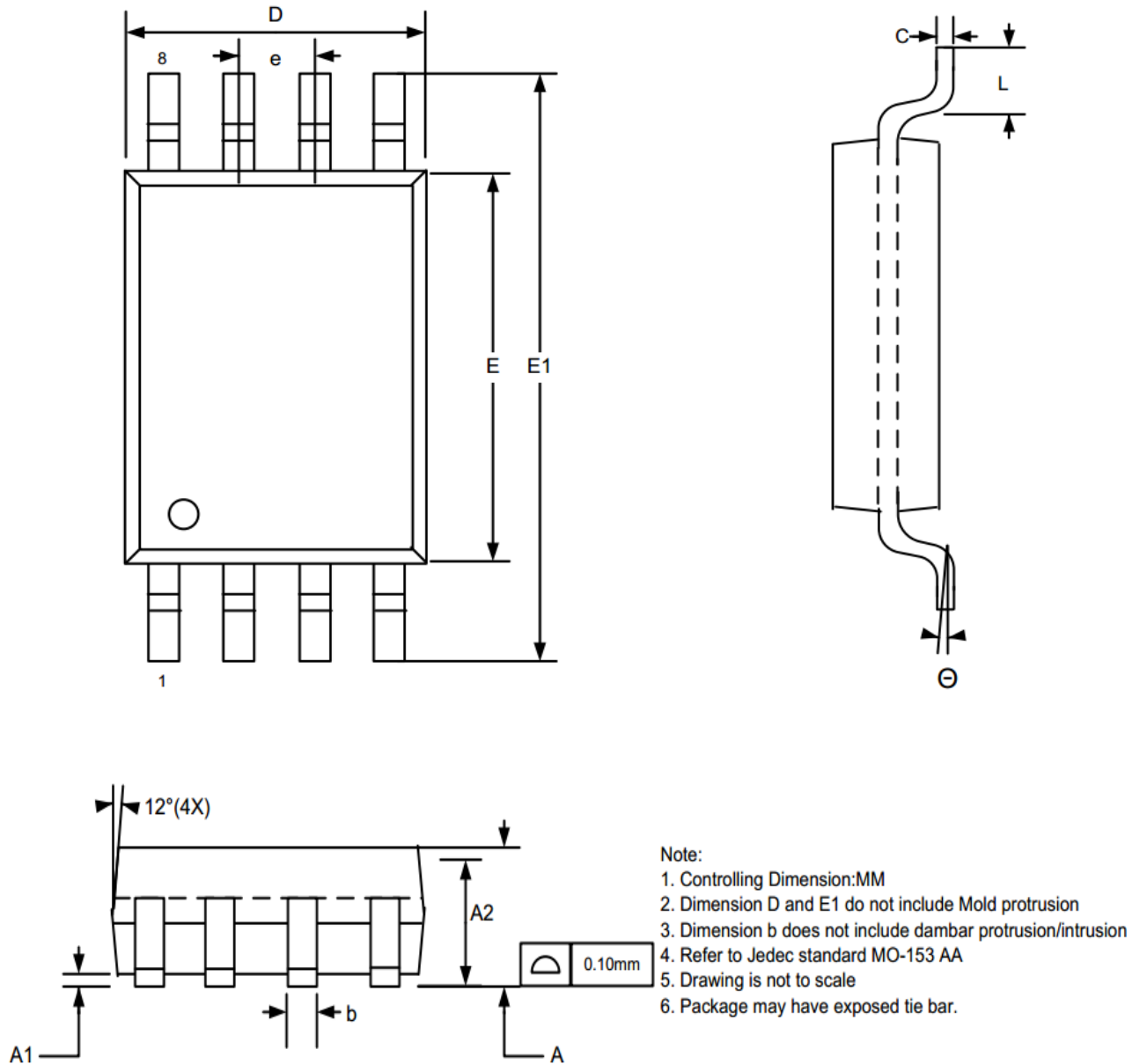
10.1 150mil SOP-8L Package Outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.170	0.250	0.007	0.010
D	4.800	5.000	0.189	0.197
e	1.270 (BSC)		0.050 (BSC)	
E	5.800	6.200	0.228	0.244
E1	3.800	4.000	0.150	0.157
L	0.400	1.270	0.016	0.050
θ	0°	8°	0°	8°

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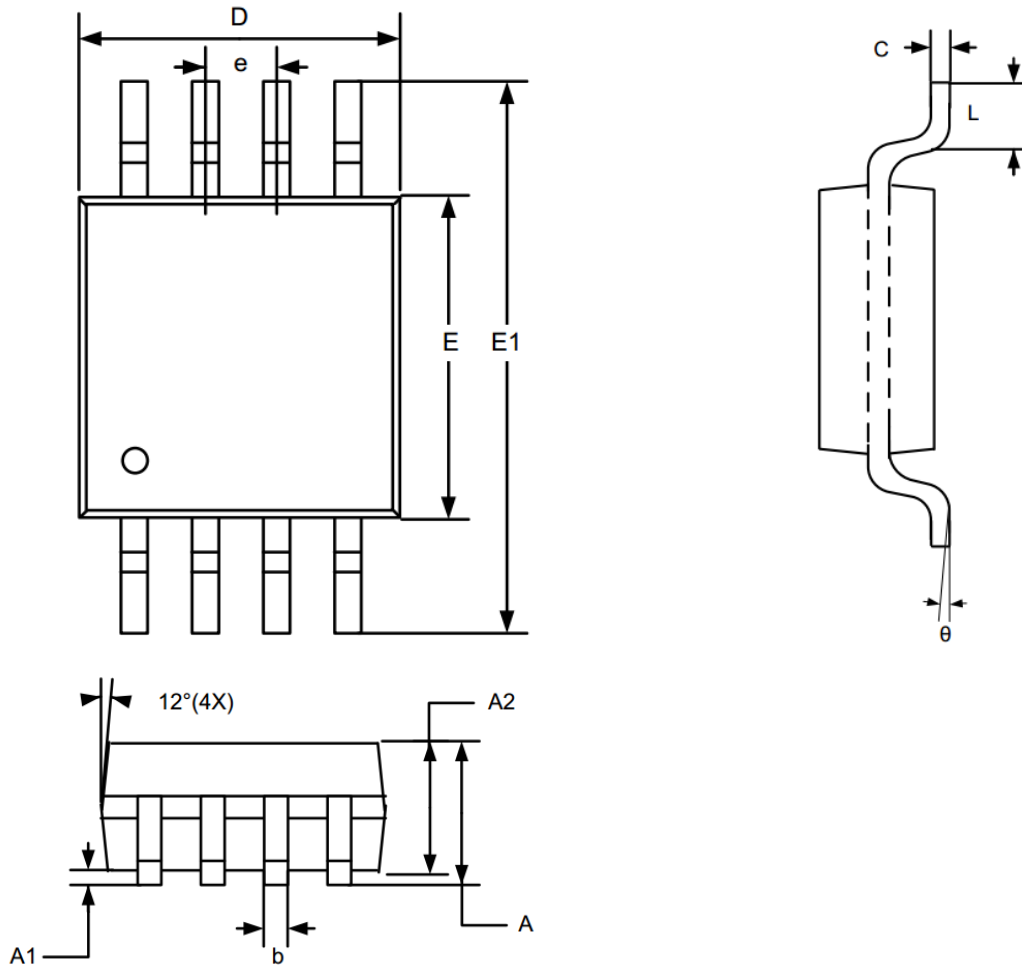
10.2 TSSOP-8L Package Outline



SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	--	--	1.20	--	--	0.047
A1	0.05	--	0.15	0.002	--	0.006
A2	0.80	1.00	1.05	0.031	0.039	0.041
b	0.19	--	0.30	0.007	--	0.012
c	0.09	--	0.20	0.004	--	0.008
D	2.90	3.00	3.10	0.114	0.118	0.122
E	4.30	4.40	4.50	0.169	0.173	0.177
E1	6.4 BSC			0.252 BSC		
e	0.65 BSC			0.026 BSC		
L	0.45	0.60	0.75	0.018	0.024	0.030
Θ	0	--	8°	0	--	8°

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10.3 150mil MSOP-8L Package Outline



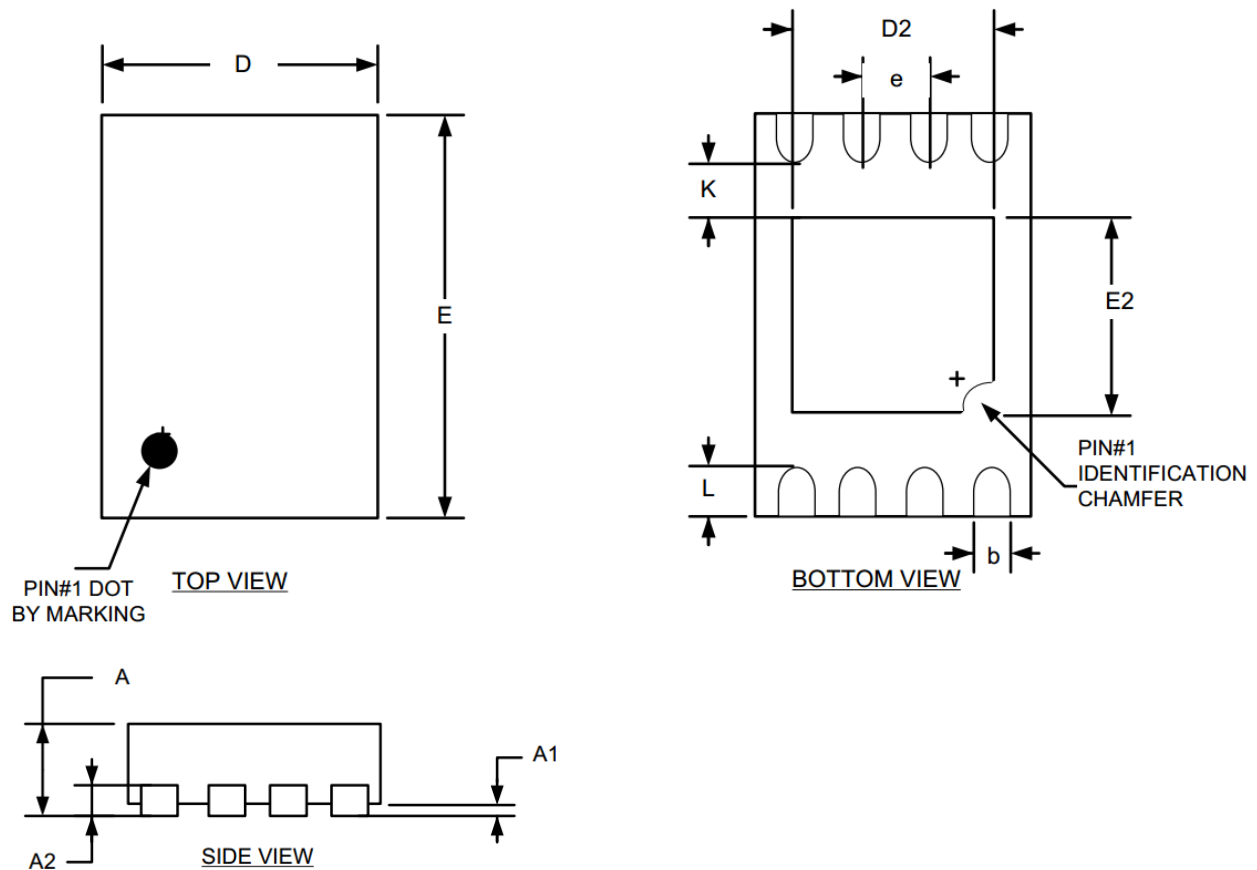
SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	--	--	1.10	--	--	0.043
A1	0.05	--	0.15	0.002	--	0.006
A2	0.75	0.85	0.95	0.030	0.033	0.037
b	0.25	--	0.40	0.010	--	0.016
C	0.13	--	0.23	0.005	--	0.009
D	2.90	3.00	3.10	0.114	0.118	0.122
E	2.90	3.00	3.10	0.114	0.118	0.122
E1	4.90 BSC			0.193 BSC		
e	0.65 BSC			0.026 BSC		
L	--	--	0.55	--	--	0.022
Θ	0	--	7°	0	--	7°

Note:

1. Controlling Dimension:MM
2. Dimension D and E1 do not include Mold protrusion
3. Refer to Jedec standard MO187
4. Drawing is not to scale

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10.4 UDFN2X3-8L Package Outline



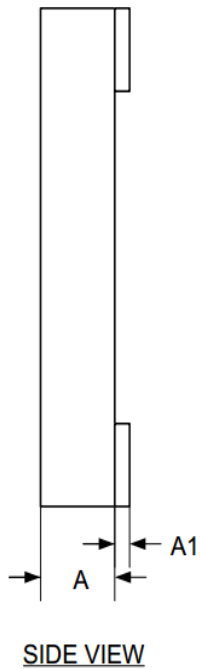
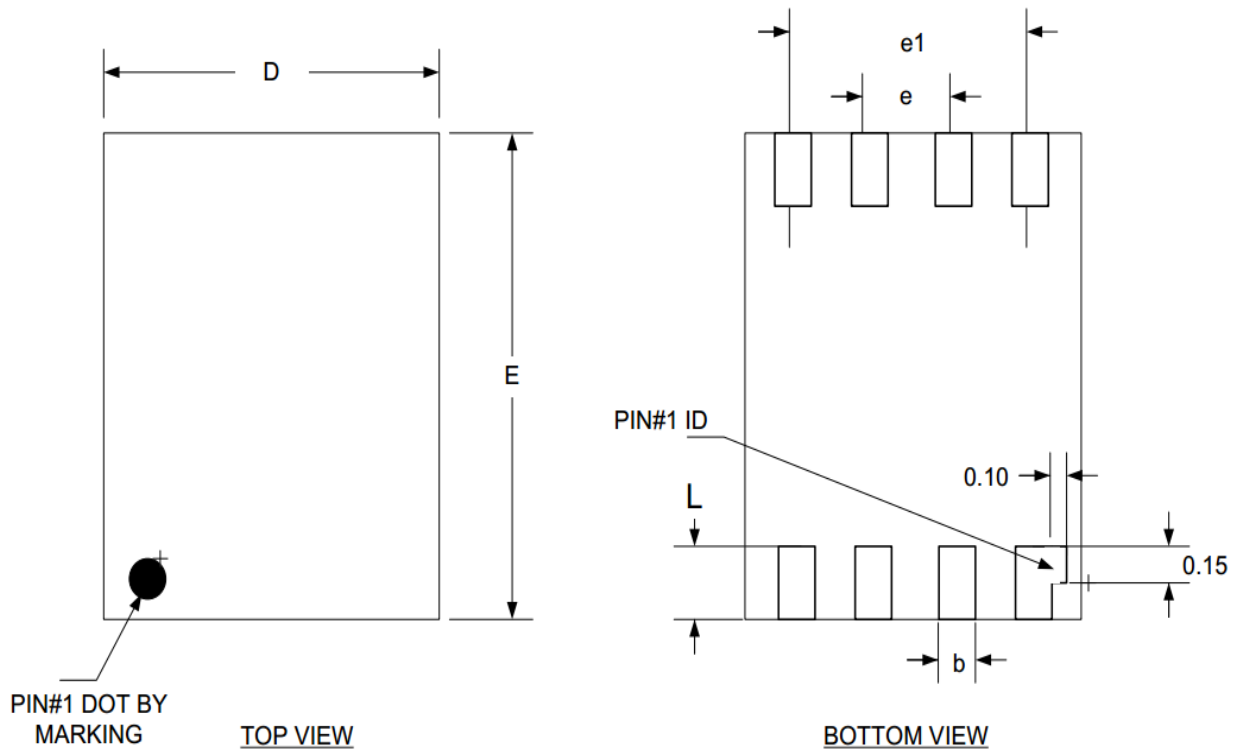
SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.55	0.60	0.020	0.022	0.024
A1	0.00	--	0.05	0.000	--	0.002
b	0.18	0.25	0.30	0.007	0.010	0.012
A2	0.152 REF			0.006 REF		
D	2.00 BSC			0.079 BSC		
D2	1.25	1.40	1.50	0.049	0.055	0.059
E	3.00 BSC			0.118 BSC		
E2	1.15	1.30	1.40	0.045	0.051	0.055
e	0.50 BSC.			0.020 BSC.		
K	0.40	--	--	0.016	--	--
L	0.20	0.30	0.40	0.008	0.012	0.016

Note:

1. Controlling Dimension:MM
2. Drawing is not to scale

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10.5 XDFN1.8X2.2-8L Package Outline



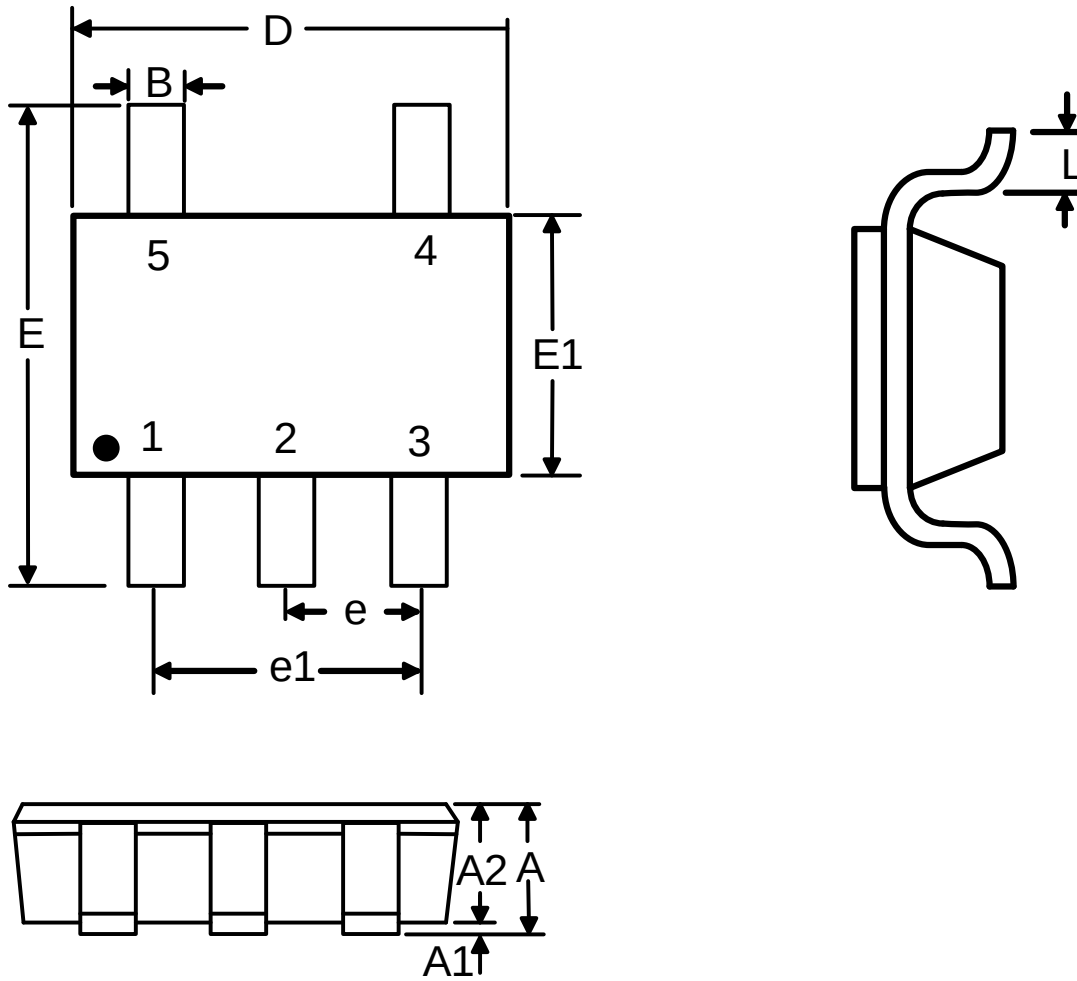
SYMBOLS	DIMENSIONS IN MILLIMETERS			DIMENSIONS IN INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	--	--	0.40	--	--	0.016
A1	0.00	--	0.05	0.000	--	0.002
b	0.15	0.20	0.25	0.006	0.008	0.010
D	1.70	1.80	1.90	0.067	0.071	0.075
E	2.10	2.20	2.30	0.083	0.087	0.091
e1	1.20REF			0.047REF		
e	0.40TYP			0.02TYP		
L	0.26	0.30	0.35	0.010	0.012	0.014

Note:

1. Controlling Dimension:MM
2. Drawing is not to scale

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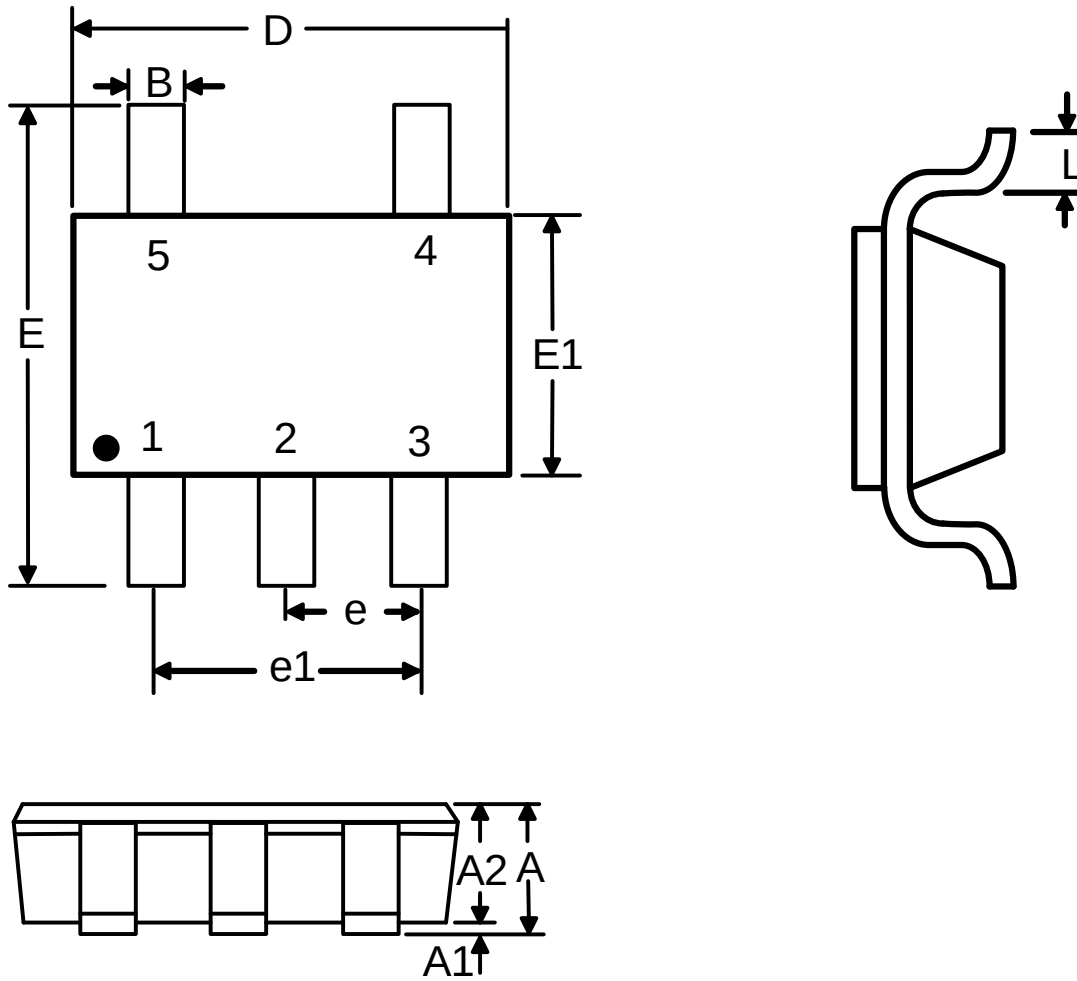
10.6 SOT23-5L Package Outline



SYMBOLS UNIT	DIMENSION IN MILLIMETER(mm)	
	MIN	MAX
A	1.050	1.250
A1	0.000	0.100
A2	1.050	1.150
B	0.300	0.500
D	2.820	3.020
E	2.650	2.950
E1	1.500	1.700
e	0.95(BSC)	
e1	1.800	2.000
L	0.300	0.600

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10.7 TSOT23-5L Package Outline



SYMBOLS UNIT	DIMENSION IN MILLIMETER(mm)	
	MIN	MAX
A	-	0.900
A1	0.020	0.090
A2	0.700	0.800
B	0.350	0.500
D	2.820	3.020
E	2.650	2.950
E1	1.600	1.700
e	0.95(BSC)	
e1	1.90(BSC)	
L	0.300	0.600