

## General Description

SN74LVC1G04 is A non-gate integrated circuit, which can realize the mathematical logic operation of  $Y=\overline{A}$ . Advanced CMOS process design, with low power consumption and high output driving capability, the power supply voltage  $V_{CC}$  between 1.65V and 5.5V chip can work normally. 74LVC1G04 has a variety of small encapsulation shapes, which can be widely used in high-end precision instruments, miniaturized and low-power handheld devices, and artificial intelligence.

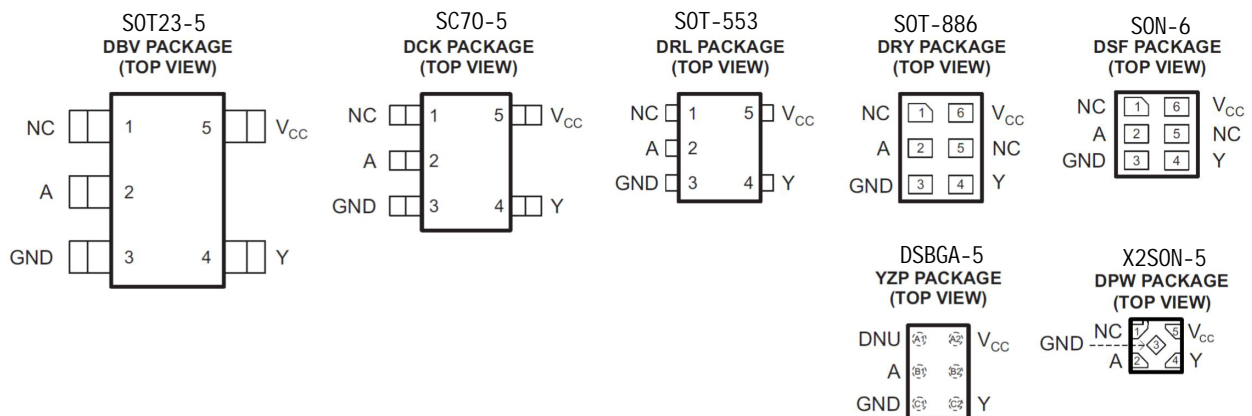
## Features

- Low input current.
- Low static power consumption.  $I_{cc}=0.1\mu A$ .
- High output drive.  $V_{CC}=4.5V$ .
- Wide operating voltage range. 1.65V-5.5V
- Packaging form: DBV/DRL/YZP/DCK DRP/DSF/DPW

## Applications

- Portable audio interface
- Blu-ray players and home theaters
- Solid state drives
- Digital TV
- Wireless headphones, smart watches, etc
- Smart wearable Devices

## Pinning and Package



## Pin Functions

NAME	PIN					DESCRIPTION
	DBV, DCK, DRL	DSF, DRY	YZP	YZV	DPW	
NC	1	1, 5	A1, B2	–	1	No connect
A	2	2	B1	A1	2	Input
GND	3	3	C1	B1	3	Ground
Y	4	4	C2	B2	4	Output
$V_{CC}$	5	6	A2	A2	5	Power terminal

## Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)

		MIN	MAX	UNIT
$V_{CC}$	Supply voltage range	-0.5	6.5	V
$V_I$	Input voltage range	-0.5	6.5	V
$V_O$	Voltage range applied to any output in the high-impedance or power-off state <sup>(2)</sup>	-0.5	6.5	V
$V_O$	Voltage range applied to any output in the high or low state <sup>(2)(3)</sup>	-0.5	$V_{CC} + 0.5$	V
$I_{IK}$	Input clamp current	$V_I < 0$	-50	mA
$I_{OK}$	Output clamp current	$V_O < 0$	-50	mA
$I_O$	Continuous output current		±50	mA
	Continuous current through $V_{CC}$ or GND		±100	mA

- (1) Stresses beyond those listed under *Absolute Maximum Ratings* may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under *Recommended Operating Conditions* is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.
- (2) The input and output negative-voltage ratings may be exceeded if the input and output current ratings are observed.
- (3) The value of  $V_{CC}$  is provided in the *Recommended Operating Conditions* table.

## Functional Block Diagram



## Device Functional Modes

Inputs	Output
A	Y
L	H
H	L

## Recommended Operating Conditions

		MIN	MAX	UNIT	
$V_{CC}$	Supply voltage	Operating	1.65	5.5	V
		Data retention only	1.5		
$V_{IH}$	High-level input voltage	$V_{CC} = 1.65\text{ V to }1.95\text{ V}$	$0.65 \times V_{CC}$		V
		$V_{CC} = 2.3\text{ V to }2.7\text{ V}$	1.7		
		$V_{CC} = 3\text{ V to }3.6\text{ V}$	2		
		$V_{CC} = 4.5\text{ V to }5.5\text{ V}$	$0.7 \times V_{CC}$		
$V_{IL}$	Low-level input voltage	$V_{CC} = 1.65\text{ V to }1.95\text{ V}$		$0.35 \times V_{CC}$	V
		$V_{CC} = 2.3\text{ V to }2.7\text{ V}$		0.7	
		$V_{CC} = 3\text{ V to }3.6\text{ V}$		0.8	
		$V_{CC} = 4.5\text{ V to }5.5\text{ V}$		$0.3 \times V_{CC}$	
$V_I$	Input voltage	0	5.5	V	
$V_O$	Output voltage	0	$V_{CC}$	V	
$I_{OH}$	High-level output current	$V_{CC} = 1.65\text{ V}$		-4	mA
		$V_{CC} = 2.3\text{ V}$		-8	
		$V_{CC} = 3\text{ V}$		-16	
		$V_{CC} = 4.5\text{ V}$		-32	
$I_{OL}$	Low-level output current	$V_{CC} = 1.65\text{ V}$		4	mA
		$V_{CC} = 2.3\text{ V}$		8	
		$V_{CC} = 3\text{ V}$		16	
		$V_{CC} = 4.5\text{ V}$		32	

### Electrical Characteristics

over recommended operating free-air temperature range (unless otherwise noted)

PARAMETER		TEST CONDITIONS	V <sub>CC</sub>	TYP	MAX	UNIT
V <sub>OH</sub>		I <sub>OH</sub> = -100uA	1.65V~5.5V	1.64	-	V
		I <sub>OH</sub> = -4 mA	1.65V	1.47	-	
		I <sub>OH</sub> = -8 mA	2.3V	2.15	-	
		I <sub>OH</sub> = -16 mA	3V	2.73	-	
		I <sub>OH</sub> = -32 mA	4.5V	4.0	-	
V <sub>OL</sub>		I <sub>OH</sub> = 100uA	1.65V~5.5V	0.01	-	V
		I <sub>OH</sub> = 4 mA	1.65V	0.11	-	
		I <sub>OH</sub> = 8 mA	2.3V	0.11	-	
		I <sub>OH</sub> = 16 mA	3V	0.2	-	
		I <sub>OH</sub> = 32 mA	4.5V	0.35	-	
I <sub>I</sub>	A	V <sub>I</sub> = 5.5V or GND	0~5.5V	0.01	±5	uA
	B			0.01	±5	
I <sub>OFF</sub>	V <sub>I</sub>	V <sub>I</sub> = 5.5V	0	0.01	±10	uA
	V <sub>O</sub>	V <sub>O</sub> = 5.5V	0	0.01	±10	
I <sub>CC</sub>		V <sub>I</sub> = 5.5V, I <sub>O</sub> = 0	1.65V~5.5V	0.01	10	uA
		V <sub>I</sub> = GND, I <sub>O</sub> = 0		0.01	10	
ΔI <sub>CC</sub>		A = V <sub>CC</sub> - 0.6V	3V~5.5V	25	-	uA

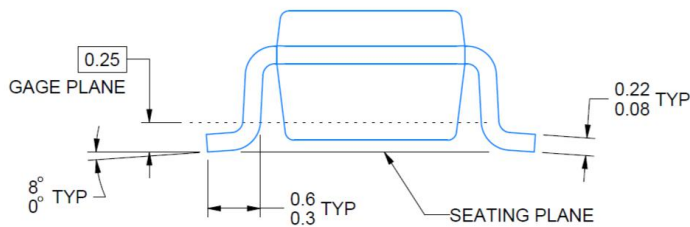
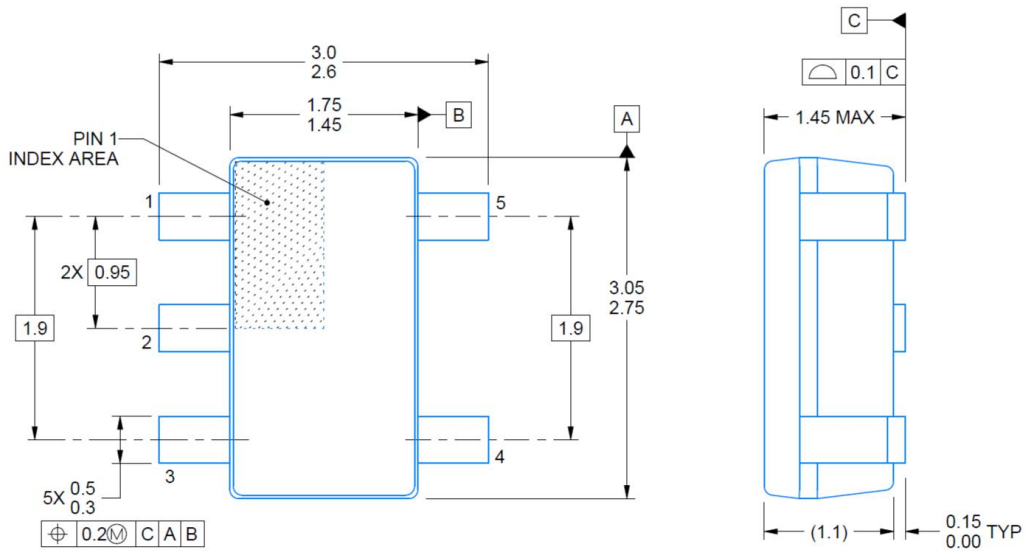
(1) All typical values are at V<sub>CC</sub> = 3.3V, T<sub>A</sub> = 25°C.

### Switching Characteristics, C<sub>L</sub> = 15 pF

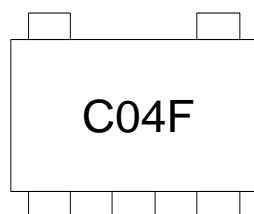
over recommended operating free-air temperature range, C<sub>L</sub> = 15 pF (unless otherwise noted)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	-40°C to 85°C								UNIT
			V <sub>CC</sub> = 1.8V ± 0.15V		V <sub>CC</sub> = 2.5V ± 0.2V		V <sub>CC</sub> = 3.3V ± 0.3V		V <sub>CC</sub> = 5V ± 0.5V		
			MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	
t <sub>pd</sub>	A	Y	2	6.4	1	4.2	0.7	3.3	0.7	3.1	ns

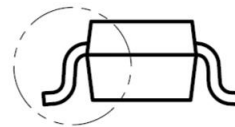
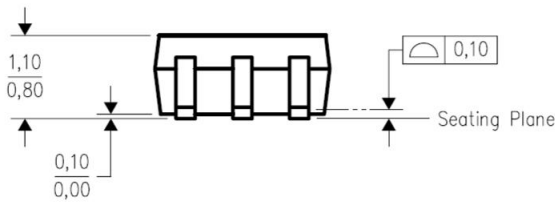
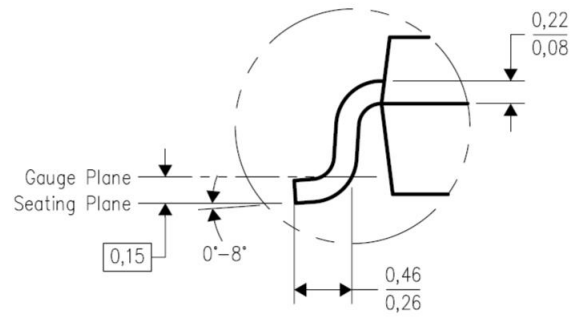
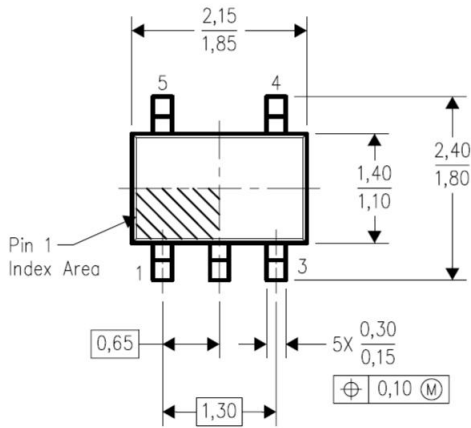
DBV (SOT23-5)



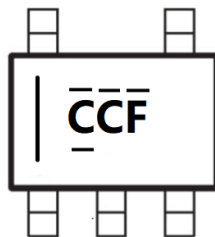
Marking



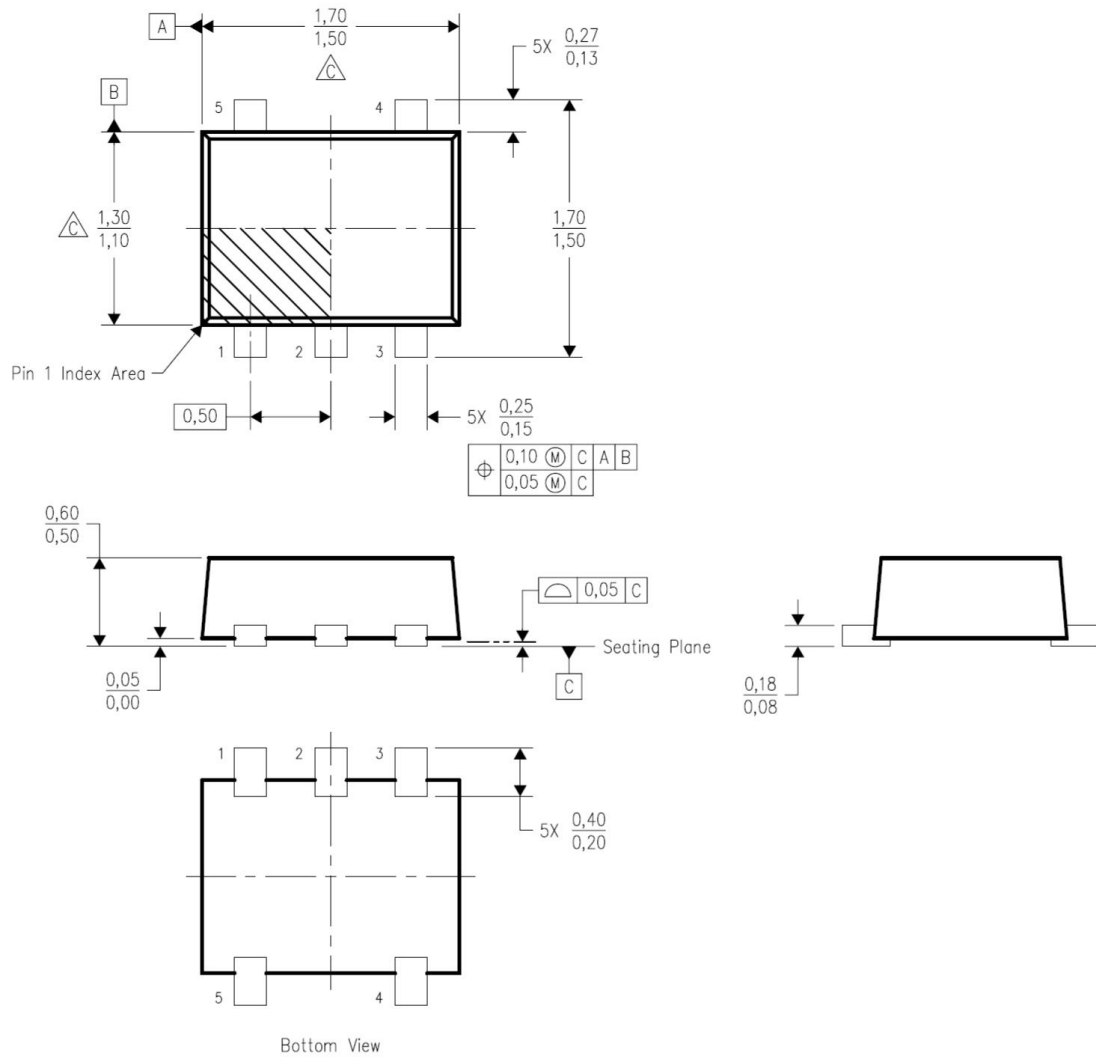
DCK (SC70-5)



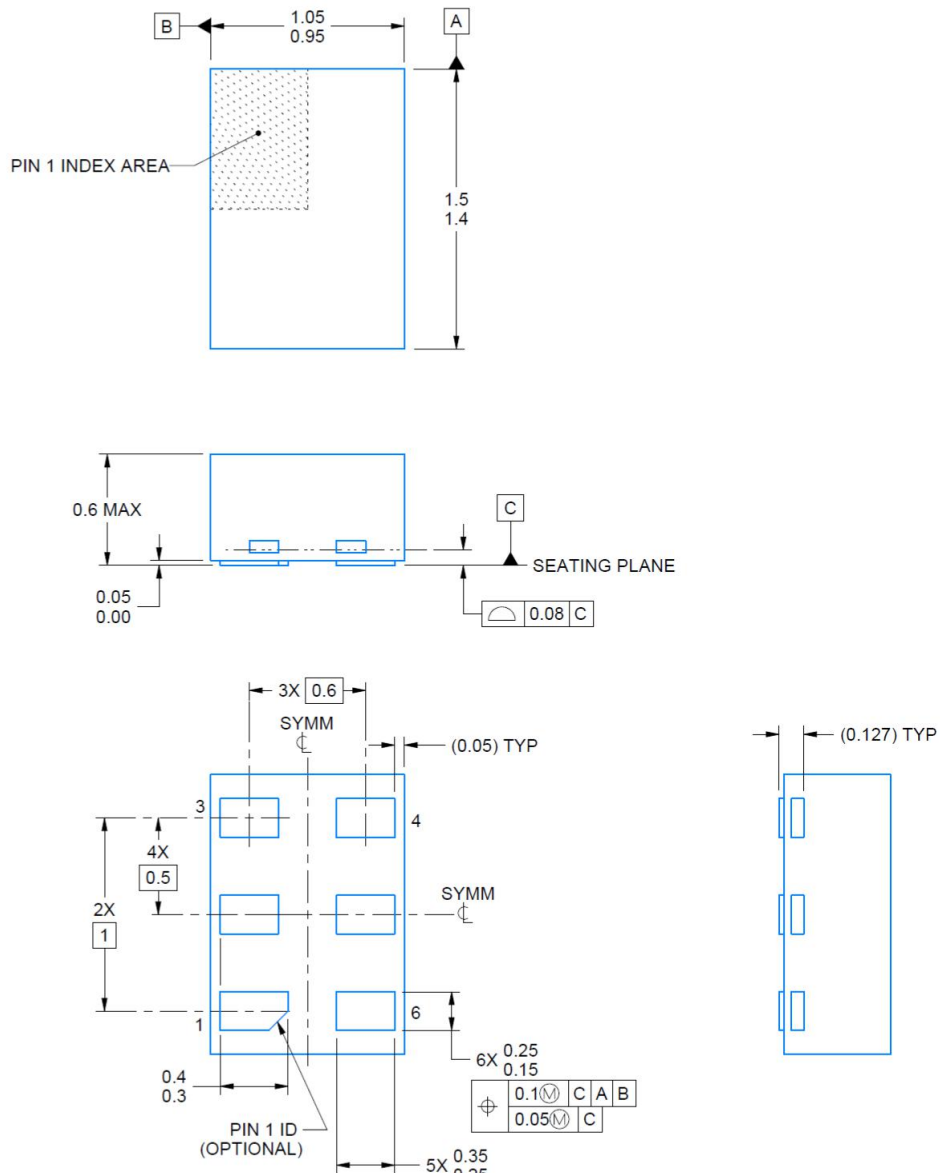
Marking



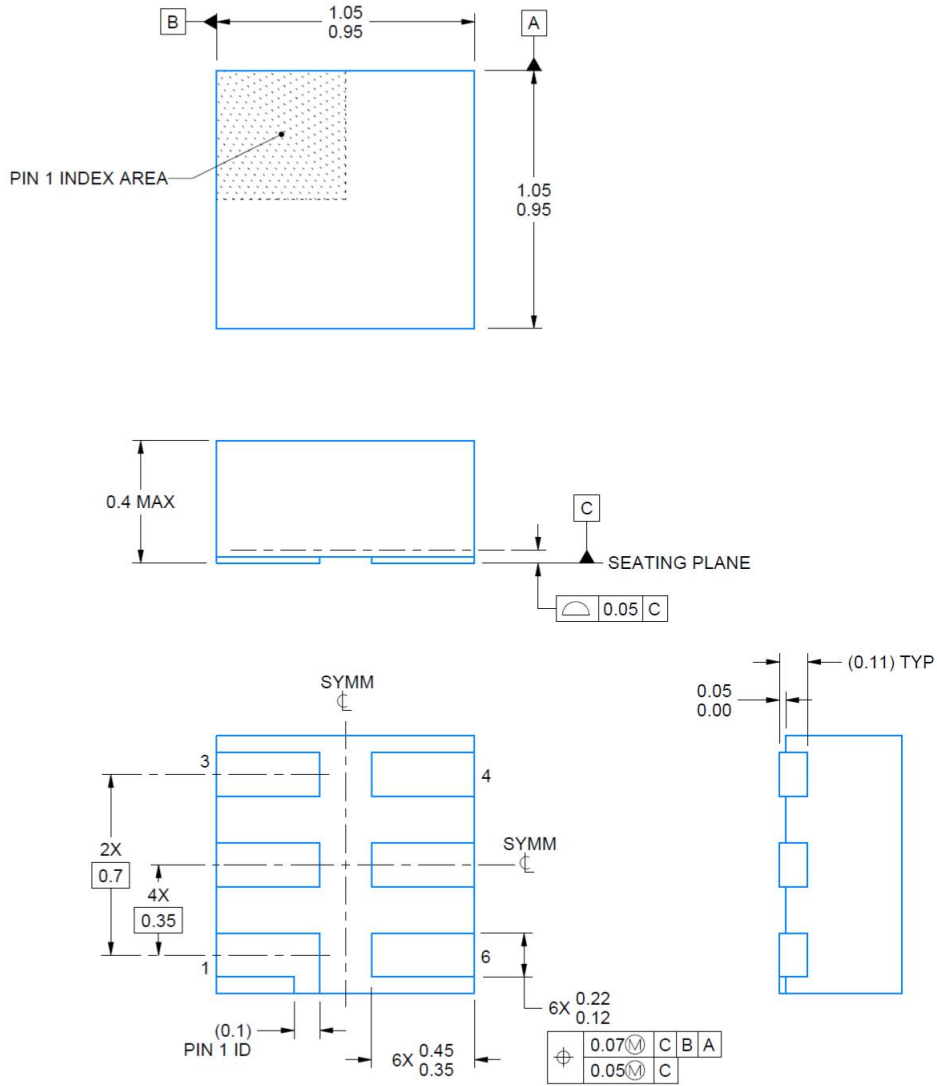
DRL (SOT-553)



DRY (SOT-886)

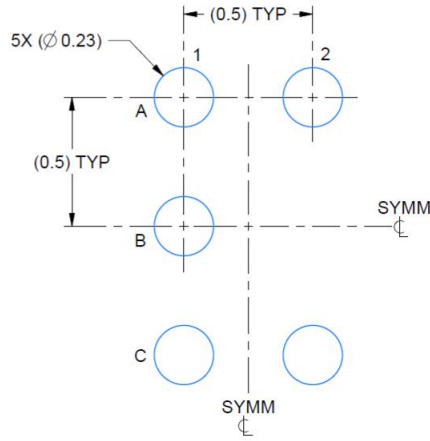


DSF (SON-6)

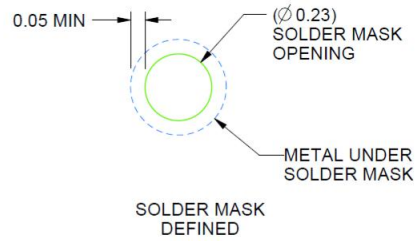
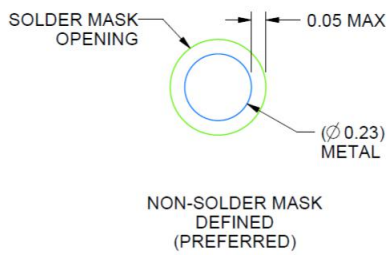




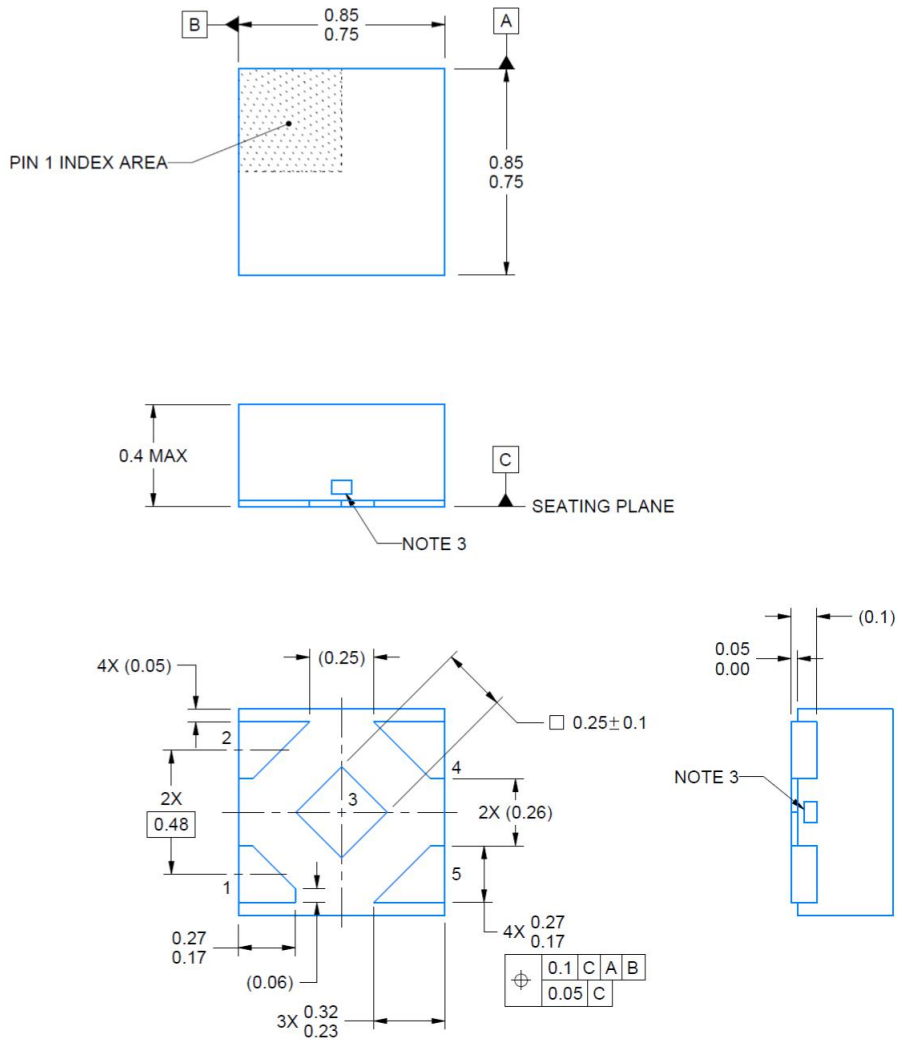
YZP (DSBGA-5)



LAND PATTERN EXAMPLE  
SCALE:40X



DPW (X2SON-5)



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