# AXOP32062/4/S

## 20V RRIO Operational Amplifiers (Dual/Quad)

**Datasheet – May 2023**

## Description

The AXOP32062 (dual), and AXOP32064 (quad) are dual and quad mid voltage (2V to 20V) operational amplifiers (opamps) with rail-to-rail input and output swing capabilities. These devices are very suitable for applications where high voltage operation, a small footprint, and high capacitive load drive are required. AXOP32062S and AXOP32064S are with Shutdown function.

## Features

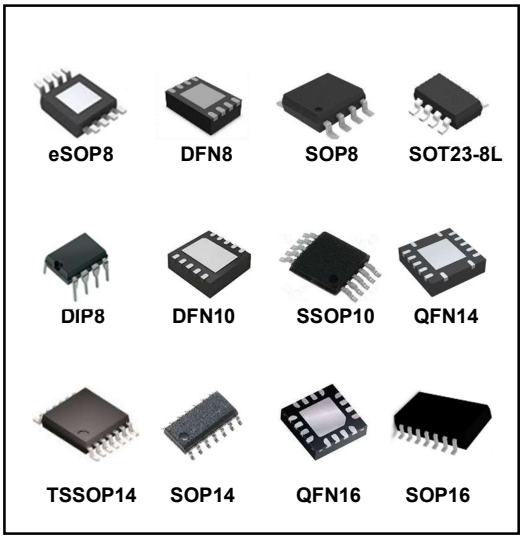
- Supply voltages from 2V to 20V
- Excellent THD+N 96dB
- Excellent SNR 105dB
- Rail-to-rail input and output
- Low input offset voltage: ±1mV typ
- Unity-gain bandwidth: 25MHz
- Low quiescent current (per opamp): 750μA typ @20V
- Easier to stabilize with higher capacitive load due to resistive open-loop output impedance
- Shutdown function (AXOP32062S and AXOP32064S)

## Applications

- Infotainment system
- HVAC: heating, ventilating, and air conditioning
- Industrial control
- Test equipment
- Portable Equipment
- Active filters
- Data acquisition system

Table 1 Device Summary

| Order code | Package | Packing | MOQ |
|---|---|---|---|
| AXOP32062A | eSOP8 | Reel | 2500 |
| AXOP32062B | DFN8 | Reel | 3000 |
| AXOP32062C | SOP8 | Reel | 4000 |
| AXOP32062D | SOT23-8L | Reel | 3000 |
| AXOP32062E | DIP8 | Tube | 2000 |
| AXOP32062SA | DFN10 | Reel | 5000 |
| AXOP32062SB | SSOP10 | Reel | 2500 |
| AXOP32064A | QFN14 | Reel | 6000 |
| AXOP32064B | TSSOP14 | Reel | 3000 |
| AXOP32064C | SOP14 | Reel | 2500 |
| AXOP32064SA | QFN16 | Reel | 6000 |
| AXOP32064SB | SOP16 | Reel | 4000 |



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# 1 Block Diagram and Application Circuit

Figure 1 Block Diagram

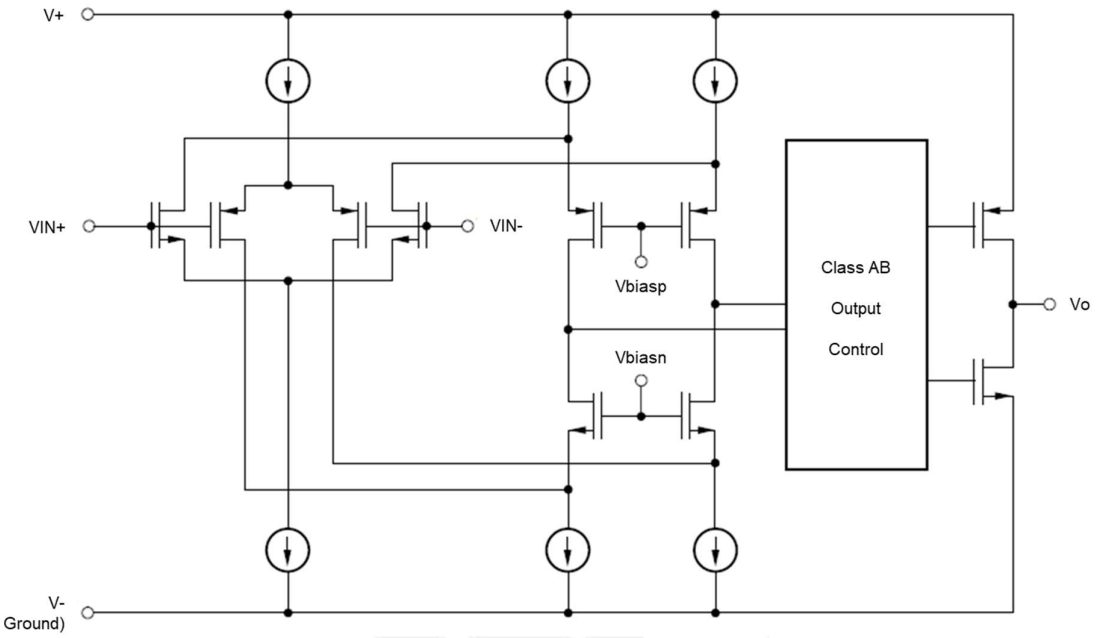
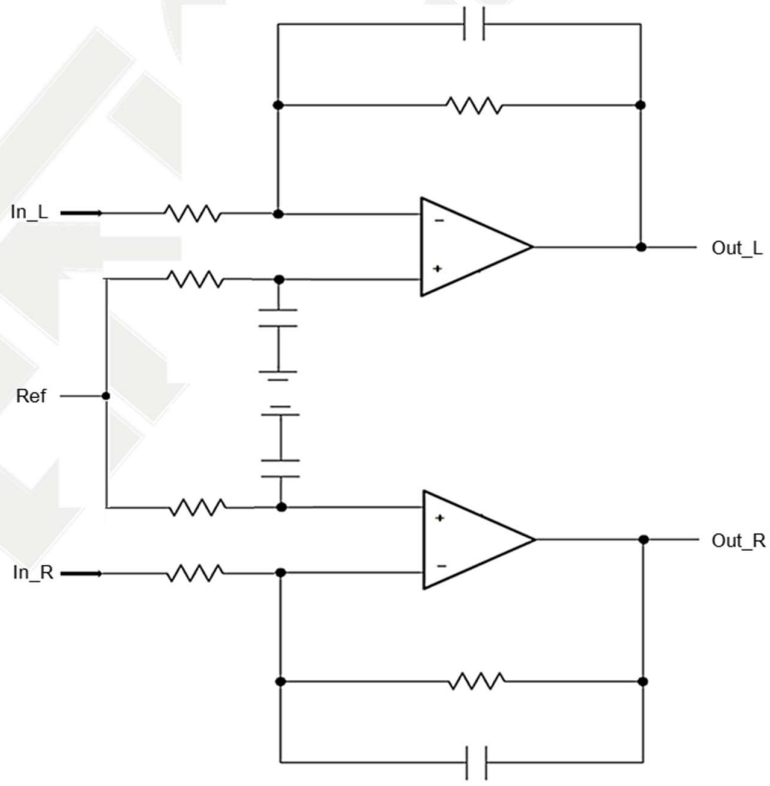


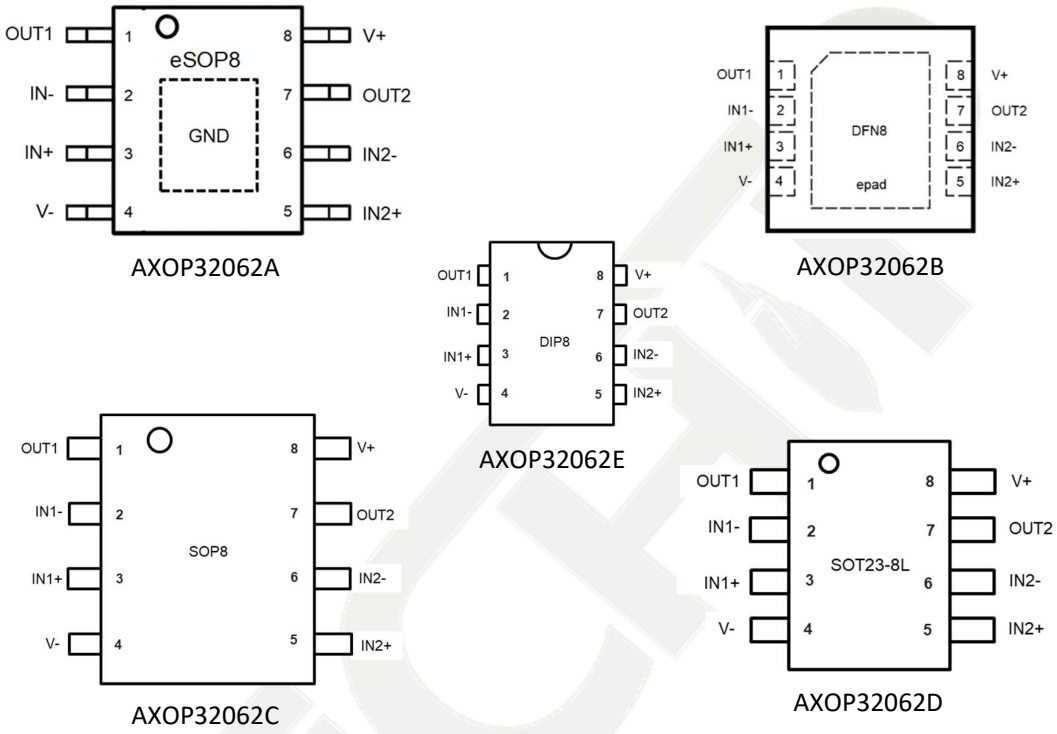

Figure 2 Typical Application Circuit (Stereo Sound Input Amplifier)



# 2 Pin Description

## 2.1 AXOP32062A/B/C/D/E Pinouts

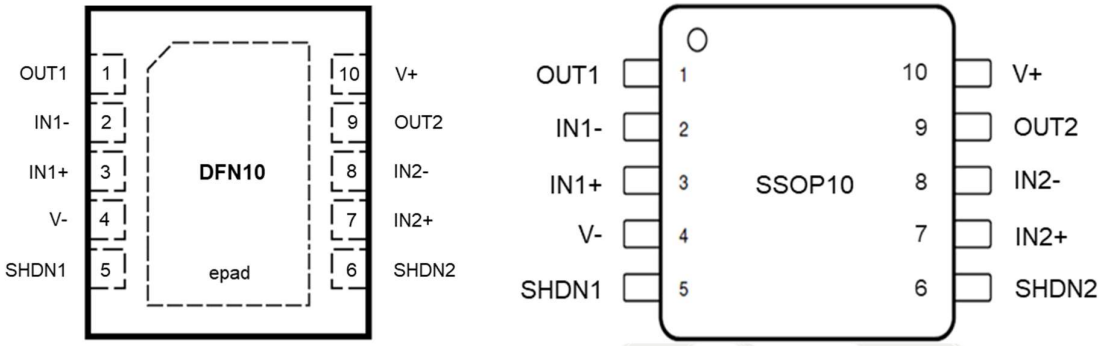
Figure 3 AXOP32062A/B/C/D/E Pinouts




| Pin number | Pin name | Description |
|---|---|---|
| 1 | OUT1 | Output 1 |
| 2 | IN1- | Inverting input 1 |
| 3 | IN1+ | Non-inverting input 1 |
| 4 | V- | Negative supply or ground |
| 5 | IN2+ | Non-inverting input 2 |
| 6 | IN2- | Inverting input 2 |
| 7 | OUT2 | Output 2 |
| 8 | V+ | Positive supply |

## 2.2 AXOP32062SA/B Pinouts

Figure 4 AXOP32062SA/B Pinouts

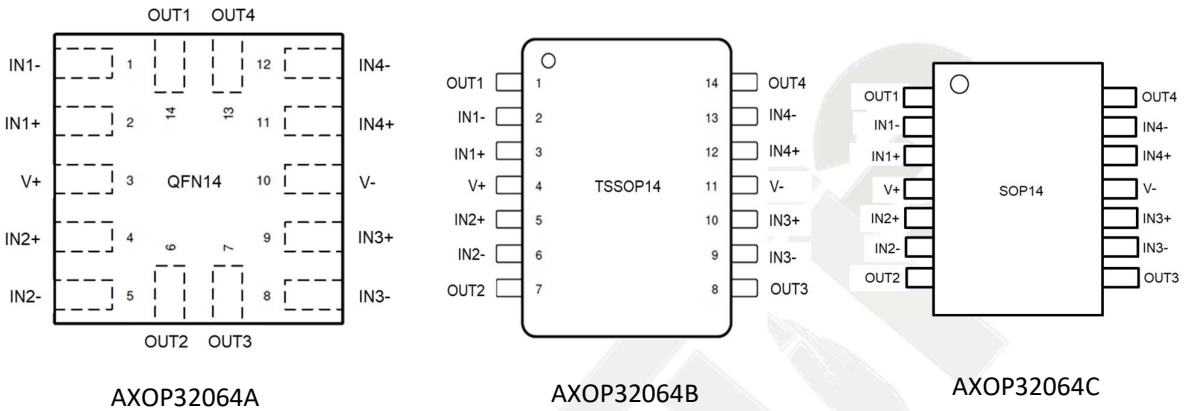



AXOP32062SA AXOP32062SB

| Pin number | Pin name | Description |
|---|---|---|
| 1 | OUT1 | Output 1 |
| 2 | IN1- | Inverting input 1 |
| 3 | IN1+ | Non-inverting input 1 |
| 4 | V- | Negative supply or ground |
| 5 | SHDN1 | Shutdown1: “High” = opamp 1 disabled<br>Shutdown1: “Low” = opamp 1 enabled<br>Shutdown1: “Float” = opamp 1 enabled |
| 6 | SHDN2 | Shutdown2: “High” = opamp 1 disabled<br>Shutdown2: “Low” = opamp 1 enabled<br>Shutdown2: “Float” = opamp 1 enabled |
| 7 | IN2+ | Non-inverting input 2 |
| 8 | IN2- | Inverting input 2 |
| 9 | OUT2 | Output 2 |
| 10 | V+ | Positive supply |

## 2.3 AXOP32064A/B/C Pinouts

Figure 5 AXOP32064A/B Pinouts

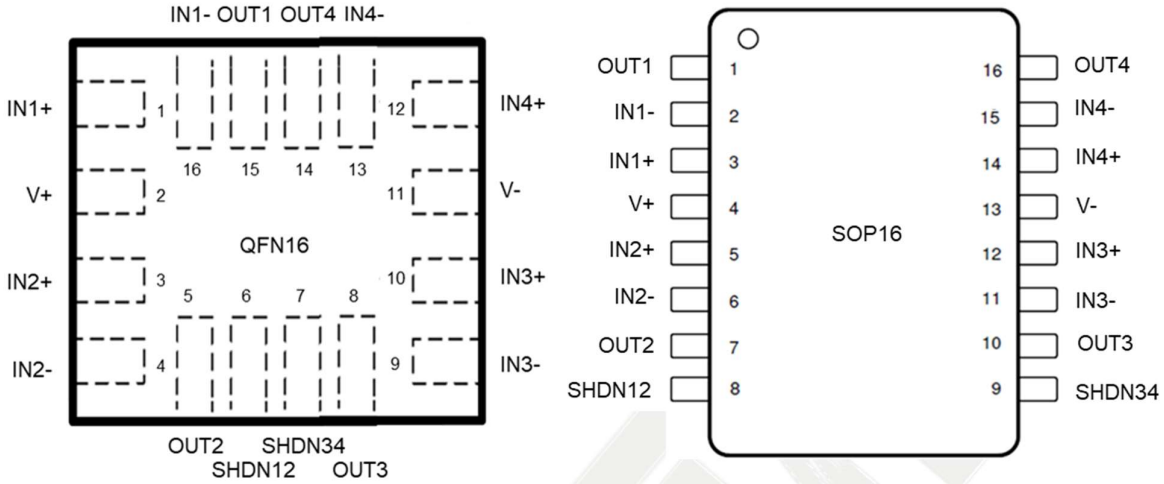



AXOP32064A AXOP32064B AXOP32064C

| | AXOP32064A | | | AXOP32064B/C | |
|---|---|---|---|---|---|
| **Pin number** | **QFN14 Pin name** | **QFN14 Description** | | **TSSOP14/ SOP14 Pin name** | **TSSOP14 / SOP14 Description** |
| 1 | IN1- | Inverting input 1 | | OUT1 | Output 1 |
| 2 | IN1+ | Non-inverting input 1 | | IN1- | Inverting input 1 |
| 3 | V+ | Positive supply | | IN1+ | Non-inverting input 1 |
| 4 | IN2+ | Non-inverting input 2 | | V+ | Positive supply |
| 5 | IN2- | Inverting input 2 | | IN2+ | Non-inverting input 2 |
| 6 | OUT2 | Output 2 | | IN2- | Inverting input 2 |
| 7 | OUT3 | Output 3 | | OUT2 | Output 2 |
| 8 | IN3- | Inverting input 3 | | OUT3 | Output 3 |
| 9 | IN3+ | Non-inverting input 3 | | IN3- | Inverting input 3 |
| 10 | V- | Negative supply or ground | | IN3+ | Non-inverting input 3 |
| 11 | IN4+ | Non-inverting input 4 | | V- | Negative supply or ground |
| 12 | IN4- | Inverting input 4 | | IN4+ | Non-inverting input 4 |
| 13 | OUT4 | Output 4 | | IN4- | Inverting input 4 |
| 14 | OUT1 | Output 1 | | OUT4 | Output 4 |

## 2.4 AXOP32064SA/B Pinouts

Figure 6 AXOP32064SA/B Pinouts




AXOP32064SA AXOP32064SB

| | AXOP32064SA | | | AXOP32064SB | |
|---|---|---|---|---|---|
| **Pin number** | **QFN16 Pin name** | **QFN16 Description** | | **SOP16 Pin name** | **SOP16 Description** |
| 1 | IN1+ | Non-inverting input 1 | | OUT1 | Output 1 |
| 2 | V+ | Positive supply | | IN1- | Inverting input 1 |
| 3 | IN2+ | Non-inverting input 2 | | IN1+ | Non-inverting input 1 |
| 4 | IN2- | Inverting input 2 | | V+ | Positive supply |
| 5 | OUT2 | Output 2 | | IN2+ | Non-inverting input 2 |
| 6 | SHDN12 | Shutdown12: “High” = opamp 1&2 disabled | | IN2- | Inverting input 2 |
| 7 | SHDN34 | Shutdown34: “High” = opamp 3&4 disabled | | SHDN12 | Shutdown12: “High” = opamp 1&2 disabled |
| 8 | OUT3 | Output 3 | | SHDN34 | Shutdown34: “High” = opamp 3&4 disabled |
| 9 | IN3- | Inverting input 3 | | IN3- | Inverting input 3 |
| 10 | IN3+ | Non-inverting input 3 | | OUT3 | Output 3 |
| 11 | V- | Negative supply or ground | | IN3- | Inverting input 3 |
| 12 | IN4+ | Non-inverting input 4 | | IN3+ | Non-inverting input 3 |
| 13 | IN4- | Inverting input 4 | | V- | Negative supply or ground |
| 14 | OUT4 | Output 4 | | IN4+ | Non-inverting input 4 |
| 15 | OUT1 | Output 1 | | IN4- | Inverting input 4 |
| 16 | IN1- | Inverting input 1 | | OUT4 | Output 4 |

# 3 Electrical Specifications

## 3.1 Absolute Maximum Ratings

Table 2 Absolute Maximum Ratings

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| Vs | Supply voltage (V+) - (V-) | -0.3 to +27 | V |
| IN+, IN- | Input pin voltage | (V-) - 0.5 to (V+) +0.5 | V |
| OUT | Output pin voltage | (V-) - 0.5 to (V+) +0.5 | V |
| Tj | Junction temperature | 150 | °C |
| Tstg | Storage temperature | -55 to +150 | °C |

## 3.2 Thermal Data

Table 3 Thermal Data

| Package | Rth j-amb | Rth j-case | Unit |
|---|---|---|---|
| eSOP8 | 60 | 10 | °C/W |
| DFN8 | 43 | 5 | °C/W |
| SOP8 | 136 | 77 | °C/W |
| SOT23-8L | 184 | 100 | °C/W |
| DIP8 | 85 | 41 | °C/W |
| DFN10 | 42 | 6 | °C/W |
| SSOP10 | 160 | 45 | °C/W |
| QFN14 | 47 | 4 | °C/W |
| TSSOP14 | 113 | 62 | °C/W |
| SOP14 | 106 | 64 | °C/W |
| QFN16 | 45 | 5 | °C/W |
| SOP16 | 80 | 30 | °C/W |

## 3.3 ESD

Table 4 ESD

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| All pins | ESD (HBM) | ±2,000 | V |

## 3.4 Electrical Characteristics

For Vs = (V+) - (V-) = 20V at Ta = 25°C, RL = 10kΩ connected to Vs/2, Vcm = Vs/2, and Vout = Vs/2 (unless otherwise noted).

Table 5 Electrical Characteristics

| Symbol | Parameter | Test condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Vs | Supply voltage (V+) - (V-) | | 2 | | 20 | V |
| Ta | Operating ambient temperature | | -40 | | 85 | °C |
| **Power Supply** | | | | | | |
| Iq | Quiescent current per amplifier | Vs=20V, Io=0mA | | 750 | 900 | μA |
| | | all temp | | | 1,200 | |
| **Offset Voltage** | | | | | | |
| Vos | Input offset voltage | | | ±1 | ±3 | mV |
| | | all temp | | | ±5 | mV |
| dVos/dT | Drift | all temp | | ±0.5 | | μV/°C |
| PSRR | Power-supply rejection ratio | At DC | | 120 | | dB |
| Csep | Channel separation | At DC | | 120 | | dB |
| **Input Voltage Range** | | | | | | |
| Vcm | Common mode voltage range | Vs=2V to 20V | (V-)-0.1 | | (V+)+0.1 | V |
| CMRR | Common mode rejection ratio | At DC | | 100 | | dB |
| **Input Bias Current** | | | | | | |
| Ib | Input bias current | | | ±0.5 | | pA |
| Ios | Input offset current | | | ±0.05 | | pA |
| **Noise** | | | | | | |
| En | Input voltage noise | f=20Hz to 20kHz | | 3 | | μV |
| **Input Capacitance** | | | | | | |
| Cid | Differential | | | 2 | | pF |
| Cic | Common mode | | | 4 | | pF |
| **Open Loop Gain** | | | | | | |
| Aol | Open loop voltage gain | | | 130 | | dB |
| **Frequency Response** | | | | | | |
| GBP | Gain bandwidth product | G=+1, CL=10pF | | 25 | | MHz |
| Cload | Capacitive load | G=+1 | | | 1.5 | nF |
| SR | Slew rate | G=+1, CL=100pF | | 15 | | V/μs |
| Ts | Settling time | To 0.1%, 2V step, G=+1, CL=100pF | | 0.3 | | μs |

| | | | | | | |
|---|---|---|---|---|---|---|
| THD+N | Total harmonic distortion + Noise (3rd order filter; BW= 80kHz at -3dB.) | Vs=20V, Vcm=10V, Vo=1Vrms, G=+1, f=1kHz | | 96 | | dB |
| SNR | Signal to Noise Ratio | Vs=20V,Vin=1Vrms, G=+1, f=1kHz | | 105 | | dB |
| **Output** | | | | | | |
| Vo | Voltage output swing from supply rails | RL=10kΩ | | 40 | 60 | mV |
| | | RL=2kΩ | | 150 | 200 | |
| Isc | Short circuit current | | | ±30 | | mA |
| | | AXOP32062A only eSOP8 package | | ±100 | | mA |
| **Shutdown (AXOP32062S and AXOP32064S only)** | | | | | | |
| Iqsd | Quiescent current per amplifier | Vs=2V to 20V, amplifier disabled, SHDN = “High” | | 30 | 50 | μA |
| Vsd | Shutdown threshold | V Vs=2V to 20V, amplifier disabled, SHDN = “High” | 4 | | | V |
| Vsdl | Low level shutdown threshold | Vs=2V to 20V, amplifier enabled, SHDN = “Float” or SHDN = “Low” | | | 1 | V |
| ton | Amplifier enable time | Vs=2V to 20V, full shutdown; G=+1, Vo = 0.9×Vs/2, RL connected to V- | | 10 | | μs |
| toff | Amplifier disable time | Vs=2V to 20V, G=+1, Vo=0.1×Vs/2, RL connected to V- | | 1 | | μs |

Disable time (toff) and enable time (ton) are defined as the time interval between the 50% point of the signal applied to the SHDN pin and the point at which the output voltage reaches the 10% (disable) or 90% (enable) level.

## 3.5 Typical Electrical Characteristics

Figure 7 Vos Distribution

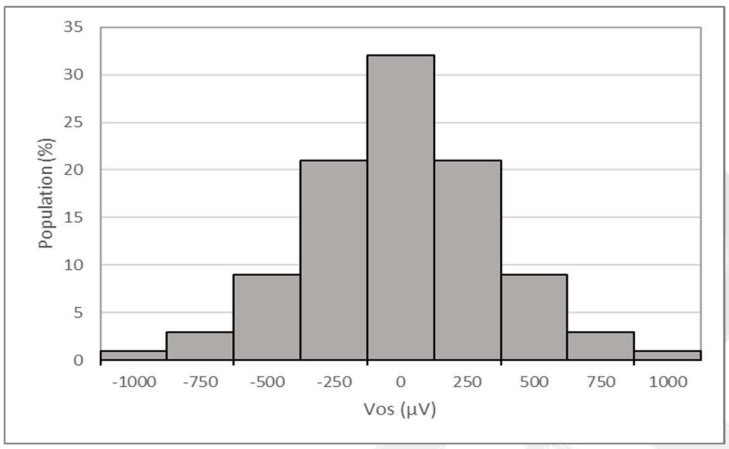



Figure 8 Vos vs Input Common Mode Voltage

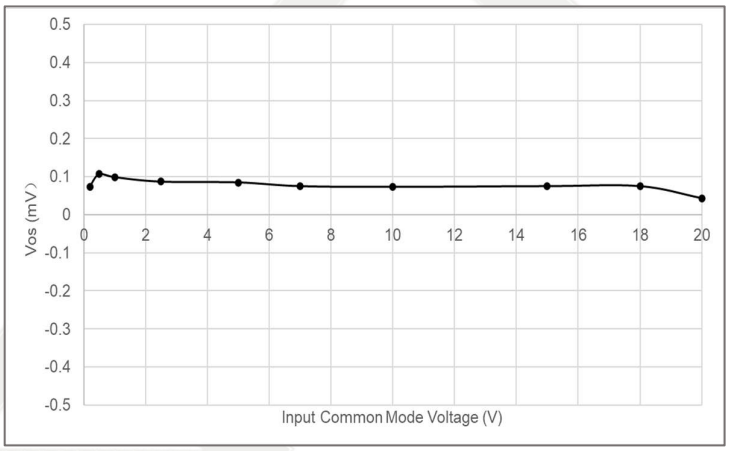



Figure 9 Vos vs Vs

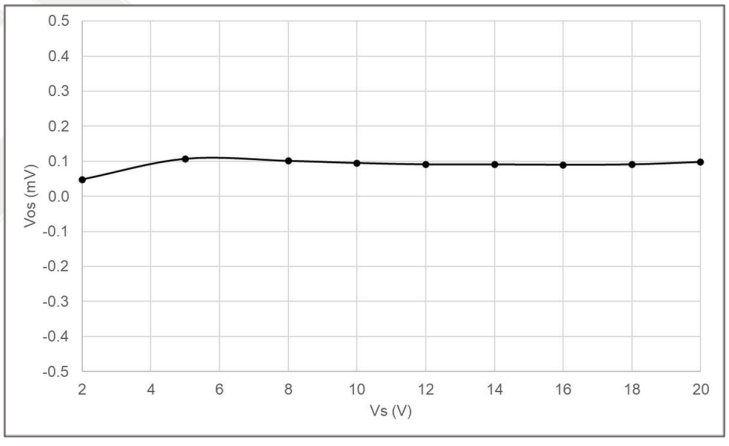


Figure 10 Iq (per opamp) vs Input Common Mode Voltage

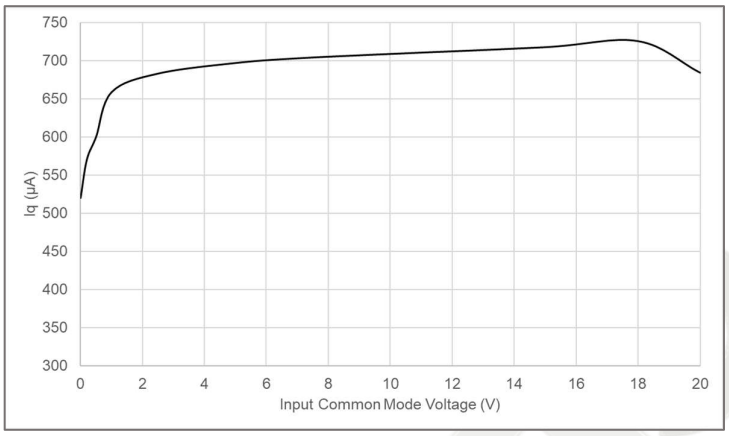



Figure 11 Iq (per opamp) vs Vs

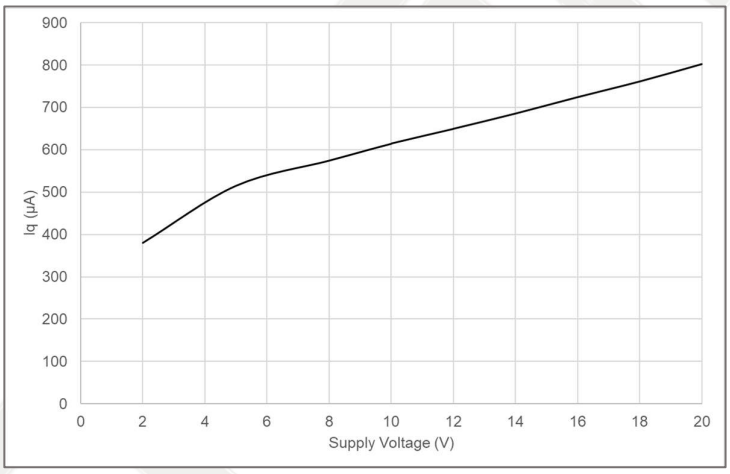



Figure 12 THD+N vs Frequency

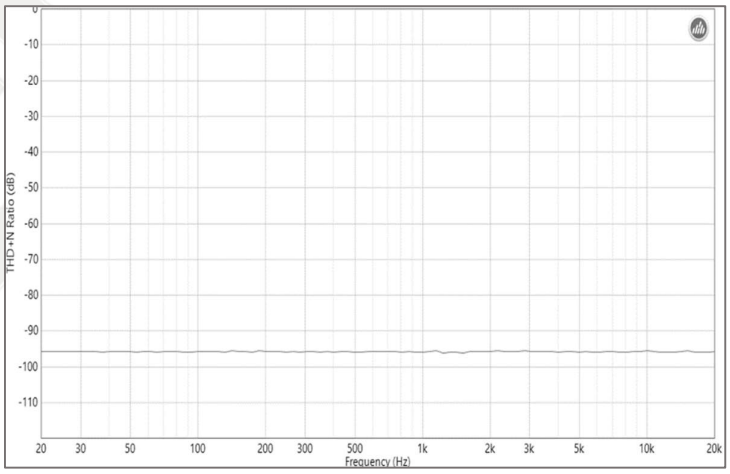


Figure 13 Large Signal Step Response

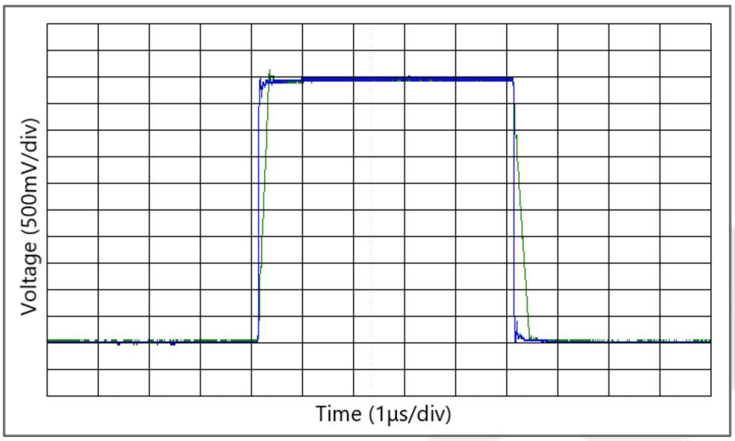
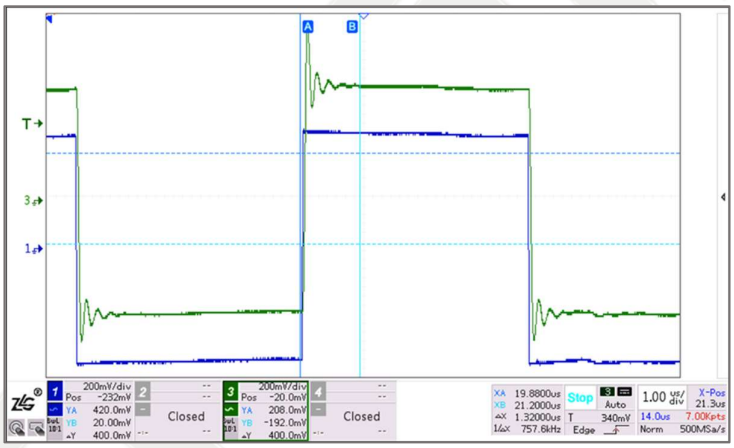



Figure 14 Step Response @Vs=20V, CL=1nF



# 4 Functional Description

## 4.1 Overview

The AXOP3206x devices are a family of high voltage, rail-to-rail input and output opamps. These devices operate from 2V to 20V, are unity gain stable, and are designed for a wide range of applications and used in virtually any single supply application.

## 4.2 Rail to Rail Input

The input common mode voltage range of the AXOP3206x family extends 100mV beyond the supply rails for the full supply voltage range of 2V to 20V. This performance is achieved with a complementary input stage: a N-channel input differential pair in parallel with a P-channel differential pair, as shown in Figure 1. The N-channel pair is active for input voltages close to the positive rail, typically (V+)-1.4V to 200mV above the positive supply, whereas the P-channel pair is active for inputs from 200mV below the negative supply to approximately (V+)-1.4V. There is a transition region, in which both pairs are on. Within this transition region, PSRR, CMRR, offset voltage, offset drift, and THD can degrade compared to device operation outside this region.

## 4.3 Rail to Rail Output

Designed as a high voltage operational amplifier, the AXOP3206x series delivers a robust output drive capability. A class AB output stage with common source Mosfets achieves full rail-to-rail output swing capability. For resistive loads of 10kΩ, the output swings to within 40mV (typ) of either supply rail, regardless of the applied power supply voltage. Different load conditions change the ability of the amplifier to swing close to the rails.

## 4.4 Overload Recovery

Overload recovery is defined as the time required for the opamp output to recover from a saturated state to a linear state. The output devices of the opamp enter a saturation region when the output voltage exceeds the rated operating voltage, because of the high input voltage or the high gain. After the device enters the saturation region, the charge carriers in the output devices require time to return to the linear state. After the charge carriers return to the linear state, the device begins to slew at the specified slew rate. The overload recovery time for the AXOP3206x family is approximately 100ns.

## 4.5 Shutdown

The AXOP3206xS has shutdown function. The amplifiers can be shut down by enabling the respective shutdown pin.

# 5 Package Information

## 5.1 Package Dimensions

Figure 15 eSOP8 Mechanical Data and Package Dimensions

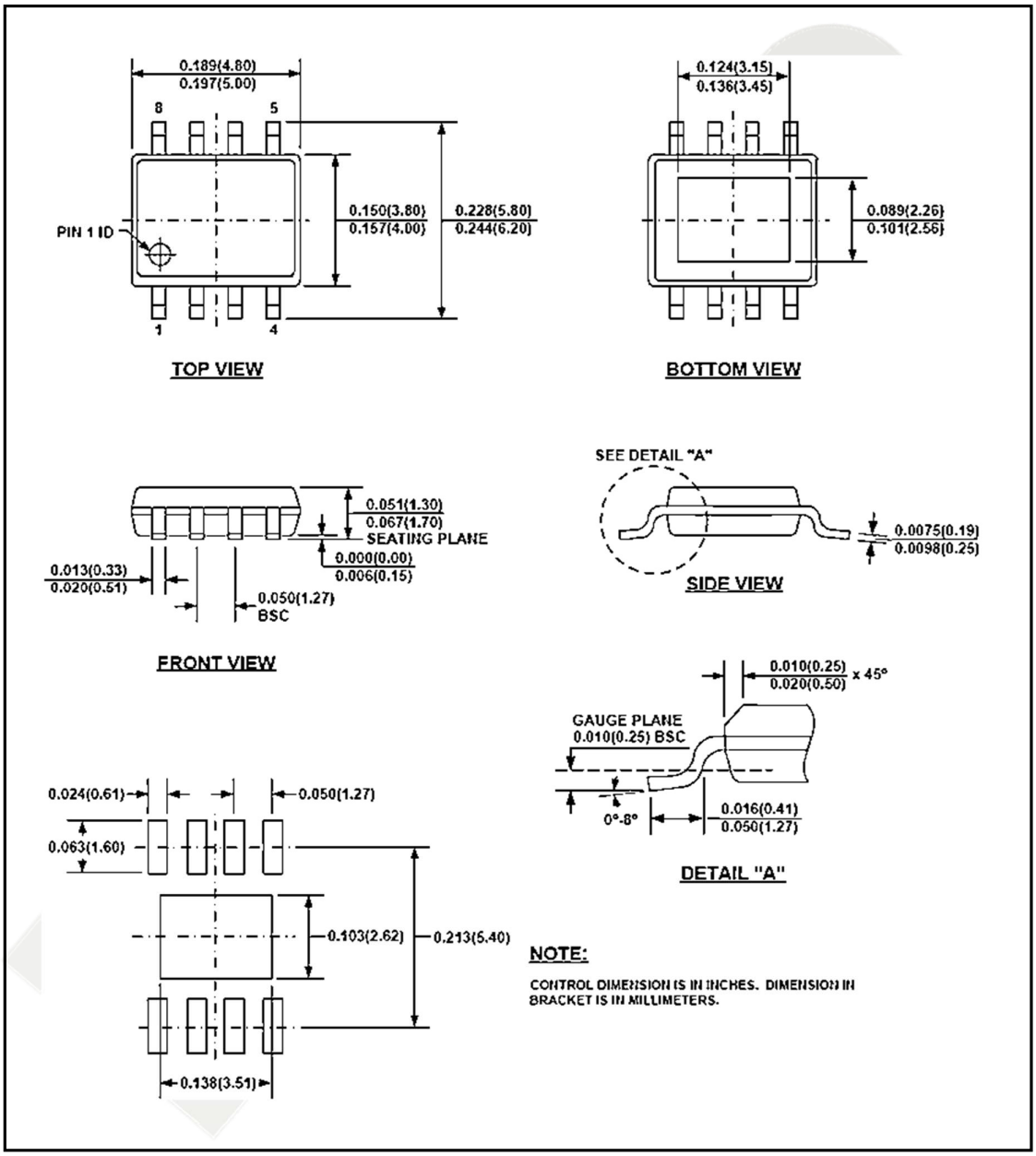


Figure 16 DFN8 Mechanical Data and Package Dimensions

| | Min (mm) | Typ (mm) | Max (mm) | | Min (mm) | Typ (mm) | Max (mm) |
|---|---|---|---|---|---|---|---|
| A | 0.70 | 0.75 | 0.80 | e | 0.50BSC | | |
| A1 | 0.00 | 0.02 | 0.05 | E | 1.95 | 2.00 | 2.05 |
| b | 0.18 | 0.25 | 0.30 | E2 | 0.65 | 0.70 | 0.75 |
| b1 | 0.18REF | | | L | 0.25 | 0.30 | 0.35 |
| c | 0.20REF | | | h | 0.15 | 0.20 | 0.25 |
| D | 1.95 | 2.00 | 2.05 | | | | |
| D2 | 1.15 | 1.20 | 1.25 | | | | |

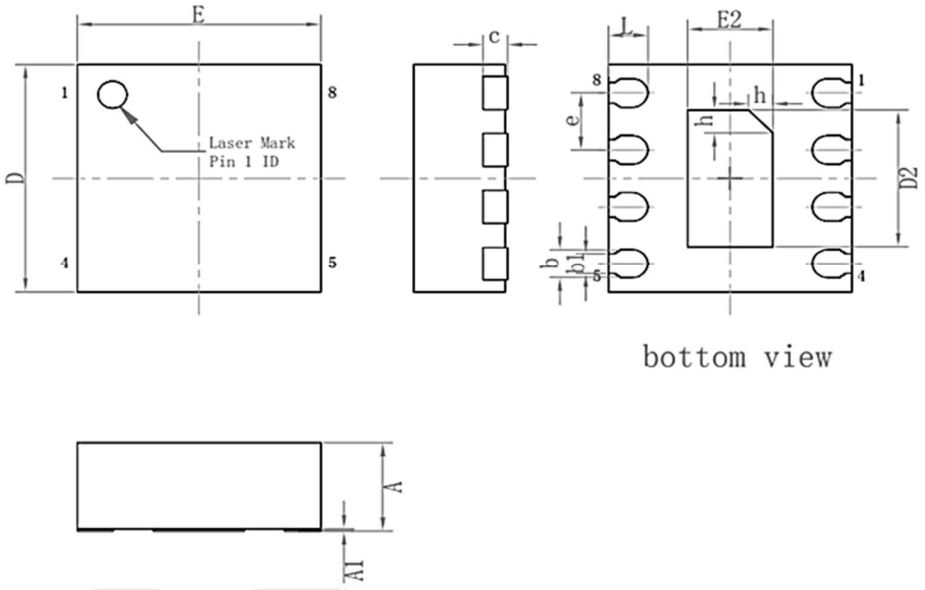
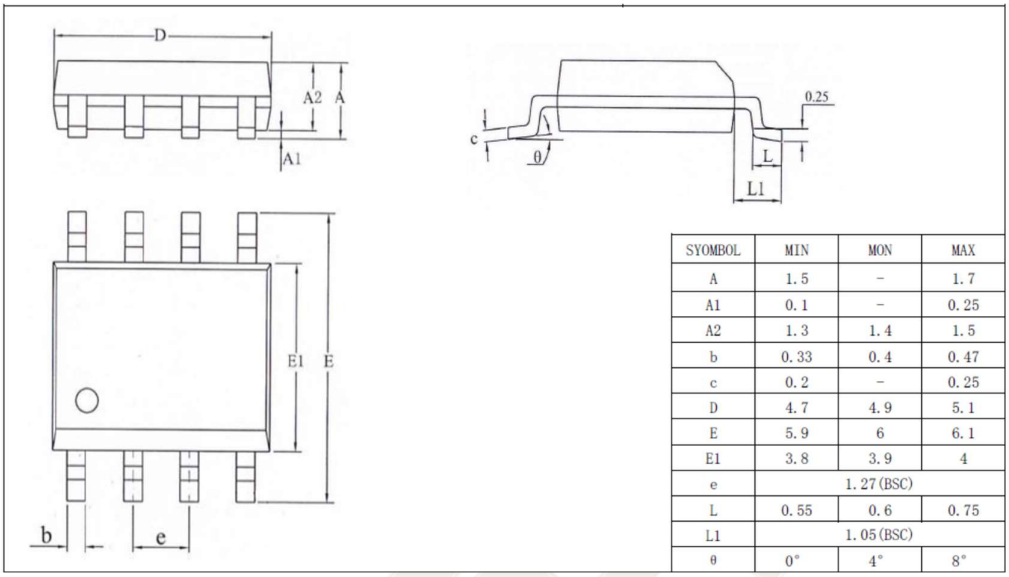
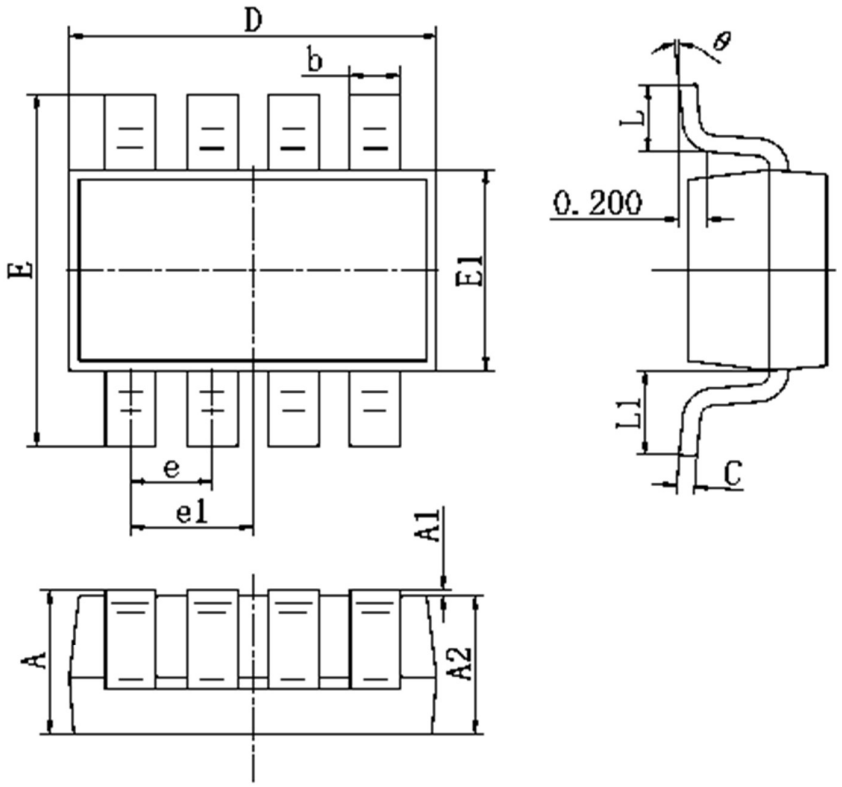


Figure 17 SOP8 Mechanical Data and Package Dimensions



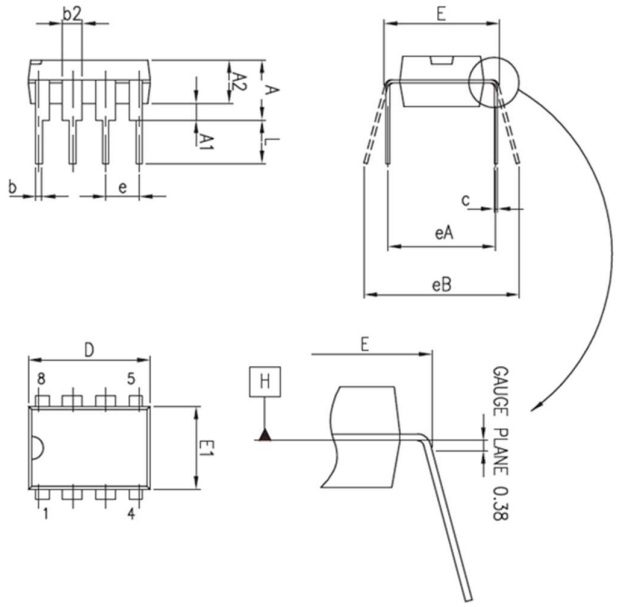

| SYOMBOL | MIN | MON | MAX |
|---|---|---|---|
| A | 1.5 | - | 1.7 |
| A1 | 0.1 | - | 0.25 |
| A2 | 1.3 | 1.4 | 1.5 |
| b | 0.33 | 0.4 | 0.47 |
| c | 0.2 | - | 0.25 |
| D | 4.7 | 4.9 | 5.1 |
| E | 5.9 | 6 | 6.1 |
| E1 | 3.8 | 3.9 | 4 |
| e | 1.27(BSC) | | |
| L | 0.55 | 0.6 | 0.75 |
| L1 | 1.05(BSC) | | |
| θ | 0° | 4° | 8° |

Figure 18 SOT23-8L Mechanical Data and Package Dimensions



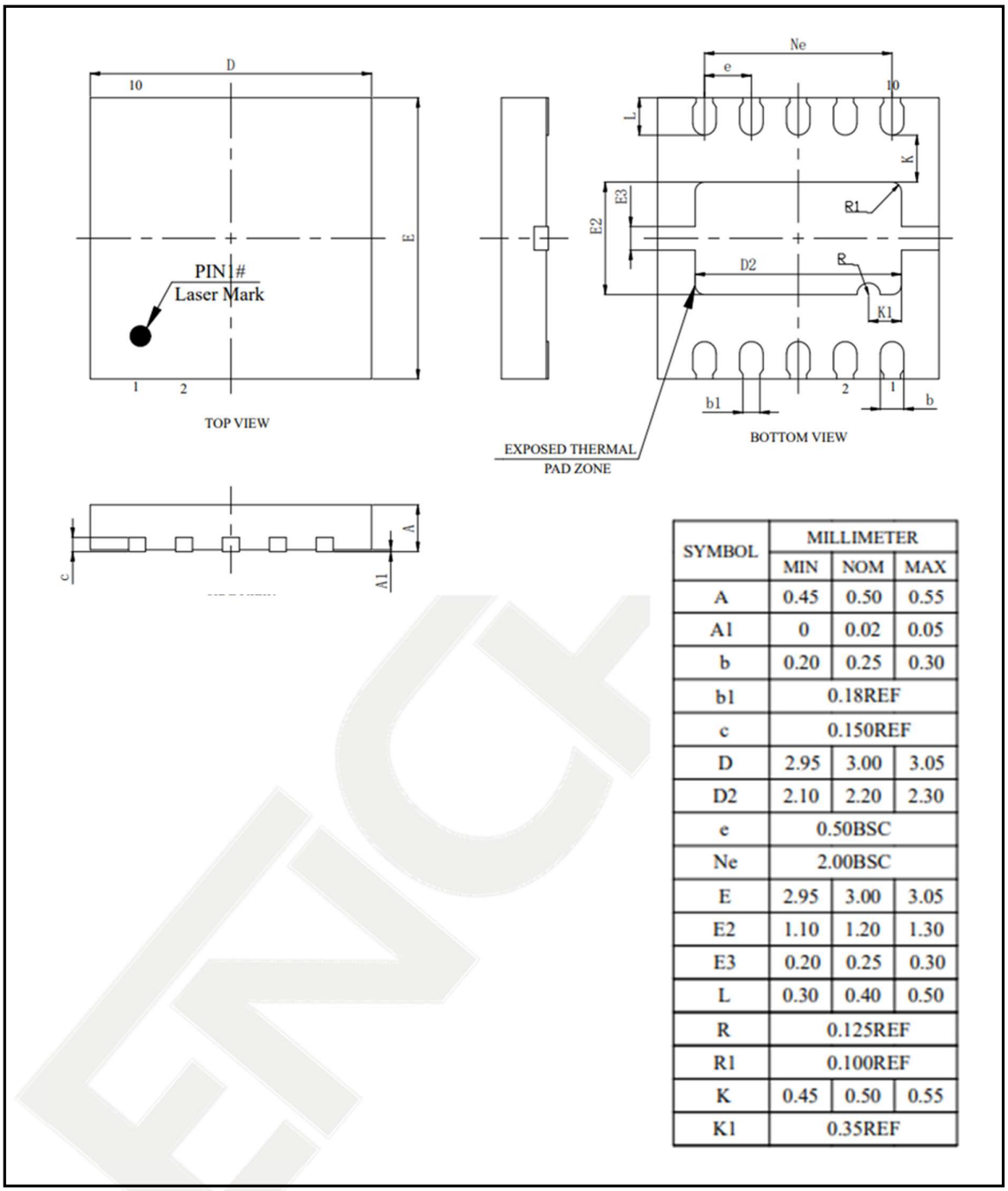

| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 1.050 | 1.250 | 0.041 | 0.049 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 1.050 | 1.150 | 0.041 | 0.045 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.100 | 0.200 | 0.004 | 0.008 |
| D | 2.820 | 3.020 | 0.111 | 0.119 |
| E1 | 1.500 | 1.700 | 0.059 | 0.067 |
| E | 2.650 | 2.950 | 0.104 | 0.116 |
| e | 0.650BSC. | | 0.026BSC. | |
| e1 | 0.975BSC. | | 0.038BSC. | |
| L | 0.300 | 0.600 | 0.012 | 0.024 |
| L1 | 0.600REF. | | 0.024REF. | |
| θ | 0° | 8° | 0° | 8° |

Figure 19 DIP8 Mechanical Data and Package Dimensions



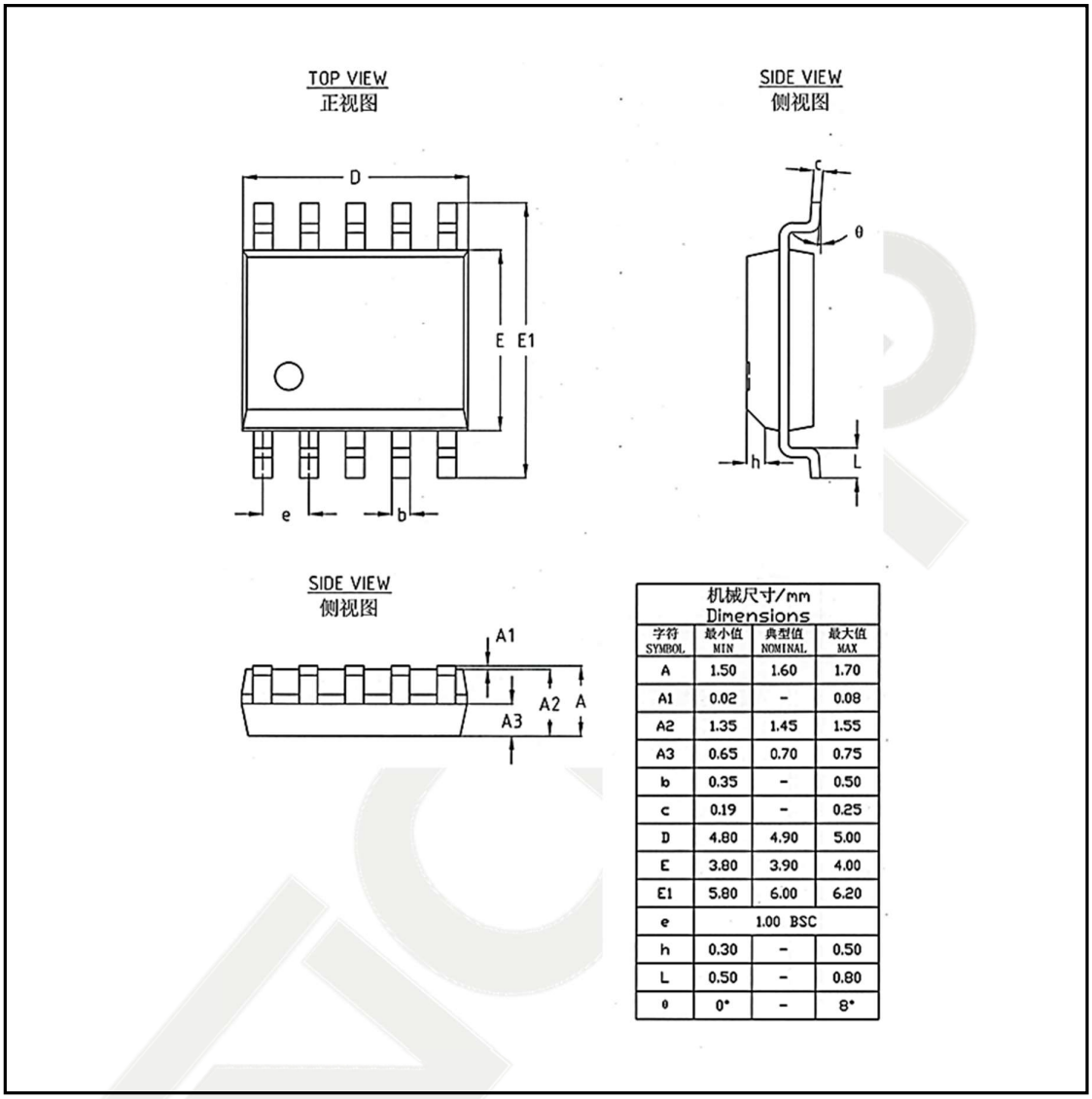

| Ref. | Dimensions | | | | | |
|---|---|---|---|---|---|---|
| | Millimeters | | | Inches | | |
| | Min. | Typ. | Max. | Min. | Typ. | Max. |
| A | | | 5.33 | | | 0.210 |
| A1 | 0.38 | | | 0.015 | | |
| A2 | 2.92 | 3.30 | 4.95 | 0.115 | 0.130 | 0.195 |
| b | 0.36 | 0.46 | 0.56 | 0.014 | 0.018 | 0.022 |
| b2 | 1.14 | 1.52 | 1.78 | 0.045 | 0.060 | 0.070 |
| c | 0.20 | 0.25 | 0.36 | 0.008 | 0.010 | 0.014 |
| D | 9.02 | 9.27 | 10.16 | 0.355 | 0.365 | 0.400 |
| E | 7.62 | 7.87 | 8.26 | 0.300 | 0.310 | 0.325 |
| E1 | 6.10 | 6.35 | 7.11 | 0.240 | 0.250 | 0.280 |
| e | | 2.54 | | | 0.100 | |
| eA | | 7.62 | | | 0.300 | |
| eB | | | 10.92 | | | 0.430 |
| L | 2.92 | 3.30 | 3.81 | 0.115 | 0.130 | 0.150 |

Figure 20 DFN10 Mechanical Data and Package Dimensions



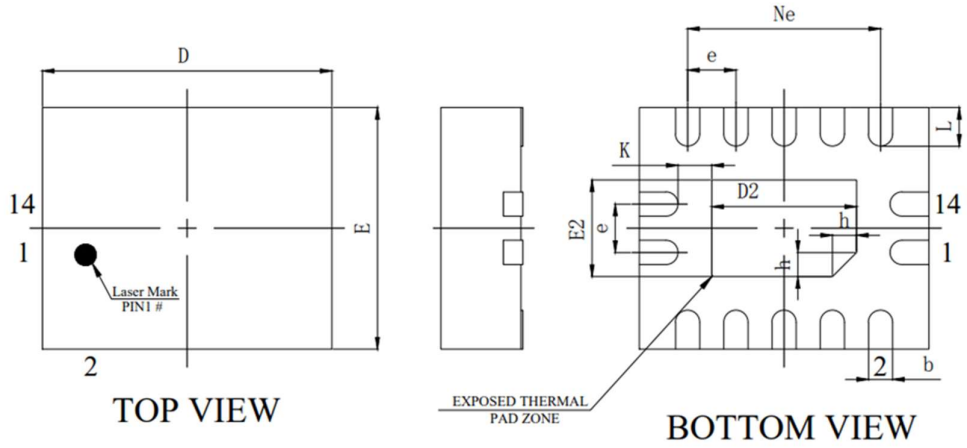

| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | 0.45 | 0.50 | 0.55 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.20 | 0.25 | 0.30 |
| b1 | 0.18REF | | |
| c | 0.150REF | | |
| D | 2.95 | 3.00 | 3.05 |
| D2 | 2.10 | 2.20 | 2.30 |
| e | 0.50BSC | | |
| Ne | 2.00BSC | | |
| E | 2.95 | 3.00 | 3.05 |
| E2 | 1.10 | 1.20 | 1.30 |
| E3 | 0.20 | 0.25 | 0.30 |
| L | 0.30 | 0.40 | 0.50 |
| R | 0.125REF | | |
| R1 | 0.100REF | | |
| K | 0.45 | 0.50 | 0.55 |
| K1 | 0.35REF | | |

Figure 21 SSOP10 Mechanical Data and Package Dimensions



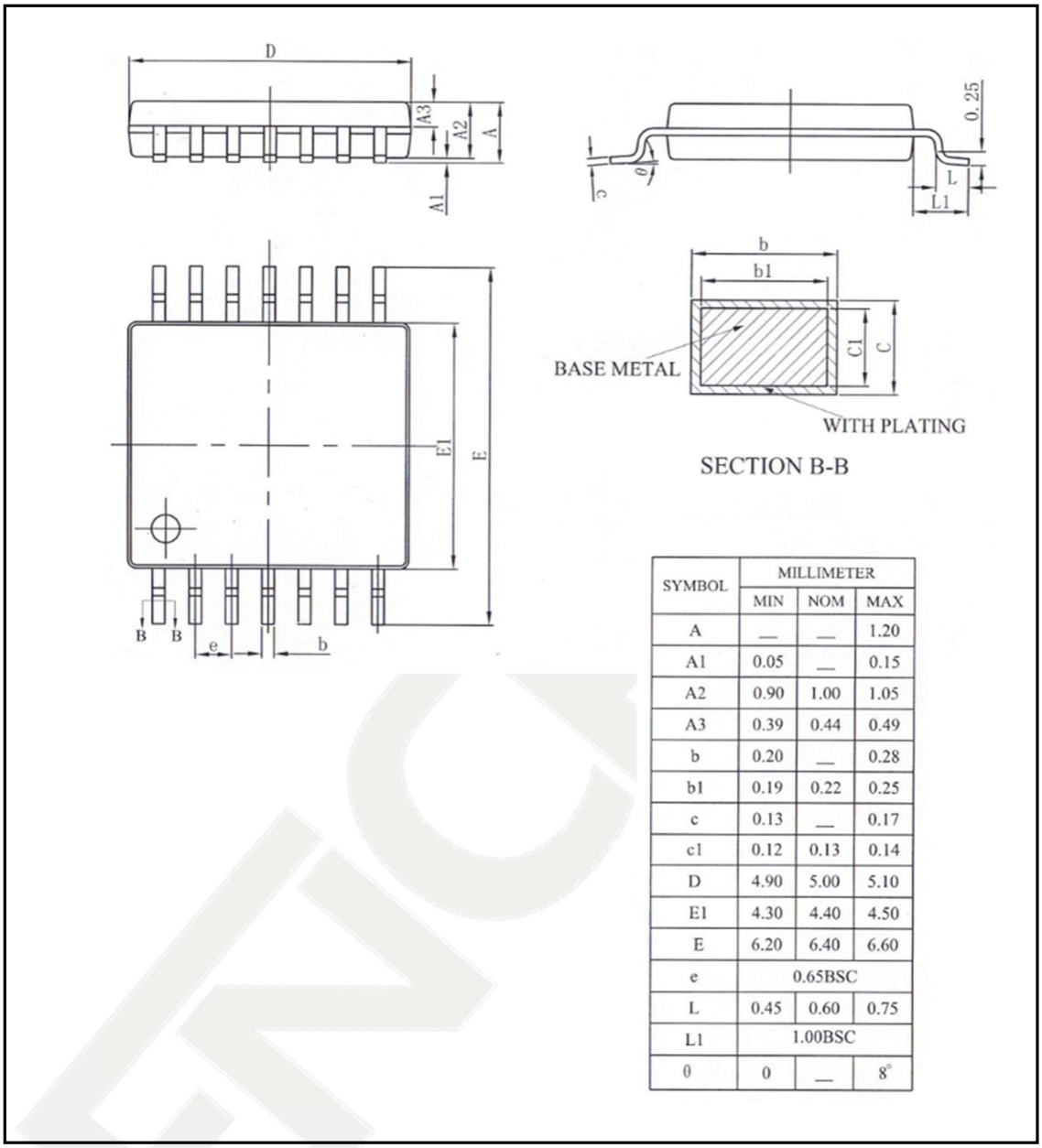

| 机械尺寸/mm Dimensions | | | |
|---|---|---|---|
| 字符 SYMBOL | 最小值 MIN | 典型值 NOMINAL | 最大值 MAX |
| A | 1.50 | 1.60 | 1.70 |
| A1 | 0.02 | - | 0.08 |
| A2 | 1.35 | 1.45 | 1.55 |
| A3 | 0.65 | 0.70 | 0.75 |
| b | 0.35 | - | 0.50 |
| c | 0.19 | - | 0.25 |
| D | 4.80 | 4.90 | 5.00 |
| E | 3.80 | 3.90 | 4.00 |
| E1 | 5.80 | 6.00 | 6.20 |
| e | 1.00 BSC | | |
| h | 0.30 | - | 0.50 |
| L | 0.50 | - | 0.80 |
| θ | 0° | - | 8° |

Figure 22 QFN14 Mechanical Data and Package Dimensions



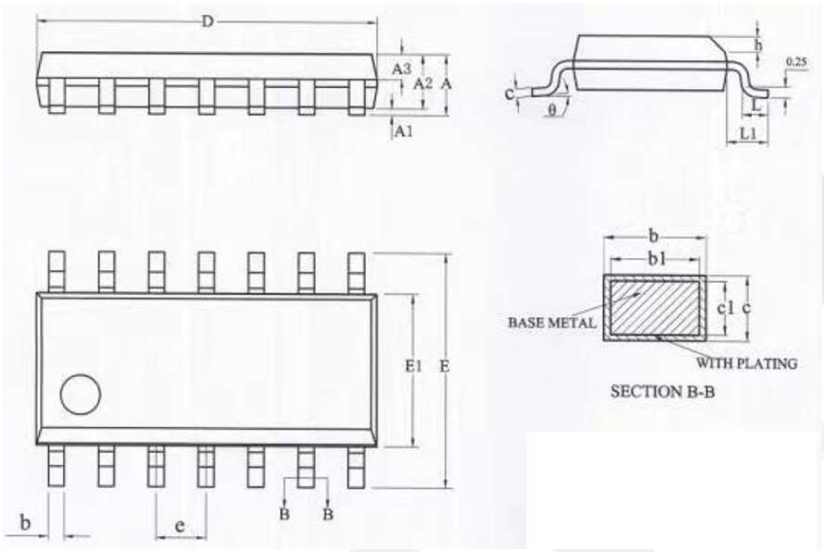

| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | 0.80 | 0.85 | 0.90 |
| A1 | 0 | 0.02 | 0.05 |
| b | 0.20 | 0.25 | 0.30 |
| c | 0.20REF | | |
| D | 2.90 | 3.00 | 3.10 |
| D2 | 1.40 | 1.50 | 1.60 |
| e | 0.50BSC | | |
| Ne | 2.00BSC | | |
| E | 2.40 | 2.50 | 2.60 |
| E2 | 0.90 | 1.00 | 1.10 |
| L | 0.35 | 0.40 | 0.45 |
| h | 0.25REF | | |
| K | 0.20 | – | – |

Figure 23 TSSOP14 Mechanical Data and Package Dimensions



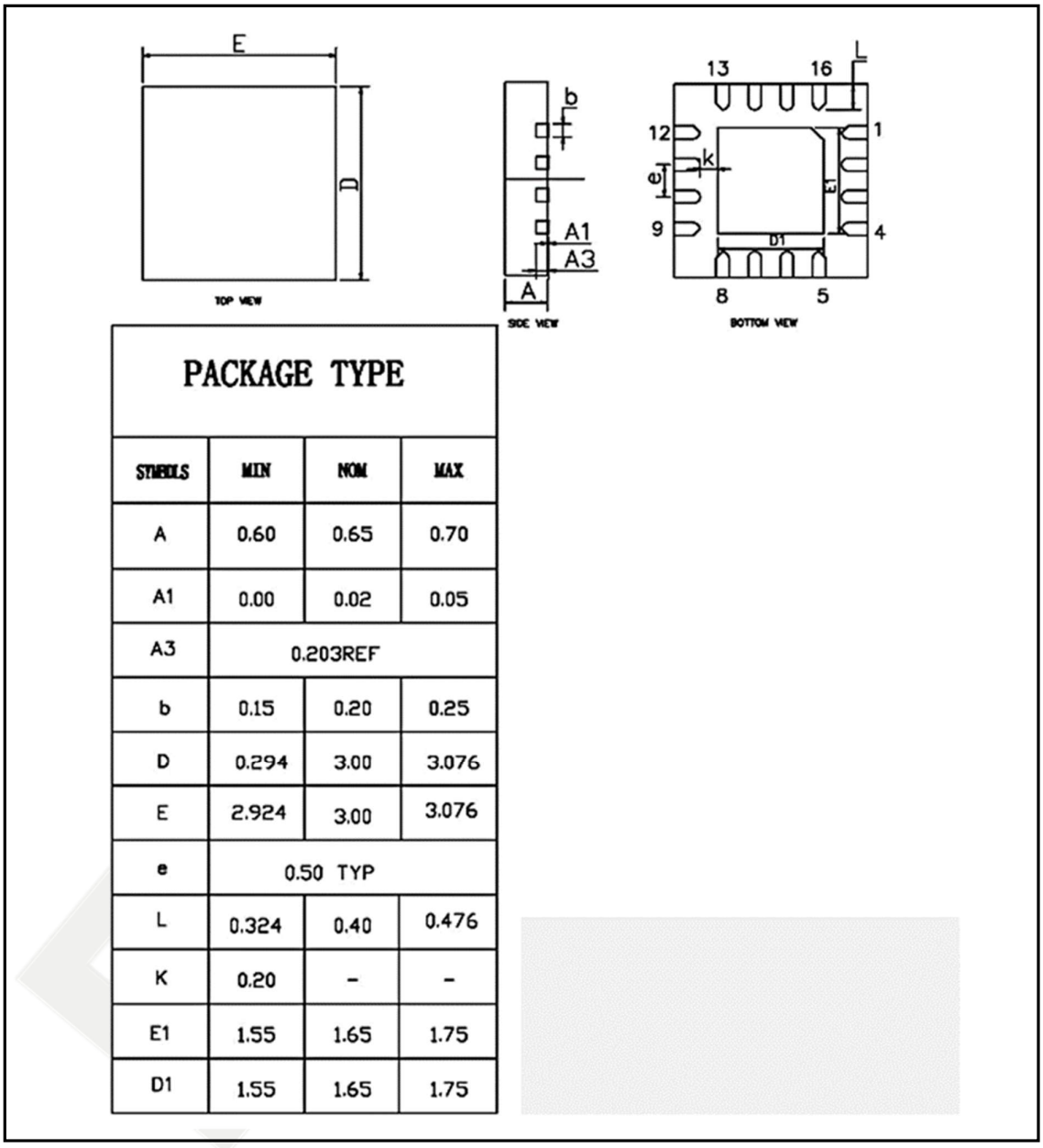

| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | — | — | 1.20 |
| A1 | 0.05 | — | 0.15 |
| A2 | 0.90 | 1.00 | 1.05 |
| A3 | 0.39 | 0.44 | 0.49 |
| b | 0.20 | — | 0.28 |
| b1 | 0.19 | 0.22 | 0.25 |
| c | 0.13 | — | 0.17 |
| c1 | 0.12 | 0.13 | 0.14 |
| D | 4.90 | 5.00 | 5.10 |
| E1 | 4.30 | 4.40 | 4.50 |
| E | 6.20 | 6.40 | 6.60 |
| e | 0.65BSC | | |
| L | 0.45 | 0.60 | 0.75 |
| L1 | 1.00BSC | | |
| θ | 0 | — | 8° |

Figure 24 SOP14 Mechanical Data and Package Dimensions



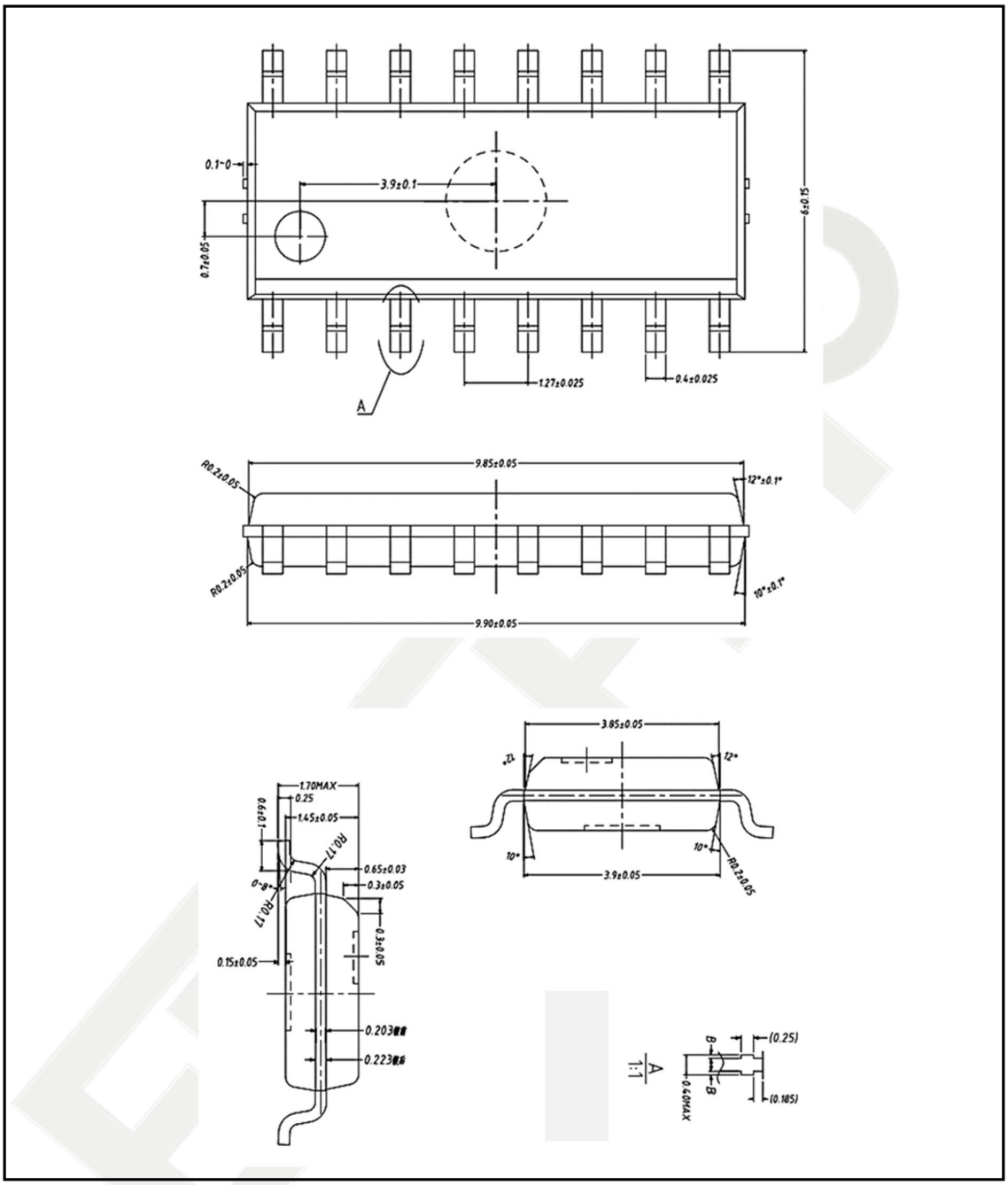

| SYMBOL | MILLIMETER | | |
|---|---|---|---|
| | MIN | NOM | MAX |
| A | — | — | 1.75 |
| A1 | 0.10 | — | 0.225 |
| A2 | 1.30 | 1.40 | 1.50 |
| A3 | 0.60 | 0.65 | 0.70 |
| b | 0.39 | — | 0.47 |
| b1 | 0.38 | 0.41 | 0.44 |
| c | 0.20 | — | 0.24 |
| c1 | 0.19 | 0.20 | 0.21 |
| D | 8.55 | 8.65 | 8.75 |
| E | 5.80 | 6.00 | 6.20 |
| E1 | 3.80 | 3.90 | 4.00 |
| e | 1.27BSC | | |
| h | 0.25 | — | 0.50 |
| L | 0.50 | — | 0.80 |
| L1 | 1.05REF | | |
| θ | 0 | — | 8° |

Figure 25 QFN16 Mechanical Data and Package Dimensions




| PACKAGE TYPE | | | |
|---|---|---|---|
| SYMBOLS | MIN | NOM | MAX |
| A | 0.60 | 0.65 | 0.70 |
| A1 | 0.00 | 0.02 | 0.05 |
| A3 | 0.203REF | | |
| b | 0.15 | 0.20 | 0.25 |
| D | 0.294 | 3.00 | 3.076 |
| E | 2.924 | 3.00 | 3.076 |
| e | 0.50 TYP | | |
| L | 0.324 | 0.40 | 0.476 |
| K | 0.20 | - | - |
| E1 | 1.55 | 1.65 | 1.75 |
| D1 | 1.55 | 1.65 | 1.75 |

Figure 26 SOP16 Mechanical Data and Package Dimensions



## 5.2 Marking Information

Figure 27 eSOP8 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32062A” characters to indicate AXOP32062A

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 28 DFN8 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “22B” characters to indicate AXOP32062B

Line 2: “y” to indicate year of production

“ww” to indicate week of production

Figure 29 SOP8 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32062C” characters to indicate AXOP32062C

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 30 SOT23-8L Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

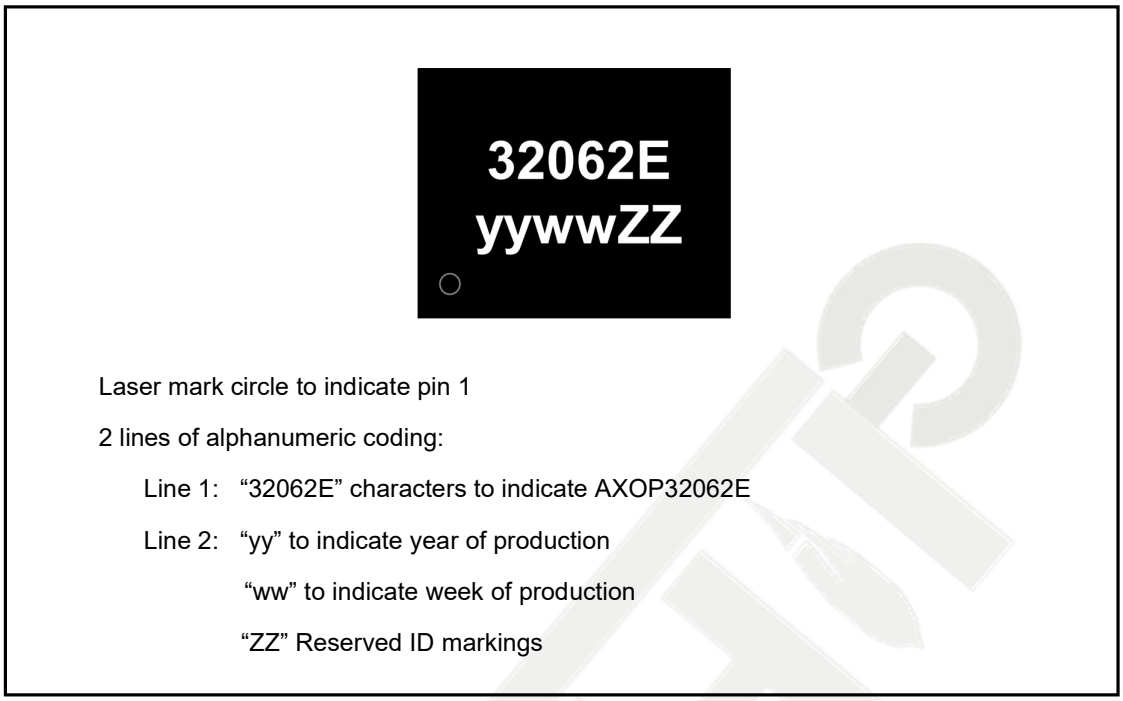
Line 1: “32062D” characters to indicate AXOP32062D

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 31 DIP8 Marking Information




Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

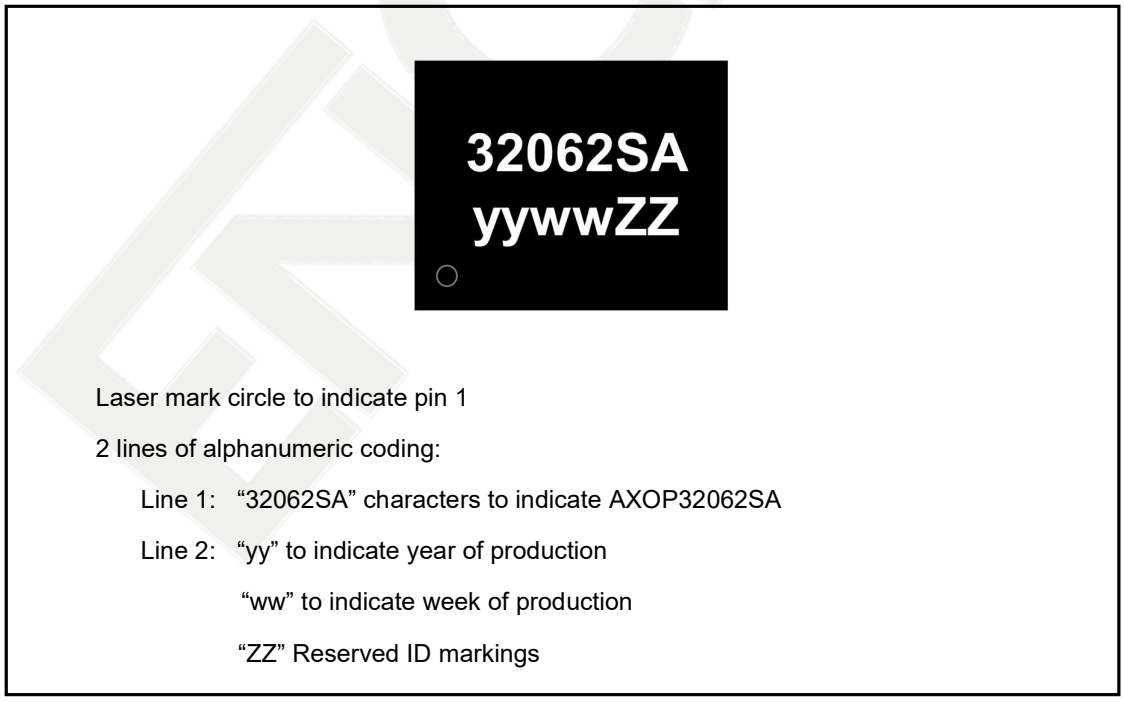
Line 1: “32062E” characters to indicate AXOP32062E

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 32 DFN10 Marking Information




Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32062SA” characters to indicate AXOP32062SA

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 33 SSOP10 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: "32062SB" characters to indicate AXOP32062SB

Line 2: "yy" to indicate year of production

"ww" to indicate week of production

"ZZ" Reserved ID markings

Figure 34 QFN14 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: "32064A" characters to indicate AXOP32064A

Line 2: "yy" to indicate year of production

"ww" to indicate week of production

"ZZ" Reserved ID markings

Figure 35 TSSOP14 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32064B” characters to indicate AXOP32064B

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 36 SOP14 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32064C” characters to indicate AXOP32064C

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 37 QFN16  Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32064SA” characters to indicate AXOP32064SA

Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

Figure 38 SOP16 Marking Information


Laser mark circle to indicate pin 1

2 lines of alphanumeric coding:

Line 1: “32064SB” characters to indicate AXOP32064SB

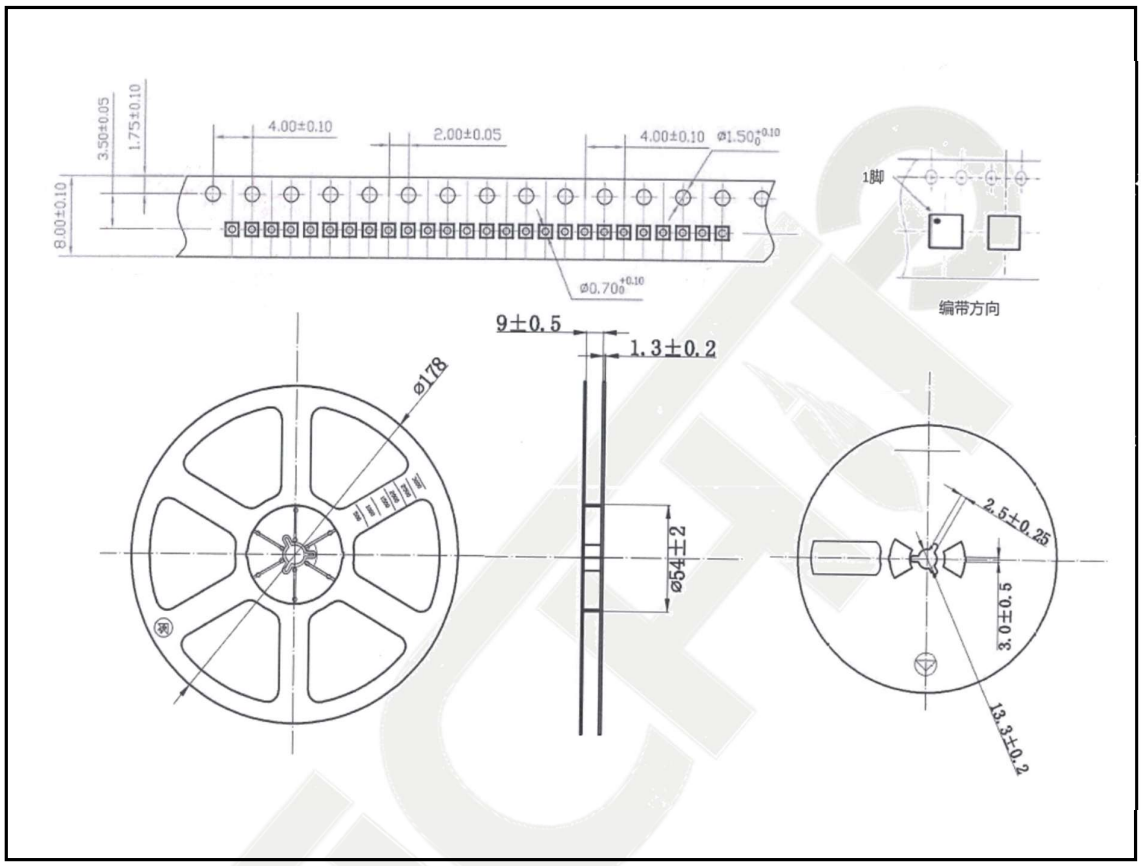
Line 2: “yy” to indicate year of production

“ww” to indicate week of production

“ZZ” Reserved ID markings

# 6 Packing Information

Figure 39 Reel Packing Information



# 7 Revision History

Table 6 Document Revision History

| Date | Version | Description |
|---|---|---|
| May 2023 | 1.00 | V1.00 version. |
| | | |
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| | | |
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