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# Product Specification

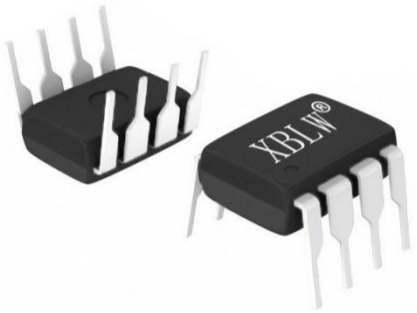
## XBLW JRC4558

Dual Operational Amplifier

WEB | www.xinboleic.com

## Descriptions

JRC4558 is a low noise, high gain, dual channel operational amplifier, which is internally compensated and built on a single silicon chip by using advanced extensional technology. It is suitable for single power supply with wide power supply voltage range, and also suitable for dual power supply working mode. Under the recommended working conditions, the power supply current is independent of the power supply voltage. The application range of JRC4558 includes active filter, compensation amplifier, audio preamplifier, equalization amplifier, and various linear amplifiers in electronic instruments. It is available in SOP8 and DIP8 package.



DIP-8

SOP-8

## Feature

- Internal Frequency Compensation
- High DC Voltage Gain: 100dB (Typ.)
- Unit Gain Bandwidth: 3.5MHz
- High Input Impedance: 5MΩ (Typ.)
- Low Input Bias Current
- Low Input Offset Voltage And Current
- Bipolar Designation
- Wide Common-Mode Input Voltage, Including Ground
- Large Swing of Output Voltage: 0 ~ (VCC - 1.5V)
- Wide Differential-Mode Input Voltage Range,Equal To Power Supply Range

## Applications

- Active Filter
- Compensation Amplifier
- Audio Preamplifier
- Electronic Instruments

## Ordering Information

| Product Model | Package Type | Marking | Packing | Packing Qty |
|---|---|---|---|---|
| XBLW JRC4558N | DIP-8 | JRC4558N | Tube | 2000pcs/Box |
| XBLW JRC4558DTR | SOP-8 | JRC4558 | Tape | 2500pcs/Reel |

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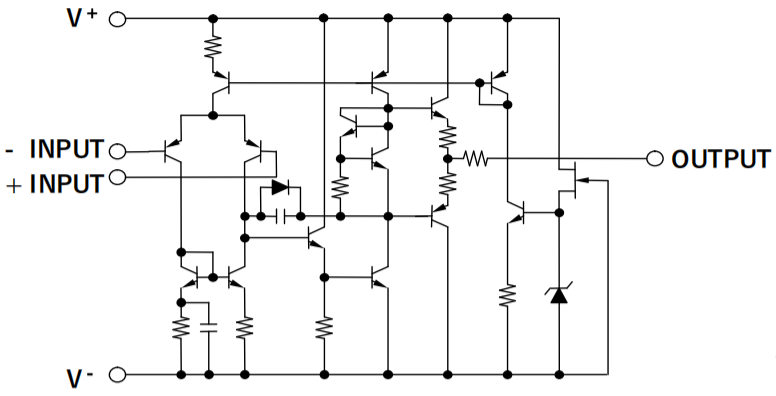
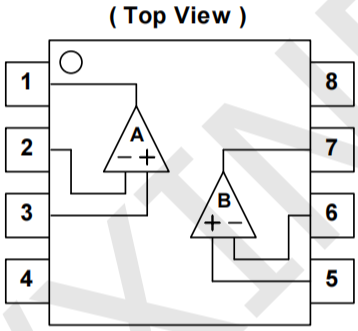
## SCEMATIC DIAGRAM (ONE CHANNEL)




## PINS CONFIGURATION




| No. | Name | I/O | Description |
|---|---|---|---|
| 1 | OUT1 | O | Output of operational amplifier 1。 |
| 2 | IN1（-） | I | Negative input of of operational amplifier 1 |
| 3 | IN1（+） | I | Positive input of of operational amplifier 1 |
| 4 | Vee | P | Ground |
| 5 | IN2（+） | I | Positive input of of operational amplifier 2 |
| 6 | IN2（-） | I | Negative input of of operational amplifier 2 |
| 7 | OUT2 | O | Output of operational amplifier 2 |
| 8 | Vcc | P | Positive power supply |

## EXTREME RATINGS:

| Characteristic | Symbol | Value |
|---|---|---|
| Power supply voltage | Vcc/Vee | ±18V |
| Differential Input Voltage | VI(DIFF) | ±18V |
| Input pin voltage | VI | ±15V |
| Ambient Temperature | Tamb | -40~+85℃ |
| Storage temperature range | Tstg | -65~+150℃ |

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## RECOMMENDED OPERATING CONDITIONS

Tamb=25℃,unless otherwise specified.

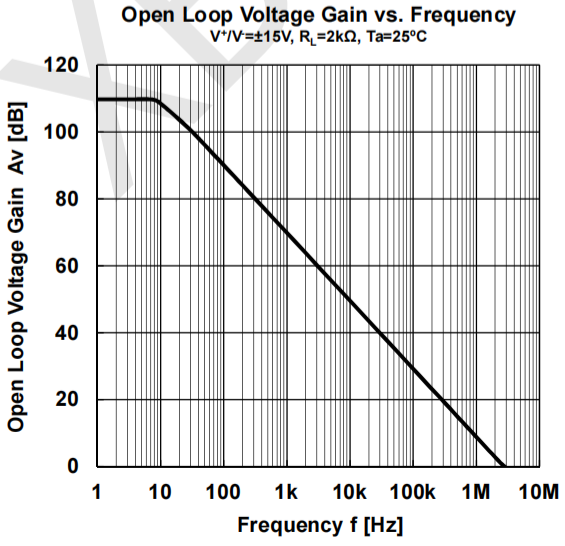
| Parameter | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Operating power supply voltage | Vcc/Vee | | ±4 | | ±18 | V |

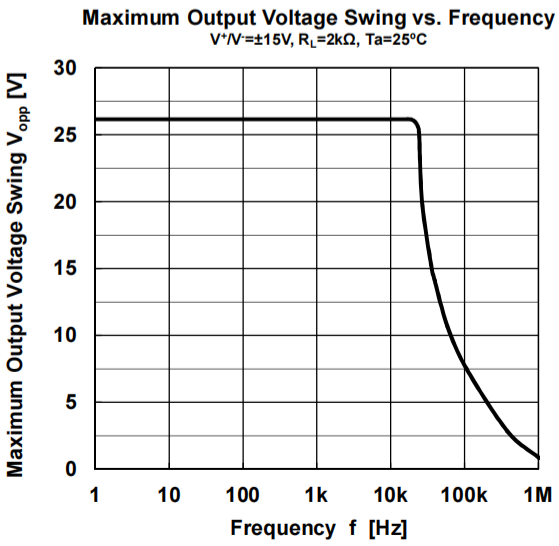
## ELECTRICAL CHARACTERISTICS

Vcc=6V， Tamb=25℃,unless otherwise specified.

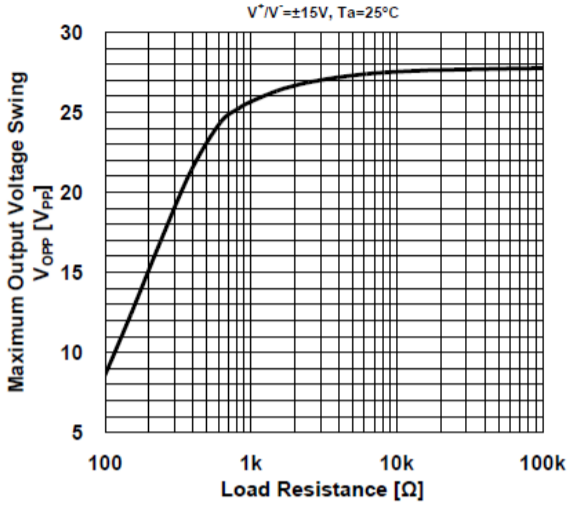
| Parameter | | Symbol | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Power Supply Current | | Icc | RL = ∞ | | 3.5 | 5.7 | mA |
| Input Offset Voltage | | VIO | RS<10kΩ | - | 2 | 6.0 | mV |
| Input Offset Current | | IIO | Vcm=0V | | 5 | 200 | nA |
| Input Bias Current | | IBIAS | Vcm=0V | - | 30 | 500 | nA |
| Input Current | Source | Isource | | 40 | | 80 | mA |
| | Sink | Isink | | -80 | | -50 | mA |
| Input Common Mode Voltage | | VI( R ) | | - | ±12 | ±13 | V |
| Large Signal Voltage Gain | | Gv | Vo (p-p) =±10V,RL<2kΩ | 80 | 100 | | dB |
| Output Voltage Swing | | Vo (p-p) | RL>10kΩ | ±12 | ±14 | - | V |
| | | | RL>2kΩ | ±10 | ±13 | | |
| Common Mode Rejection Ratio | | CMRR | RS<10kΩ | 70 | 95 | - | dB |
| Power Supply Rejection Ratio | | PSRR | RS<10kΩ | 75 | 100 | | dB |
| Conversion Rate | | SR | | | 1.5 | | V/uS |
| Gain Bandwidth Product | | GBP | | | 3.5 | | MHz |

## TYPICAL PERFORMANCE

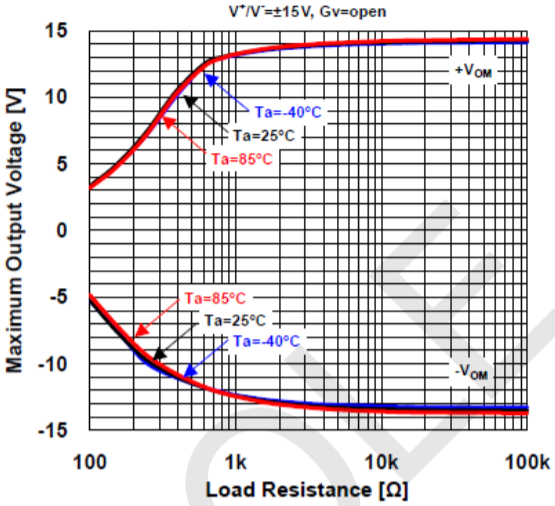


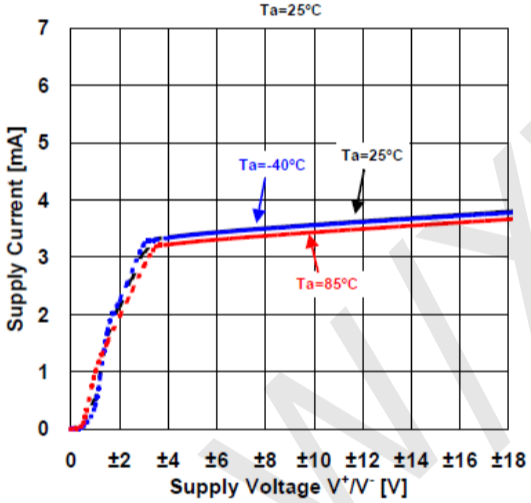
Maximum Output Voltage Swing vs. Load Resistance



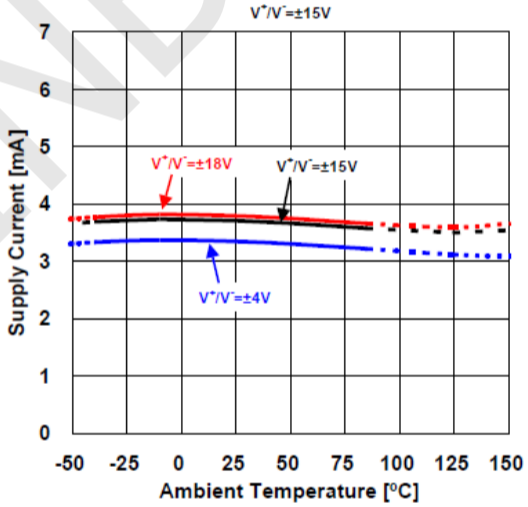

Maximum Output Voltage vs. Load Resistance



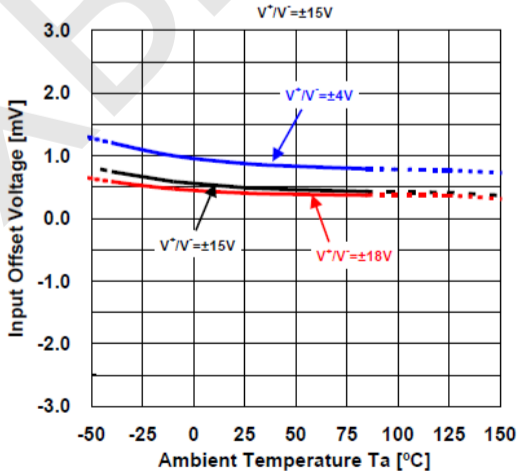

Supply Current vs. Supply Voltage



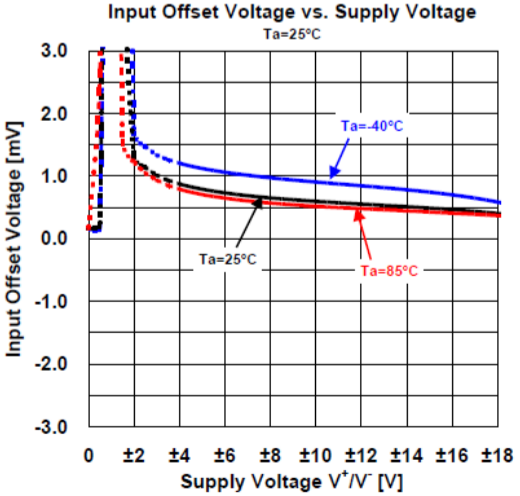

Supply Current vs. Temperature




Input Offset Voltage vs. Temperature




Input Offset Voltage vs. Supply Voltage

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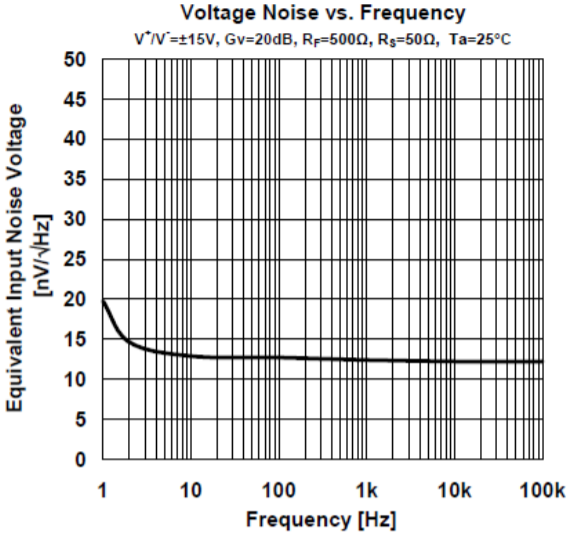
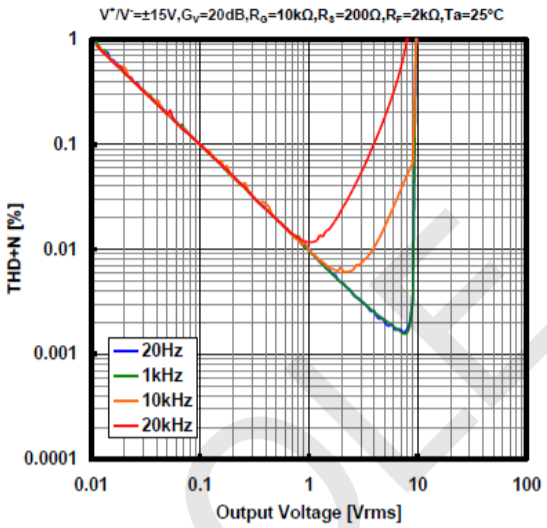
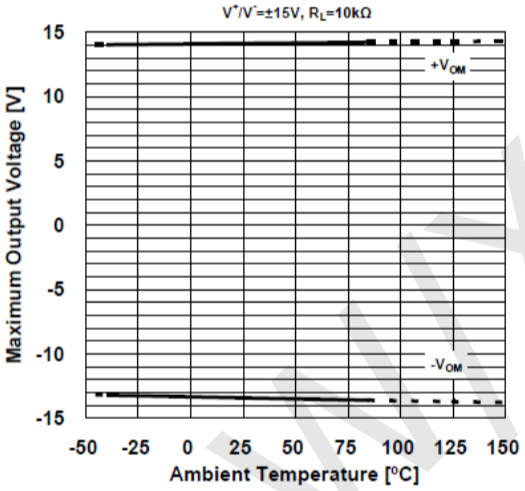
Voltage Noise vs. Frequency



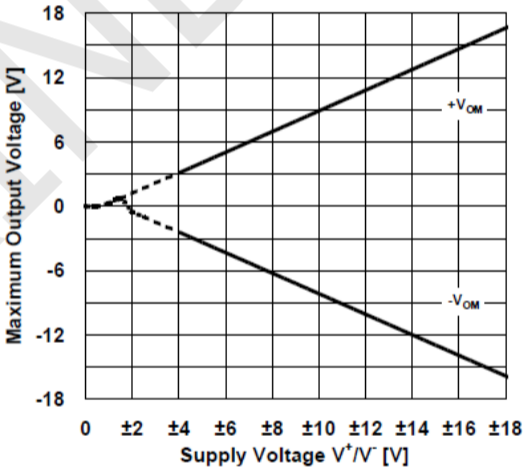

THD+N vs. Output Voltage



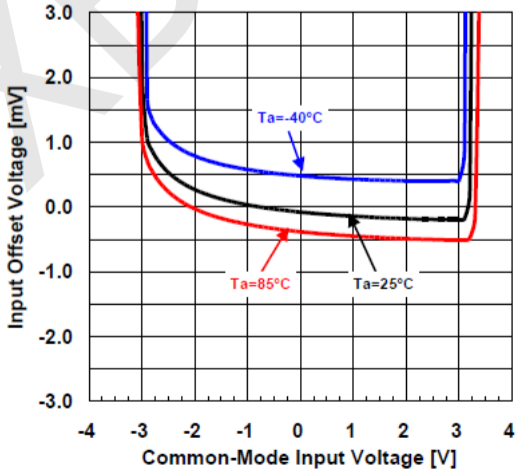

Maximum Output Voltage Swing vs. Temperature



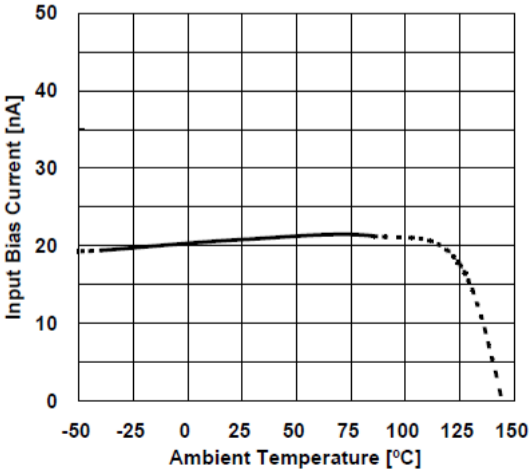

Maximum Output Voltage Swing vs. Supply Voltage




Input Offset Voltage vs. Common-Mode Input Voltage




Input Bias Current vs. Temperature

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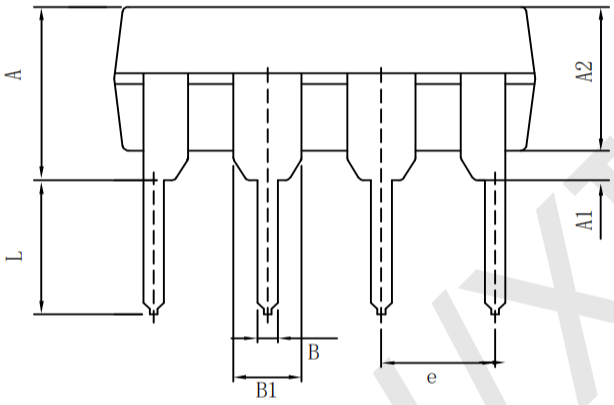
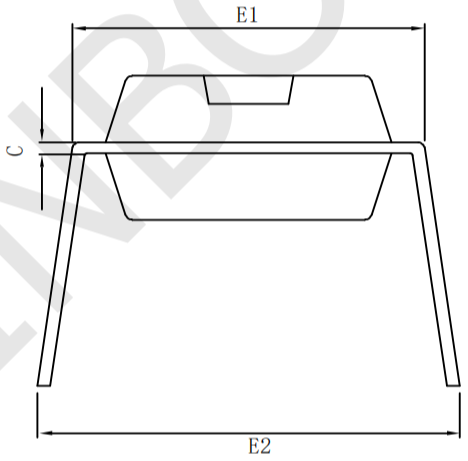
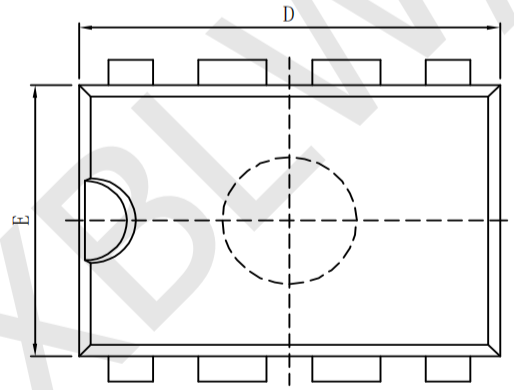
## Package Information

- DIP-8

| Symbol \ Size | Dimensions In Millimeters | | Symbol \ Size | Dimensions In Inches | |
|---|---|---|---|---|---|
| | Min(mm) | Max(mm) | | Min(in) | Max(in) |
| A | 3.710 | 4.310 | A | 0.146 | 0.170 |
| A1 | 0.510 | | A1 | 0.020 | |
| A2 | 3.200 | 3.600 | A2 | 0.126 | 0.142 |
| B | 0.380 | 0.570 | B | 0.015 | 0.022 |
| B1 | 1.524(BSC) | | B1 | 0.060(BSC) | |
| C | 0.204 | 0.360 | C | 0.008 | 0.014 |
| D | 9.000 | 9.400 | D | 0.354 | 0.370 |
| E | 6.200 | 6.600 | E | 0.244 | 0.260 |
| E1 | 7.320 | 7.920 | E1 | 0.288 | 0.312 |
| e | 2.540(BSC) | | e | 0.100(BSC) | |
| L | 3.000 | 3.600 | L | 0.118 | 0.142 |
| E2 | 8.400 | 9.000 | E2 | 0.331 | 0.354 |

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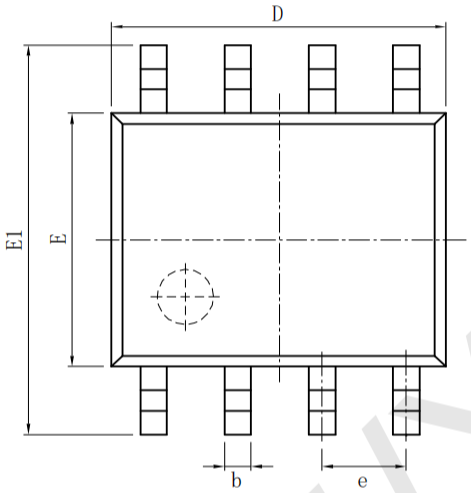
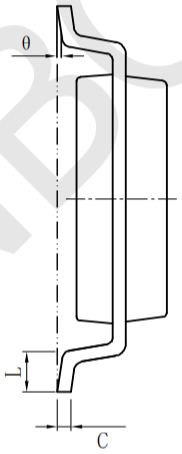
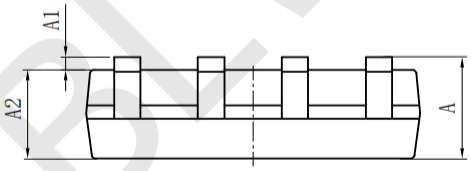
- SOP-8

| Size / Symbol | Dimensions In Millimeters | | Size / Symbol | Dimensions In Inches | |
|---|---|---|---|---|---|
| | Min(mm) | Max(mm) | | Min(in) | Max(in) |
| A | 1.350 | 1.750 | A | 0.053 | 0.069 |
| A1 | 0.100 | 0.250 | A1 | 0.004 | 0.010 |
| A2 | 1.350 | 1.550 | A2 | 0.053 | 0.061 |
| b | 0.330 | 0.510 | b | 0.013 | 0.020 |
| c | 0.170 | 0.250 | c | 0.006 | 0.010 |
| D | 4.700 | 5.100 | D | 0.185 | 0.200 |
| E | 3.800 | 4.000 | E | 0.150 | 0.157 |
| E1 | 5.800 | 6.200 | E1 | 0.228 | 0.224 |
| e | 1.270(BSC) | | e | 0.050(BSC) | |
| L | 0.400 | 1.270 | L | 0.016 | 0.050 |
| θ | 0° | 8° | θ | 0° | 8° |

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