

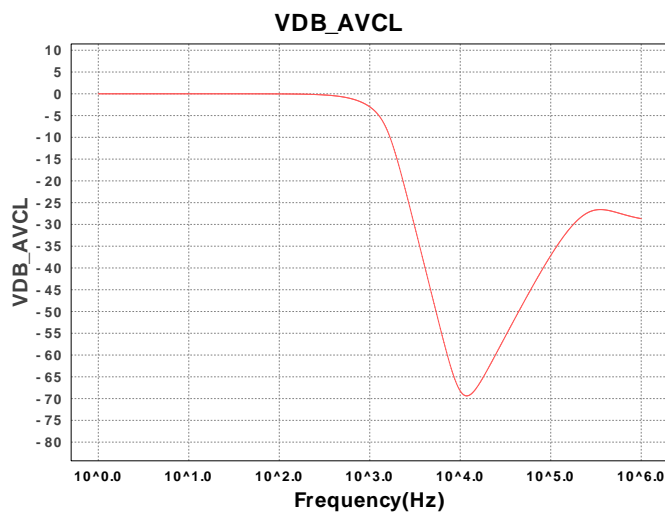
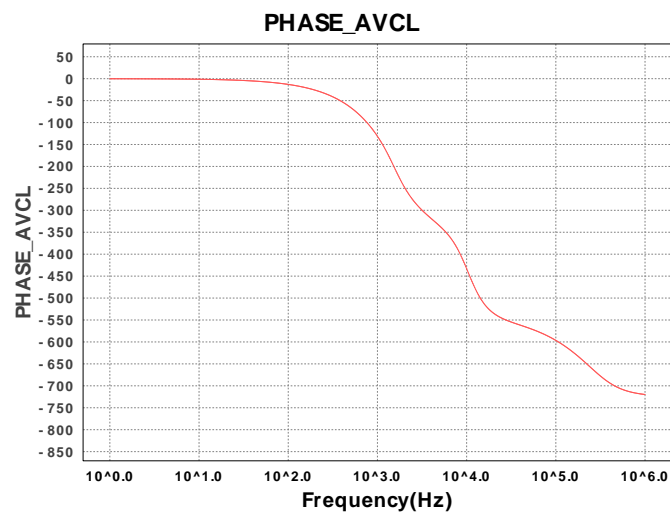
Electrical BOM

| # | Name | Manufacturer | Part Number | Properties | Qty | Price | Footprint |
|-----|-------|-------------------|---------------------------------------|--|-----|--------|-------------------------|
| 1. | A1_S1 | Texas Instruments | LMC6572BIM | GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V | 1 | \$0.55 | SOIC 0 mm ² |
| 2. | A1_S2 | Texas Instruments | LMC6572BIM | GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V | 1 | \$0.55 | SOIC 0 mm ² |
| 3. | C1_S1 | Kemet | C0603C103J5RACTU Series= X7R | Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A | 1 | \$0.01 | 0603 5 mm ² |
| 4. | C1_S2 | Kemet | C0603C103J5RACTU Series= X7R | Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A | 1 | \$0.01 | 0603 5 mm ² |
| 5. | C2_S1 | MuRata | GRM3195C1H133JA01D Series= C0G/NP0 | Cap= 13.0 nF VDC= 50.0 V IRMS= 0.0 A | 1 | \$0.11 | 1206 11 mm ² |
| 6. | C2_S2 | AVX | 06033C473JAT2A Series= X7R | Cap= 47.0 nF ESR= 52.0 mOhm VDC= 25.0 V IRMS= 0.0 A | 1 | \$0.09 | 0603 5 mm ² |
| 7. | R1_S1 | Vishay-Dale | CRCW040210K5FKED Series= CRCW..e3 | Res= 10.5 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |
| 8. | R1_S2 | Vishay-Dale | CRCW04023K83FKED Series= CRCW..e3 | Res= 3.83 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |
| 9. | R2_S1 | Vishay-Dale | CRCW040216K2FKED Series= CRCW..e3 | Res= 16.2 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |
| 10. | R2_S2 | Vishay-Dale | CRCW04025K62FKED Series= CRCW..e3 | Res= 5.62 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |

Simulation Parameters

| # | Name | Parameter Name | Description | Values |
|----|---------|----------------|-----------------------------|--------|
| 1. | Vsignal | AC | AC Voltage Source Amplitude | 1 V |

| # | Name | Parameter Name | Description | Values |
|----|------|----------------|-----------------------------|--------|
| | | DC | AC Voltage Source DC Offset | 0.0 V |
| 2. | Vcc | V | Vcc Supply Rail Value | 5.0 V |
| 3. | Vee | V | Vee Supply Rail Value | -5.0 V |



Design Inputs

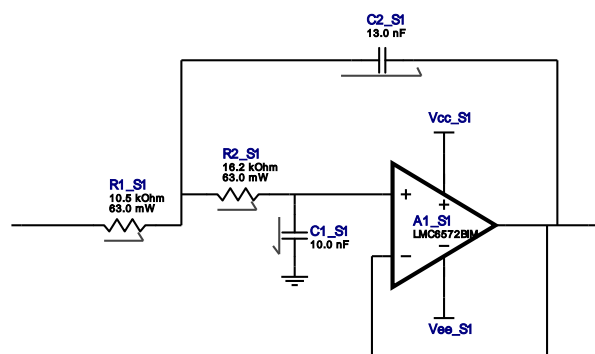
| # | Name | Value | Description |
|-----|---------------------|------------------|---|
| 1. | FilterType | Lowpass | |
| 2. | FilterResponse | Linear_Phase_005 | |
| 3. | FilterOrder | 4.0 | |
| 4. | FilterTopology | Sallen_Key | |
| 5. | NumberOfStages | 2.0 | |
| 6. | PassbandFrequency | 1,000 Hz | |
| 7. | StopbandAttenuation | -45.0 dB | |
| 8. | StopbandFrequency | 5.0 kHz | |
| 9. | Gain | 1.0 V/V | |
| 10. | DualSupply | +/-5.0 V | Power supply(s) to active chips |
| 11. | ResistorTolerance | E96 | Resistor series - 1% Passive resistor tolerance |
| 12. | CapacitorTolerance | E24 | Capacitor series - 5% Passive capacitance tolerance |
| 13. | SeedCapacitance | 10.0 nF | Seed Capacitance to start design of filter |

Design Assistance

1. **LMC6572BIM** Product Folder : <http://www.ti.com/product/LMC6572> : contains the data sheet and other resources.

Filter Stage :1

| | |
|------------------|------------|
| Cutoff Frequency | 1.075 kHz |
| Min GBW Req'd | 60.2 kHz |
| Stage Gain | 1.0 V/V |
| Stage Q | 560.0 m |
| Stage Topology | Sallen_Key |

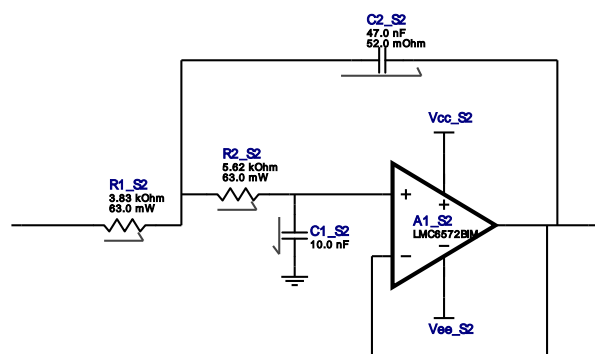


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| 3. | C2_S1 | MuRata | GRM3195C1H133JA01D Series= C0G/NP0 | Cap= 13.0 nF VDC= 50.0 V IRMS= 0.0 A | 1 | \$0.11 | 1206 11 mm ² |
| 4. | R1_S1 | Vishay-Dale | CRCW040210K5FKED Series= CRCW..e3 | Res= 10.5 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |
| 5. | R2_S1 | Vishay-Dale | CRCW040216K2FKED Series= CRCW..e3 | Res= 16.2 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |

Filter Stage :2

| | |
|------------------|-------------|
| Cutoff Frequency | 1.586 kHz |
| Min GBW Req'd | 169.702 kHz |
| Stage Gain | 1.0 V/V |
| Stage Q | 1.07 |
| Stage Topology | Sallen_Key |



Electrical BOM

| # | Name | Manufacturer | Part Number | Properties | Qty | Price | Footprint |
|----|-------|-------------------|--------------------------------------|--|-----|--------|------------------------|
| 1. | A1_S2 | Texas Instruments | LMC6572BIM | GbwTyp= 220.0 mMHz VccMin= 2.7 V VccMax= 10.0 V | 1 | \$0.55 | SOIC 0 mm ² |
| 2. | C1_S2 | Kemet | C0603C103J5RACTU Series= X7R | Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A | 1 | \$0.01 | 0603 5 mm ² |
| 3. | C2_S2 | AVX | 06033C473JAT2A Series= X7R | Cap= 47.0 nF ESR= 52.0 mOhm VDC= 25.0 V IRMS= 0.0 A | 1 | \$0.09 | 0603 5 mm ² |
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| 5. | R2_S2 | Vishay-Dale | CRCW04025K62FKED Series= CRCW..e3 | Res= 5.62 kOhm Power= 63.0 mW Tolerance= 1.0% | 1 | \$0.01 | 0402 3 mm ² |

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