NTC Type SMD

Thermometrics Surface Mount Devices

Features

- Nickel barrier tin plated terminations for soldering
- High sensitivity to changes in temperature
- Wide operating temperature range -40°F to 257°F (-40°C to 125°C)
- Rugged construction
- Available in other material systems
- Intended for temperature measurement, control and compensation
- Suitable for standard soldering techniques
- Excellent solderability without “tombstoning”
- Ceramic between electrodes glass coated for improved stability
- Supplied in tape-and-reel packaging
Type NHQ Specification

Surface mount chip 1206 size

Description

A range of 1206 size surface mount NTC chip thermistors. The terminations are nickel barrier with tin plating.

General

Soldering Recommendations

- Maximum storage time in closed package: One year
- Maximum storage time exposed to ambient conditions of 59°F to 86°F (15°C to 30°C), 15% to 70% RH: 30 days
- Drying prior to soldering: Not to exceed 48h at 176°F (80°C) or 16h at 212°F (100°C) or 8h at 257°F (125°C)
- Flux type: R or RMA

Flow Soldering Conditions

- Preheat temperature: 176°F to 302°F (80°C to 150°C)
- Maximum rate of temperature change: 4.5°F/s or 2.5°C/s
- Maximum solder temperature: 509°F (265°C)
- Maximum dwell time: 10 seconds
- Cooling in ambient or air flow of 5m/s

Reflow Soldering Conditions

- Method infrared, hot gas, vapor
- Maximum rate of preheat temperature change: 4.5°F/s or 2.5°C/s
- Maximum temperature: 437°F (225°C)
- Maximum time above: 392°F (200°C) 30 seconds
- Maximum radiant flux: (0.1 to 100 W µ) 5 W/cm²
- Maximum hot air temperature: 527°F (275°C) at 4 m/s
- Maximum vapor temperature: 419°F (215°C)
- Maximum rate of cooling: 4.5°F/s or 2.5°C/s

Cleaning

Ultrasonic cleaning in methanol or isopropanol not exceeding 40 kHz for 5 minutes, or aqueous cleaning not exceeding 158°F (70°C) for 7 minutes (recommended).

Data

- Resistance tolerance at 77°F (25°C) ±5%; for ±10% replace T5 by T10 in code.
- Tolerance on B value ±200 K
- Minimum temperature: -40°F (-40°C)
- Maximum temperature: 257°F (125°C)
- Dissipation factor: 3 mW/K
- Time constant: 8 seconds maximum
Type NHQM Specification

Surface mount chip 0805 size

Description

A range of 0805 size surface mount NTC chip thermistors. The terminations are nickel barrier with tin plating.

General

Soldering Recommendations

• Maximum storage time in closed package: One year
• Maximum storage time exposed to ambient conditions of 59°F to 86°F (15°C to 30°C), 15% to 70% RH: 30 days
• Drying prior to soldering: Not to exceed 48h at 176°F (80°C) or 16h at 212°F (100°C) or 8h at 257°F (125°C)
• Flux type: R or RMA

Flow Soldering Conditions

• Preheat temperature: 176°F to 302°F (80°C to 150°C)
• Maximum rate of temperature change: 4.5°F/s or 2.5°C/s
• Maximum solder temperature: 509°F (265°C)
• Maximum dwell time: 10 seconds
• Cooling in ambient or air flow of 5m/s

Reflow Soldering Conditions

• Method infrared, hot gas, vapor
• Maximum rate of preheat temperature change: 4.5°F/s or 2.5°C/s
• Maximum temperature: 437°F (225°C)
• Maximum time above: 392°F (200°C) 30 seconds
• Maximum radiant flux: (0.1 to 100 W/µ) 5 W/µ/cm²
• Maximum hot air temperature: 527°F (275°C) at 4 m/s
• Maximum vapor temperature: 419°F (215°C)
• Maximum rate of cooling: 4.5°F/s or 2.5°C/s

Cleaning

Ultrasonic cleaning in methanol or isopropanol not exceeding 40 kHz for 5 minutes, or aqueous cleaning not exceeding 158°F (70°C) for 7 minutes (recommended).

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Data

• Resistance tolerance at 77°F (25°C) ±5%; for ±10% replace T5 by T10 in code.
• Tolerance on B value ±200 K
• Minimum temperature: -40°F (-40°C)
• Maximum temperature: 257°F (125°C)
• Dissipation factor: 1.5 mW/K
• Time constant: 5 seconds maximum
Type NHQMM Specification

Surface mount chip 0603 size

Description

A range of 0603 size surface mount NTC chip thermistors. The terminations are nickel barrier with tin plating.

General

Soldering Recommendations
- Maximum storage time in closed package: One year
- Maximum storage time exposed to ambient conditions of 59°F to 86°F (15°C to 30°C), 15% to 70% RH: 30 days
- Drying prior to soldering: Not to exceed 48h at 176°F (80°C) or 16h at 212°F (100°C) or 8h at 257°F (125°C)
- Flux type: R or RMA

Flow Soldering Conditions
- Preheat temperature: 176°F to 302°F (80°C to 150°C)
- Maximum rate of temperature change: 4.5°F/s or 2.5°C/s
- Maximum solder temperature: 509°F (265°C)
- Maximum dwell time: 10 seconds
- Cooling in ambient or air flow of 5m/s

Reflow Soldering Conditions
- Method infrared, hot gas, vapor
- Maximum rate of preheat temperature change: 4.5°F/s or 2.5°C/s
- Maximum temperature: 437°F (225°C)
- Maximum time above: 392°F (200°C) 30 seconds
- Maximum radiant flux: (0.1 to 100 W/µ) 5 W/µcm²
- Maximum hot air temperature: 527°F (275°C) at 4 m/s
- Maximum vapor temperature: 419°F (215°C)
- Maximum rate of cooling: 4.5°F/s or 2.5°C/s

Cleaning

Ultrasonic cleaning in methanol or isopropanol not exceeding 40 kHz for 5 minutes, or aqueous cleaning not exceeding 158°F (70°C) for 7 minutes (recommended).

Data
- Resistance tolerance at 77°F (25°C) ±5%; for ±10% replace T5 by T10 in code
- Tolerance on B value ±200 K
- Minimum temperature: -40°F (-40°C)
- Maximum temperature: 257°F (125°C)
- Dissipation factor: 1.2 mW/K
- Time constant: 4 seconds maximum
Type NHQT Specification

Surface mount chip 0402 size

Description

A range of 0402 size surface mount NTC chip thermistors. The terminations are nickel barrier with tin plating.

General

Soldering Recommendations

- Maximum storage time in closed package: One year
- Maximum storage time exposed to ambient conditions of 59°F to 86°F (15°C to 30°C), 15% to 70% RH: 30 days
- Drying prior to soldering: Not to exceed 48h at 176°F (80°C) or 16h at 212°F (100°C) or 8h at 257°F (125°C)
- Flux type: R or RMA

Flow Soldering Conditions

- Preheat temperature: 176°F to 302°F (80°C to 150°C)
- Maximum rate of temperature change: 4.5°F/s or 2.5°C/s
- Maximum soldering temperature: 509°F (265°C)
- Maximum dwell time: 10 seconds
- Cooling in ambient or air flow of 5m/s

Reflow Soldering Conditions

- Method infrared, hot gas, vapor
- Maximum rate of preheat temperature change: 4.5°F/s or 2.5°C/s
- Maximum temperature: 437°F (225°C)
- Maximum time above: 392°F (200°C) 30 seconds
- Maximum radiant flux: (0.1 to 100 Wµ) 5 Wµ/cm²
- Maximum hot air temperature: 527°F (275°C) at 4 m/s
- Maximum vapor temperature: 419°F (215°C)
- Maximum rate of cooling: 4.5°F/s or 2.5°C/s

Cleaning

Ultrasonic cleaning in methanol or isopropanol not exceeding 40 kHz for 5 minutes, or aqueous cleaning not exceeding 158°F (70°C) for 7 minutes (recommended).

Data

- Resistance tolerance at 77°F (25°C) ±5%; for ±10% replace T5 by T10 in code
- Tolerance on B value ±200 K
- Minimum temperature: -40°F (-40°C)
- Maximum temperature: 257°F (125°C)
- Dissipation factor: 1.5 mW/K
- Time constant: 4 seconds maximum

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