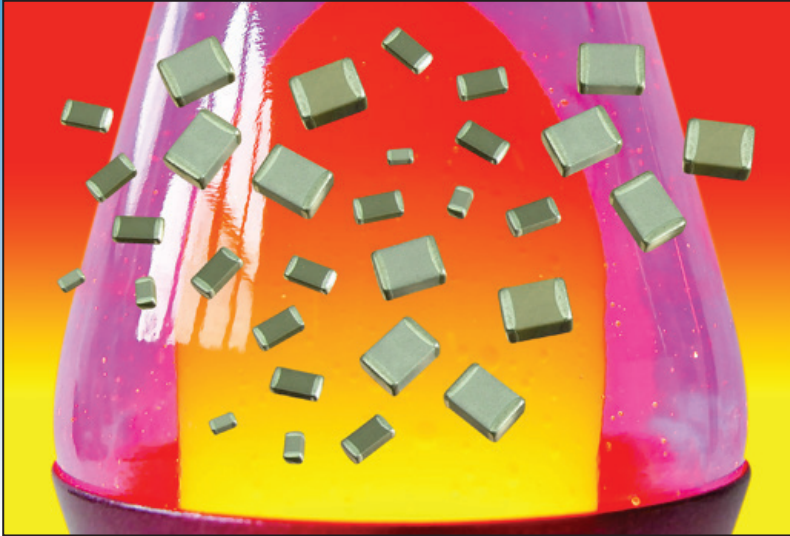


**RoHS
Compliant
Pb Free
Sn Finish**

HiT range of 200°C MLC capacitors



COG/NP0 & X7R MLCCs

The HiT range of multilayer ceramic capacitors is suitable for a variety of high temperature applications including: oil exploration, geothermal, military, automotive under-hood and avionics.

This range is manufactured to exacting standards using our unique screen printing process. This provides a high quality component suitable for demanding applications.

Specification

Capacitance Values

| COG/NP0 | X7R |
|--------------|---------------|
| 4.7pF - 47nF | 100pF - 4.7μF |

See table for full list of values

Electrical

Operating Temperature

-55°C to +200°C

Temperature Coefficient of Capacitance (Typical)

| COG/NP0 | X7R |
|--------------------|----------------|
| 30ppm/°C to +125°C | ±15% to +125°C |

Insulation Resistance

Time constant (Ri xCr) (whichever is the least)

| | |
|-------|-----------------|
| 25°C | >100GΩ or 1000s |
| 200°C | >1GΩ or 10s |

Ageing Rate

| COG/NP0 | X7R |
|---------|--------------------------------------------|
| Zero | X7R typically less than 2% per time decade |

Mechanical

Termination Material

Standard finish is Sn plate over Ni undercoat.
See ordering information overleaf.

Solderability

IEC 60068-2-5.8 / MIL-STD-202 METHOD 208.
Passed 3 times reflow profile defined in J-STD-020. Compatible with lead free and high melting point solders. Standard finish is Sn plate over Ni undercoat.

Lead Free Soldering

Pb Free. This range is fully compliant with the RoHS, REACH and WEEE directives and parts are compatible with lead free and high melting point solders. Standard finish is Sn plate over Ni undercoat.

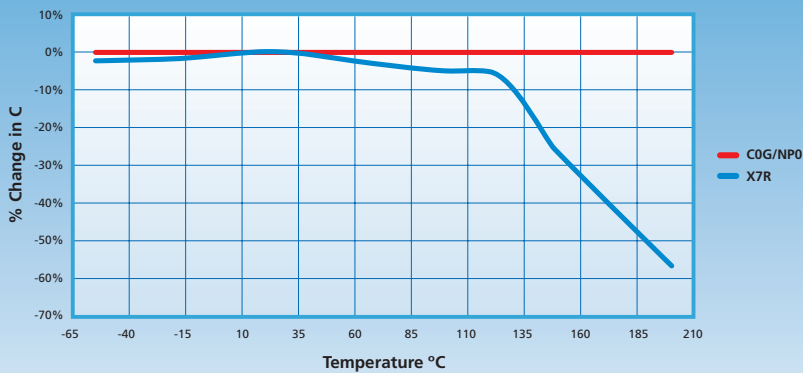
Climatic Category

55/200/56

Reeled Quantities

See taped quantities table overleaf.

TCC



HiT Features

- 200°C operating temperature
- 0603 to 2220 chip sizes
- COG/NP0 and X7R dielectric options
- Capacitance range COG/NP0 from 4.7pF up to 47nF
- Capacitance range X7R from 100pF up to 4.7μF
- Voltage ratings from 10V to 630V
- RoHS compliant / Pb Free
- Sn over Ni termination
- Sample kits available



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DLI•JohansonMFG•Novacap•Syfer•Voltronics

Product ranges - Capacitance values

| Rated Voltage | Chip Size | | | | | | | | | | | | | |
|---------------|-----------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|---------|-------|
| | 0603 | | 0805 | | 1206 | | 1210 | | 1808 | | 1812 | | 2220 | |
| | COG/NPO | X7R | COG/NPO | X7R | COG/NPO | X7R | COG/NPO | X7R | COG/NPO | X7R | COG/NPO | X7R | COG/NPO | X7R |
| Min Cap | - | 100pF | 4.7pF | 100pF | 10pF | 100pF | 22pF | 100pF | 22pF | 100pF | 47pF | 150pF | 68pF | 220pF |
| 10V | - | 100nF | 1.8nF | 220nF | 3.9nF | 820nF | 8.2nF | 1.2µF | 8.2nF | 1.2µF | 15nF | 2.2µF | 47nF | 4.7µF |
| 16V | - | 100nF | 1.8nF | 220nF | 3.9nF | 820nF | 8.2nF | 1.2µF | 8.2nF | 1.2µF | 15nF | 2.2µF | 47nF | 4.7µF |
| 25V | - | 47nF | 1.8nF | 220nF | 3.9nF | 820nF | 8.2nF | 1.2µF | 8.2nF | 1.2µF | 15nF | 2.2µF | 47nF | 4.7µF |
| 50V | - | 15nF | 1.8nF | 100nF | 3.9nF | 270nF | 8.2nF | 680nF | 8.2nF | 560nF | 15nF | 1.5µF | 47nF | 2.2µF |
| 100V | - | 8.2nF | 1.5nF | 33nF | 3.3nF | 100nF | 5.6nF | 270nF | 6.8nF | 180nF | 12nF | 560nF | 39nF | 1.0µF |
| 200V | - | 1.2nF | 820pF | 6.8nF | 1.8nF | 27nF | 3.9nF | 68nF | 3.9nF | 47nF | 10nF | 82nF | 22nF | 120nF |
| 250V | - | 820pF | 470pF | 3.9nF | 1.0nF | 15nF | 2.2nF | 47nF | 2.2nF | 27nF | 5.6nF | 56nF | 12nF | 82nF |
| 500V | - | 270pF | 220pF | 1.5nF | 820pF | 3.9nF | 1.5nF | 12nF | 1.8nF | 12nF | 4.7nF | 18nF | 10nF | 68nF |
| 630V | - | - | 68pF | - | 330pF | - | 820pF | - | 820pF | - | 2.7nF | - | 6.8nF | - |

Note: Other capacitance values may become available, please contact the Sales Office if you need values other than those shown in the above table. For dimensions and soldering information, please go to our website www.knowlescapacitors.com

Taped quantities

| Chip Size | 0603 | 0805 | 1206 | 1210 | 1808 | 1812 | 2220 |
|-----------|--------|--------|--------|-------|-------|-------|-------|
| 7" Reel | 4,000 | 3,000 | 2,500 | 2,000 | 1,500 | 500 | 500 |
| 13" Reel | 16,000 | 12,000 | 10,000 | 8,000 | 6,000 | 2,000 | 2,000 |

Ordering information (Syfer Brand) - HiT 200°C capacitors

| 1206 | J | 1K0 | 0103 | M | X | T | H20 | |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------------------------------------|-------------------------|
| Chip size | Termination | Voltage | Capacitance in picofarads (pF) | Capacitance tolerance | Dielectric | Packaging | Suffix Code | |
| 0603 0805 1206 1210 1808 1812 2220 | J = Nickel barrier with 100% matte tin plating. RoHS compliant. Lead free. | 010 = 10V 016 = 16V 025 = 25V 050 = 50V 063 = 63V 100 = 100V 200 = 200V 250 = 250V 500 = 500V 630 = 630V | ≥1.0pF & <10pF Insert a P for the decimal point as the second character. e.g., 8P20 = 8.2pF ≥10pF First digit is 0. Second and third digits are significant figures of capacitance code. The fourth digit is the number of zeros following. e.g., 0101 = 100pF | COG/NPO F = ±1% G = ±2% J = ±5% K = ±10% | X7R J = ±5% K = ±10% M = ±20% | G = COG/NPO (BME) X = X7R | T = 178mm (7") reel R = 330mm (13") reel B = Bulk pack - tubs | H20 HiT range |

Ordering information (Novacap Brand) - HiT 200°C capacitors

| 1206 | RE | 331 | J | 501 | N | H | T |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Case size | Dielectric | Capacitance in picofarads (pF) | Capacitance tolerance | Voltage | Termination | Screening | Packaging |
| 0603 0805 1206 1210 1808 1812 2220 | RD = COG/NPO (200°C) RE = X7R (200°C) | First and Second digits are significant figures of capacitance code. The fourth digit is number of 0's following. Example: 103 = 10000pF R = decimal | COG/NPO F = ±1% G = ±2% J = ±5% K = ±10% | X7R J = ±5% K = ±10% M = ±20% | 160 = 16V 250 = 25V 500 = 50V 101 = 100V 201 = 200V 251 = 250V 501 = 500V 631 = 630V | N = Nickel barrier with 100% matte tin plating. RoHS compliant. Lead free. | H = High Temp Screening - if required T = 178mm (7") reel 330mm (13") reel None = Bulk pack - tubs |



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