



Product Overview

NCP500: Linear Voltage Regulator, LDO, CMOS Low Noise, 150 mA

[For complete documentation, see the data sheet](#)

Product Description

The NCP500 Low Dropout (LDO) Linear Voltage Regulator is designed for portable battery powered applications which require low noise operation, fast enable response time, and low dropout. The device achieves its low noise performance without the need of an external noise bypass capacitor. Each device contains a voltage reference unit, an error amplifier, a PMOS power transistor, and resistors for setting output voltage, and current limit and temperature limit protection circuits.

The NCP500 LDO Linear Voltage Regulator has been designed to be used with low cost ceramic capacitors and requires a minimum output capacitor of 1.0 mF. Standard voltage versions are 1.8, 2.5, 2.7, 2.8, 3.0, 3.3, and 5.0 V.

Features

- Ultra-Low Dropout Voltage of 170 mV at 150 mA
- Fast Enable Turn-On Time of 20 μ sec
- Wide Operating Voltage Range of 1.8 V to 6.0 V
- Excellent Line and Load Regulation
- High Accuracy Output Voltage of 2.5%
- Enable Can Be Driven Directly by 1.0 V Logic
- Very Small QFN 2x2 Package
- Pb-Free Package May be Available.* The G-Suffix Denotes a Pb-Free Lead Finish

Applications

- Noise Sensitive Circuits - VCO's, RF Stages, etc.
- SMPS Post-Regulation
- Hand-Held Instrumentation

End Products

- Camcorders and Cameras

Part Electrical Specifications

| Product | Compliance | Status | Output | Polarity | V _O (V) | I _O Typ (A) | V _I Max (V) | V _{DO} Typ (V) | I _q Typ (mA) | PSRR (dB) | Noise (μV _{rms}) | Package Type |
|----------------|---|-----------------|--------|----------|--------------------|------------------------|------------------------|-------------------------|-------------------------|-----------|----------------------------|-------------------|
| NCP500SN185T1G | Pb-free Halide free | Active | Single | Positive | 1.85 | 0.15 | 6 | 0.27 | 0.175 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN18T1G | Pb-free Halide free | Active | Single | Positive | 1.8 | 0.15 | 6 | 0.27 | 0.175 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN25T1G | Pb-free Halide free | Active | Single | Positive | 2.5 | 0.15 | 6 | 0.19 | 0.18 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN26T1G | Pb-free Halide free | Active | Single | Positive | 2.6 | 0.15 | 6 | 0.19 | 0.18 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN27T1G | Pb-free Halide free | Active | Single | Positive | 2.7 | 0.15 | 6 | 0.18 | 0.185 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN28T1G | Pb-free Halide free | Active | Single | Positive | 2.8 | 0.15 | 6 | 0.17 | 0.185 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN30T1G | Pb-free Halide free | Active | Single | Positive | 3 | 0.15 | 6 | 0.165 | 0.175 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN30T2G | Pb-free Halide free | Product Preview | | | | | | | | | | TSOP-5 / SOT-23-5 |
| NCP500SN33T1G | Pb-free Halide free | Active | Single | Positive | 3.3 | 0.15 | 6 | 0.15 | 0.195 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SN50T1G | Pb-free Halide free | Active | Single | Positive | 5 | 0.15 | 6 | 0.12 | 0.21 | 62 | | TSOP-5 / SOT-23-5 |
| NCP500SQL18T1G | Pb-free Halide free | Active | Single | Positive | 1.8 | 0.15 | 6 | 0.27 | 0.175 | 62 | | DFN-6 |
| NCP500SQL25T1G | Pb-free Halide free | Active | Single | Positive | 2.5 | 0.15 | 6 | 0.19 | 0.18 | 62 | | DFN-6 |
| NCP500SQL27T1G | Pb-free Halide free | Active | Single | Positive | 2.7 | 0.15 | 6 | 0.18 | 0.185 | 62 | | DFN-6 |
| NCP500SQL28T1G | Pb-free Halide free | Active | Single | Positive | 2.8 | 0.15 | 6 | 0.17 | 0.185 | 62 | | DFN-6 |
| NCP500SQL30T1G | Pb-free Halide free | Active | Single | Positive | 3 | 0.15 | 6 | 0.165 | 0.175 | 62 | | DFN-6 |
| NCP500SQL33T1G | Pb-free Halide free | Active | Single | Positive | 3.3 | 0.15 | 6 | 0.15 | 0.195 | 62 | | DFN-6 |
| NCP500SQL50T1G | Pb-free Halide free | Active | Single | Positive | 5 | 0.15 | 6 | 0.12 | 0.21 | 62 | | DFN-6 |
| NCV500SN185T1G | AEC Qualified PPAP Capable Pb-free Halide free | Active | Single | Positive | 1.85 | 0.15 | 6 | | 0.175 | 62 | | TSOP-5 / SOT-23-5 |
| NCV500SN18T1G | AEC Qualified PPAP Capable Pb-free Halide free | Active | Single | Positive | 1.8 | 0.15 | 6 | 0.27 | 0.175 | 62 | | TSOP-5 / SOT-23-5 |
| NCV500SN28T1G | AEC Qualified PPAP Capable Pb-free Halide free | Active | Single | Positive | 2.8 | 0.15 | 6 | | 0.185 | 62 | | TSOP-5 / SOT-23-5 |
| NCV500SN33T1G | AEC Qualified PPAP Capable Pb-free Halide free | Active | Single | Positive | 3.3 | 0.15 | 6 | | 0.195 | 62 | | TSOP-5 / SOT-23-5 |

