

Product Overview

NCP186: Linear Voltage Regulator, Fast Transient Response, 1 A with Enable

For complete documentation, see the data sheet.

The NCP186 is a Very Low Dropout Regulator which provides up to 1 A of load current and maintains excellent output voltage accuracy of 1.0 % in -40 to 85degC range. The operating input voltage range from 1.8 V up to 5.5 V makes this device suitable for Li-ion battery powered products as well as post-regulation applications. The product is available in several fixed output voltage options and others are possible on request in range from 1.2 V to 3.9 V. NCP186 is fully protected against overheating and output short circuit.

Small 8-pin XDFN6 1.2 mm x 1.6 mm package makes the device especially suitable for space constrained applications.

Features

- 1.8 V to 5.5 V Operating Input Voltage Range
- Several Fixed Output Voltage Options and others available upon request in range from 1.2 V to 3.9 V
- Low Quiescent Current of Typ. 90 μ A
- Very Low Dropout: 100 mV Typ. at $I_{out} = 1$ A (3.0V version)
- High 75 dB at 1 kHz PSRR
- Internal Soft-Start
- $\pm 1.0\%$ Accuracy in -40 to 85degC temperature range
- Thermal Shutdown and Current Limit Protections
- Stable with Small 1 μ F Ceramic Capacitors

Applications

- Battery Powered Equipment
- Portable Communication Equipment
- Cameras, Image Sensors and Camcorders

Benefits

- Suitable for Li-ion battery or post regulation application
- Design Flexibility
- Extended Battery Life
- Extended Battery Range
- Good for noise sensitive circuits
- Limits the In-Rush Current
- High output voltage precision
- Protects product and system from damage
- Saves PCB space and system cost

End Products

- Cell Phone
- Camera
- Camcorder

Part Electrical Specifications

Product	Compliance	Status	Output	Polarity	V _O (V)	I _O Typ (A)	V _I Min (V)	V _I Max (V)	V _{DO} Typ (V)	I _Q Typ (mA)	PSRR (dB)	Noise (μV _{rms})	Enable	Power Good	Package Type
NCP186AMX120TAG	Pb-free	Active	Single	Positive	1.2	1	1.8	5.5	0.405	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX150TAG	Pb-free	NEW	Single	Positive	1.5	1	1.8	5.5	0.25	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX175TAG	Pb-free	Active	Single	Positive	1.75	1	1.8	5.5	0.18	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX180TAG	Pb-free	Active	Single	Positive	1.8	1	1.8	5.5	0.175	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX185TAG	Pb-free	Active	Single	Positive	1.85	1	1.8	5.5	0.17	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX250TAG	Pb-free	Active	Single	Positive	2.5	1	1.8	5.5	0.12	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX280TAG	Pb-free	Active	Single	Positive	2.8	1	1.8	5.5	0.11	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX295TAG	Pb-free	NEW	Single	Positive	2.95	1	1.8	5.5	0.102	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX300TAG	Pb-free	Active	Single	Positive	3	1	1.8	5.5	0.1	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX330TAG	Pb-free	Active	Single	Positive	3.3	1	1.8	5.5	0.095	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX350TAG	Pb-free	Active	Single	Positive	3.5	1	1.8	5.5	0.092	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186AMX390TAG	Pb-free	Active	Single	Positive	3.9	1	1.8	5.5	0.086	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX120TAG	Pb-free	Active	Single	Positive	1.2	1	1.8	5.5	0.405	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX150TAG	Pb-free	NEW	Single	Positive	1.5	1	1.8	5.5	0.25	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX175TAG	Pb-free	Active	Single	Positive	1.75	1	1.8	5.5	0.18	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX180TAG	Pb-free	Active	Single	Positive	1.8	1	1.8	5.5	0.175	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX185TAG	Pb-free	Active	Single	Positive	1.85	1	1.8	5.5	0.17	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX250TAG	Pb-free	Active	Single	Positive	2.5	1	1.8	5.5	0.12	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX280TAG	Pb-free	Active	Single	Positive	2.8	1	1.8	5.5	0.11	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX300TAG	Pb-free	Active	Single	Positive	3	1	1.8	5.5	0.1	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX330TAG	Pb-free	Active	Single	Positive	3.3	1	1.8	5.5	0.095	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX350TAG	Pb-free	Active	Single	Positive	3.5	1	1.8	5.5	0.092	0.09	75	48	Yes	No	XDFN-8
	Halide free														
NCP186BMX390TAG	Pb-free	Active	Single	Positive	3.9	1	1.8	5.5	0.086	0.09	75	48	Yes	No	XDFN-8
	Halide free														

For more information please contact your local sales support at www.onsemi.com.

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