

Product Overview

NCP1622: Power Factor Controller, Enhanced Light Load Efficiency

For complete documentation, see the data sheet.

The 6-pin PFC controller NCP1622 is designed to drive PFC boost stages. It is based on an innovative Valley Synchronized Frequency Fold-back (VSFF) method. In this mode, the circuit classically operates in Critical conduction Mode (CrM) when control voltage exceeds a programmable value $V_{ctrl,FF}$. When $V_{control}$ is below this preset level $V_{ctrl,FF}$, the NCP1622 (versions [B**] and [D**]) linearly decays the frequency down to about 30 kHz until $V_{control}$ reaches the SKIP mode threshold. VSFF maximizes the efficiency at both nominal and light load. In particular, the stand-by losses are reduced to a minimum. Like in FCCrM controllers, internal circuitry allows near-unity power factor even when the switching frequency is reduced. Housed in a TSOP6 package, the circuit also incorporates the features necessary for robust and compact PFC stages, with few external components.

Features

- Critical Conduction Mode with frequency foldback
- Valley Synchronized Frequency Fold-back (VSFF)
- Works with or without a transformer w/ ZCD winding
- Dynamic Response Enhancer

Applications

- Offline Power Supply

Benefits

- Optimizes conversion efficiency across load range
- Enhanced efficiency at light load conditions compared to CrM PFC
- Reduced inductor cost and simplified design
- Improved transient response for line and load steps

End Products

- Flat panel TV
- High Power Adapters
- PC Power Supplies
- Lighting Ballasts
- Flat Screen TV

Part Electrical Specifications

Product	Pricing (\$/Unit)	Compliance	Status	PFC Mode	Frequency Operation	Control Mode	Topology	f_{sw} Typ (kHz)	V_{cc} Max (V)	Drive Cap. (mA)	UVLO (V)	Latch	UVP	Inhibition	Package Type
NCP1622BCCSNT1G	0.24	Pb-free Halide free	Active	CRM	Variable	Current Mode	Step-Up	Variable	30	500 / 800	9	Yes	Yes	No	TSOP-6
NCP1622BECSNT1G	0.24	Pb-free Halide free	Active	CRM	Variable	Current Mode	Step-Up	Variable	30	500 / 800	9	Yes	Yes	No	TSOP-6
NCP1622DCCSNT1G	0.24	Pb-free Halide free	Active	CRM	Variable	Current Mode	Step-Up	Variable	30	500 / 800	9	Yes	Yes	No	TSOP-6

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