

Product brief

Continuous conduction mode PFC ICs

CCM-PFC ICs enabling high efficiency at very low system cost

ICE2PCS0xG are the 2nd generation of continuous conduction mode (CCM) PFC controllers, which employ BiCMOS technology. Compared to the previous generation they have lower internal reference, trimmed at 3 V, among other advantages such as wider V_{CC} operating range, improved internal oscillator and additional direct bulk capacitor overvoltage protection.

ICE3PCS01G is the 14-pin, wide input range (85 V_{AC} to 265 V_{AC}) controller IC for active CCM power factor correction converter. In contrast to the 2nd generation of ICE2PCS0xG, the 3rd generation PFC ICs have the lowest internal reference, trimmed at 2.5 V, and integrated digital control voltage loop. Further advantages are the low peak current limit at 0.2 V, adjustable gate switching frequency range from 21 kHz to 100 kHz and the ability to synchronize with external frequency range from 50 kHz to 100 kHz. They are able to achieve 95 percent efficiency at full load for all input voltage range.

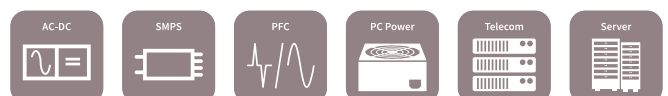
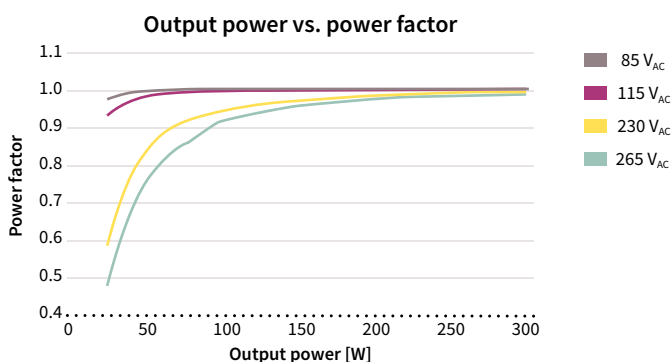
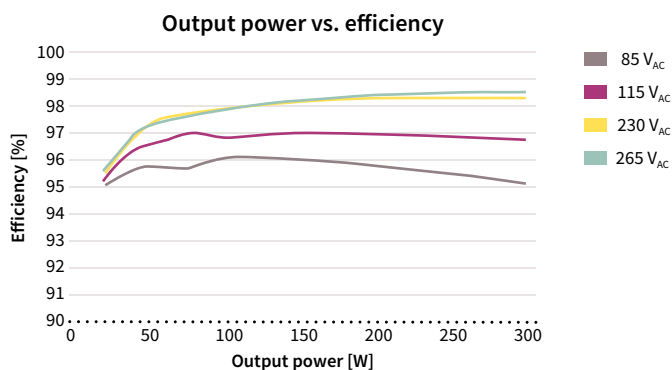
Key features

2nd generation CCM PFC IC

- > Fulfills class D requirements of IEC 1000-3-2
- > Lowest count of external components
- > Adjustable and fixed switching frequencies
- > Frequency range from 20 to 250 kHz
- > Versions with brown-out protection available
- > Wide input range supported
- > Enhanced dynamic response during load jumps
- > Cycle-by-cycle peak current limiting
- > Integrated protections OVP, OCP
- > DSO-8 package
- > Lead-free, RoHS compliant

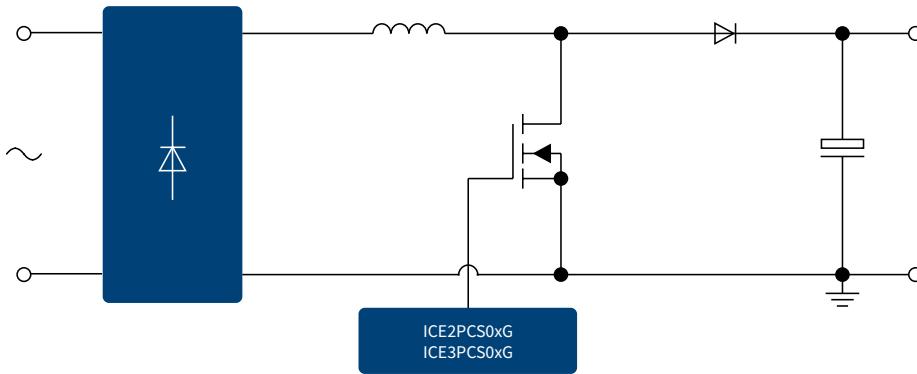
3rd generation CCM PFC IC

- > Fulfills class D requirements of IEC 1000-3-2
- > Integrated digital voltage loop compensation
- > Boost follower function
- > Bulk voltage monitoring signals, brown-out
- > Multi protections such as double OVP
- > Fast output dynamic response during load jump
- > External synchronization
- > Extra-low peak current limitation threshold
- > DSO-8 and DSO-14 packages



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2nd generation CCM PFC ICs

Product	Frequency f_{sw}	Current drives	Package
ICE2PCS01G	50-250 kHz	2.0 A	DSO-8
ICE2PCS02G	65 kHz		
ICE2PCS03G	100 kHz		
ICE2PCS05G	20-250 kHz		

3rd generation CCM PFC ICs

Product	Frequency f_{sw}	Current drives	Package
ICE3PCS01G	Adjustable	0.75 A	DSO-14
ICE3PCS02G			DSO-8
ICE3PCS03G			DSO-8

PFC CCM IC by feature	ICE2PCS01G ICE2PCS05G	ICE2PCS02G ICE2PCS03G	ICE3PCS03G	ICE3PCS02G	ICE3PCS01G
Digital control voltage loop	-	-	✓	✓	✓
Variable frequency	✓	-	✓	✓	✓
Synchronous frequency	-	✓	✓	✓	-
Open loop protection	✓	✓	✓	✓	✓
Low peak current limit	-1 V	-1 V	-0.4 V	-0.4 V	-0.2 V
Brown-out protection	-	✓	✓	-	✓
Overvoltage protection	✓	✓	✓	✓	✓
Second overvoltage protection	-	✓	✓	-	-
PFC enable function	-	-	-	-	✓
Boost follower mode	-	-	-	-	✓
5 V regulator	-	-	-	-	✓

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