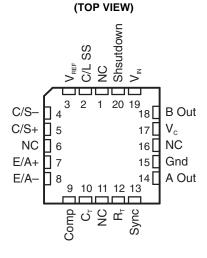


RAD-TOLERANT CLASS-V, CURRENT-MODE PWM CONTROLLER

Check for Samples: UC1846-SP

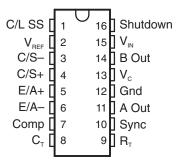
FEATURES

- QML-V Qualified, SMD 5962-86806
- Rad-Tolerant: 30 kRad (Si) TID (1)
- Automatic Feed-Forward Compensation
- Programmable Pulse-by-Pulse Current Limiting
- Automatic Symmetry Correction in Push-Pull Configuration
- Enhanced Load Response Characteristics
- Parallel-Operation Capability for Modular Power Systems
- Differential Current-Sense Amplifier With Wide Common-Mode Range
- Double-Pulse Suppression
- 500-mA (Peak) Totem-pole Outputs
- ±1% Bandgap Reference
- Undervoltage Lockout
- Soft-Start Capability
- Shutdown Terminal
- 500-kHz Operation



FK PACKAGE





DESCRIPTION

The UC1846 control devices provide all of the necessary features to implement fixed frequency, current mode control schemes while maintaining a minimum external parts count. The superior performance of this technique can be measured in improved line regulation, enhanced load response characteristics, and a simpler, easier-to-design control loop. Topological advantages include inherent pulse-by-pulse current limiting capability, automatic symmetry correction for push-pull converters, and the ability to parallel "power modules" while maintaining equal current sharing.

Protection circuitry includes built-in under-voltage lockout and programmable current limit in addition to soft start capability. A shutdown function is also available which can initiate either a complete shutdown with automatic restart or latch the supply off.

Other features include fully latched operation, double-pulse suppression, deadline adjust capability, a ±1% trimmed bandgap reference, and low outputs in the OFF state.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

⁽¹⁾ Radiation tolerance is a typical value based upon initial device qualification with dose rate = 10 mrad/sec. Radiation Lot Acceptance Testing is available - contact factory for details.

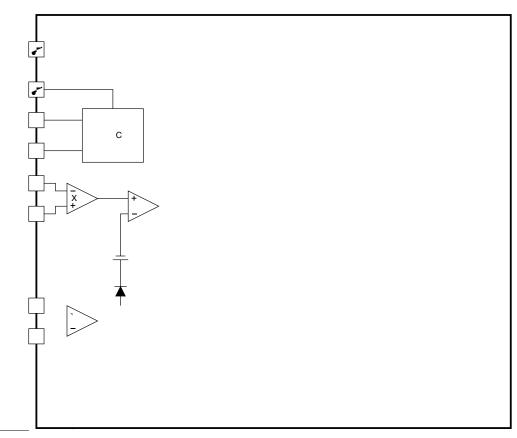


ORDERING INFORMATION(1)

T _A PACKAGE		ORDERABLE PART NUMBER	TOP-SIDE MARKING		
–55°C to 125°C	CDIP – J	5962-8680603VEA	UC1846J-SP		
	CFP - W	5962-8680603VFA	UC1846W-SP		
	LCCC – FK	5962-8680603V2A	UC1846FK-SP		

(1) For the most current package and ordering information, see the Package Option Addendum at the end of this document, or see the TI web site at www.ti.com.

BLOCK DIAGRAM



NOTE: Pin numbers shown are for the J package.

NST.		
	1	



-			
		T	
			r



APPLICATION INFORMATION

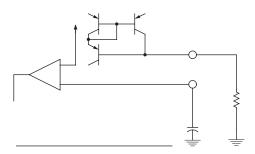


Figure 1. Oscillator Circuit

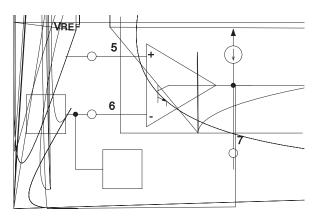


Figure 2. Error Amplifier Output Configuration

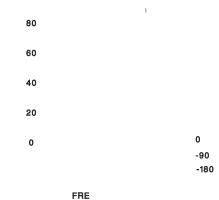


Figure 3. Error Amplifier Gain and Phase vs Frequency

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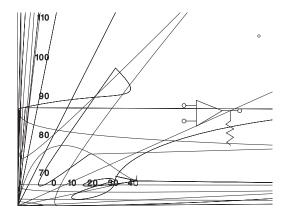


Figure 4. Error Amplifier Open-Logic Gain vs Load Resistance

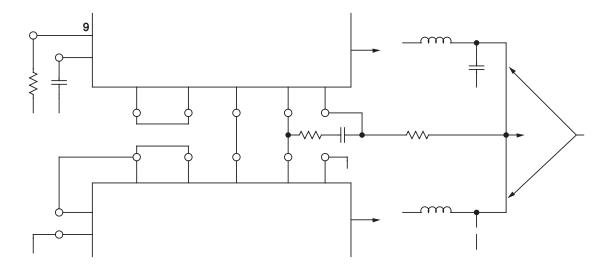


Figure 5. Parallel Operation



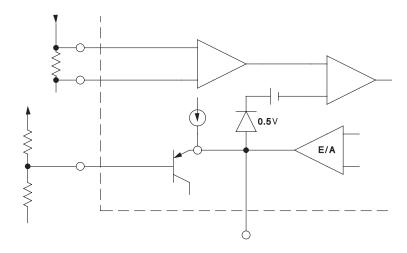


Figure 6. Pulse-by-Pulse Current Limiting



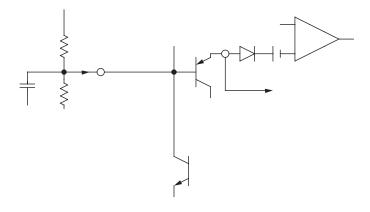


Figure 7. Soft-Start and Shutdown/Restart Functions

Figure 8. Current-Sense Amplifier Connection



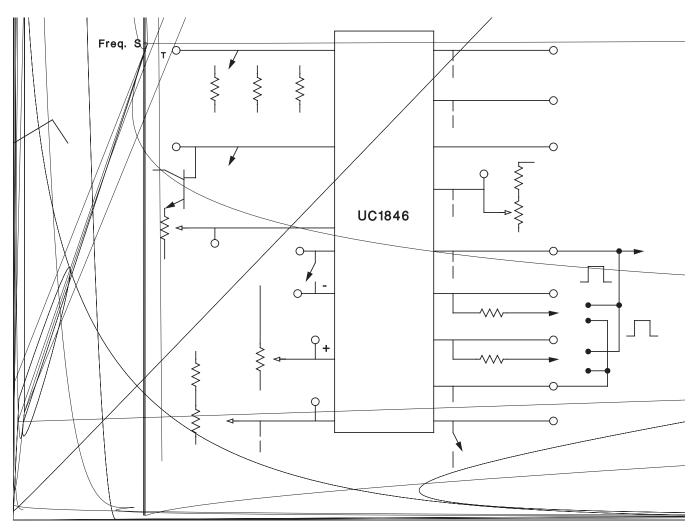


Figure 9. Open-Loop Test Circuit

PACKAGE OPTION ADDENDUM

www.ti.com

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/ Ball Finish	MSL Peak Temp ⁽³⁾	Samples (Requires Login)
5962-8680601V2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLAT	E N / A for Pkg Type	
5962-8680601VEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	5962-8680601VEA

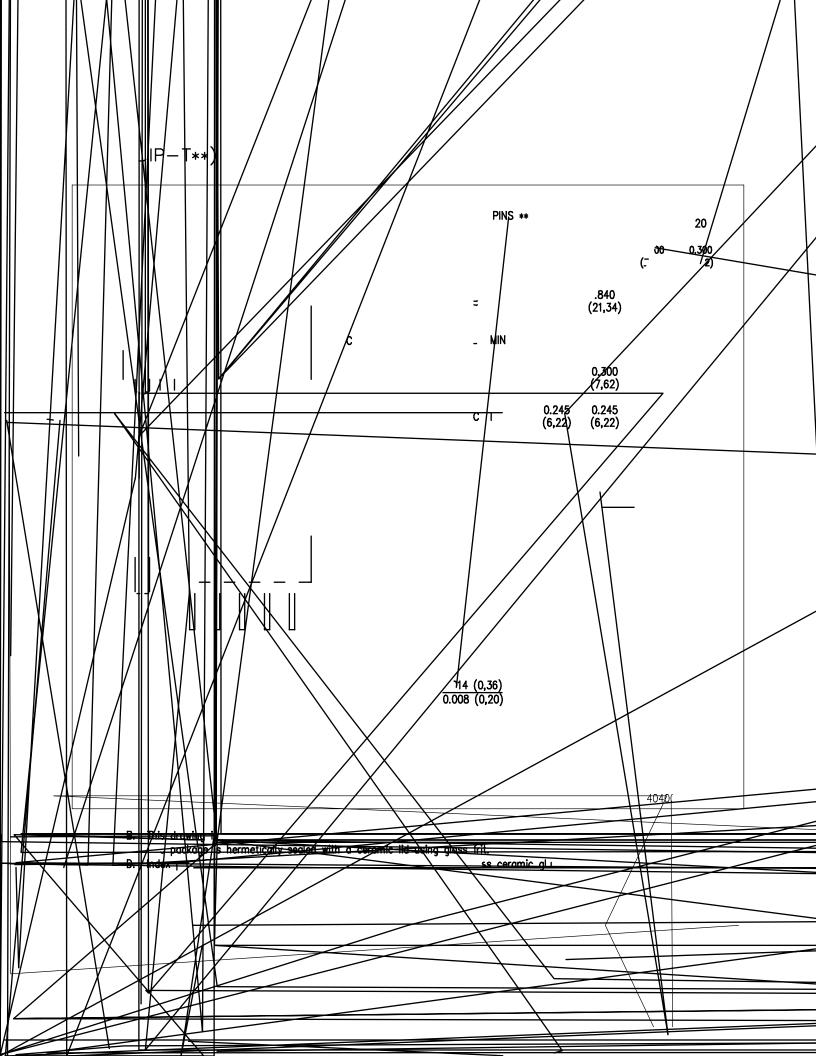
PACKAGE OPTION ADDENDUM

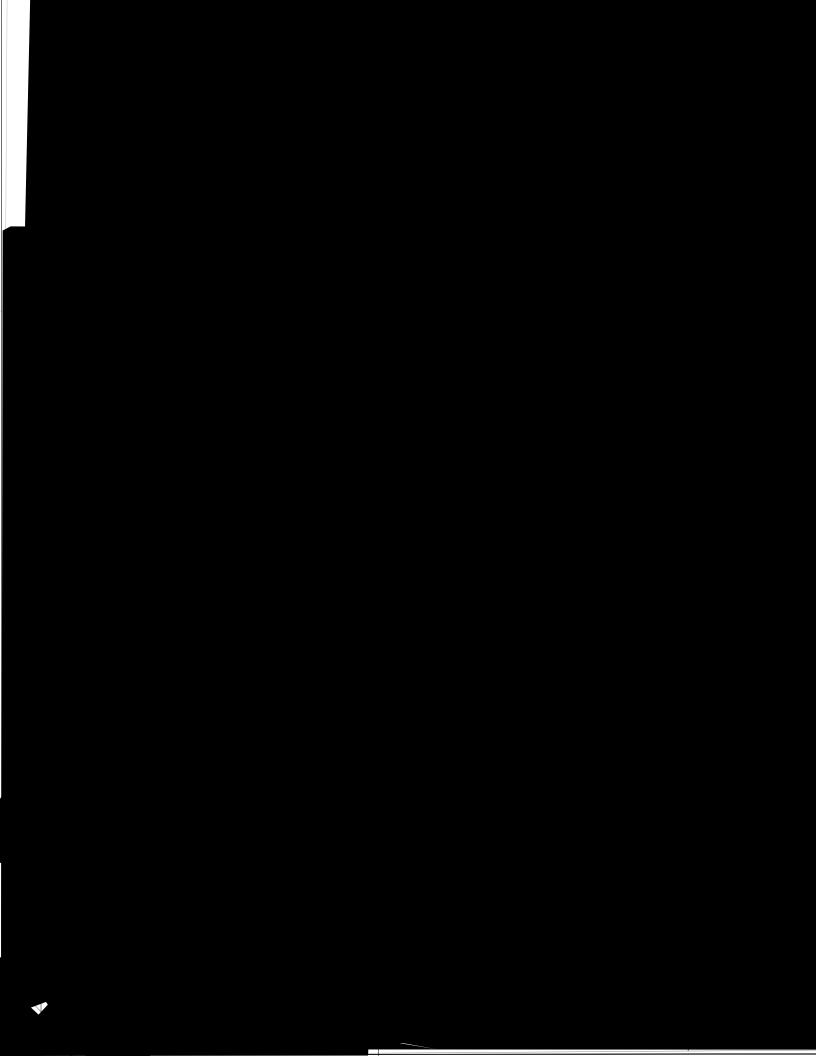
www.ti.com 28-Aug-2012

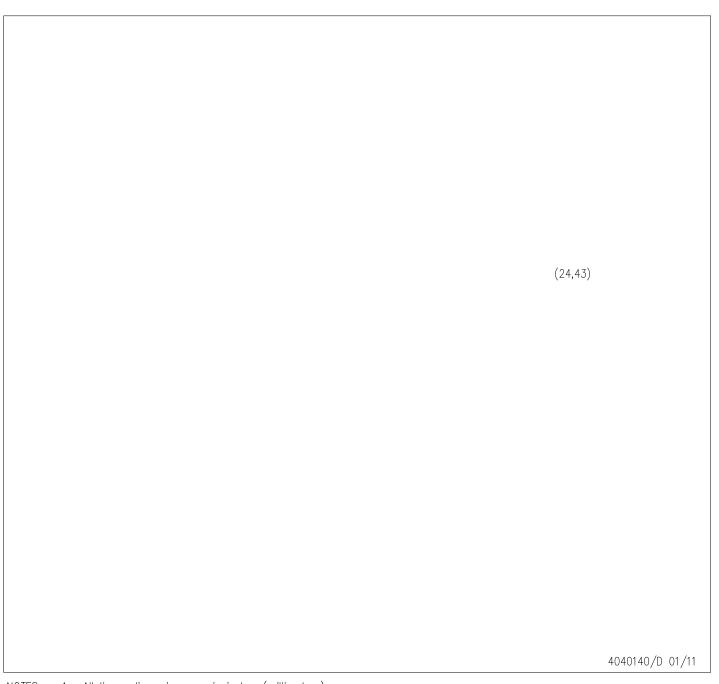
● Enhanced Product: UC1846-EP

NOTE: Qualified Version Definitions:

- Catalog TI's standard catalog product
- Enhanced Product Supports Defense, Aerospace and Medical Applications







NOTES: A. All linear dimensions are in inches (millimeters).

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