

## 电流模式脉宽调制 (PWM) 控制器

### 特性

- 自动前馈补偿
- 可编程逐脉冲电流限制
- 推挽配置中的自动对称校正
- 增强型负载响应特性
- 针对模块化电源系统的并行运行功能
- 具有宽共模范围的差分电流感测放大器
- 双脉冲抑制
- 欠压闭锁
- 软启动功能
- 关断端子

### 说明

UC1846 控制集成电路 (IC) 在保持最小外部部件数量的同时提供执行定频、电流模式控制机制所需的全部特性。这个技术的出色性能可在改进的线路稳压、增强型负载响应特性，和一个更简单、易于设计的控制环路中测得。拓扑优势在保持电流均流的基础上包含固有逐脉冲电流限制功能、针对推挽转换器的自动对称校正和电源模块的并行功能。

除了软启动功能外，保护电路还包括内置欠压闭锁和可编程电流限制。还提供关断功能，此功能启动一个具有自动重启的完全关断或者将电源锁存。

其它特性包括完全锁存运行，双脉冲抑制和期限调节功能。

在关闭状态下，UC1846 特有低输出。

### ORDERING INFORMATION<sup>(1)</sup>

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
UC1846	TD	Bare die in waffle pack <sup>(2)</sup>	UC1846VTD1	100
			UC1846VTD2	10

(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](http://www.ti.com).

(2) Processing is per the Texas Instruments commercial production baseline and is in compliance with the Texas Instruments Quality Control System in effect at the time of manufacture. Electrical screening consists of DC parametric and functional testing at room temperature only. Unless otherwise specified by Texas Instruments AC performance and performance over temperature is not warranted. Visual Inspection is performed in accordance with MIL-STD-883 Test Method 2010 Condition B at 75X minimum.



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.

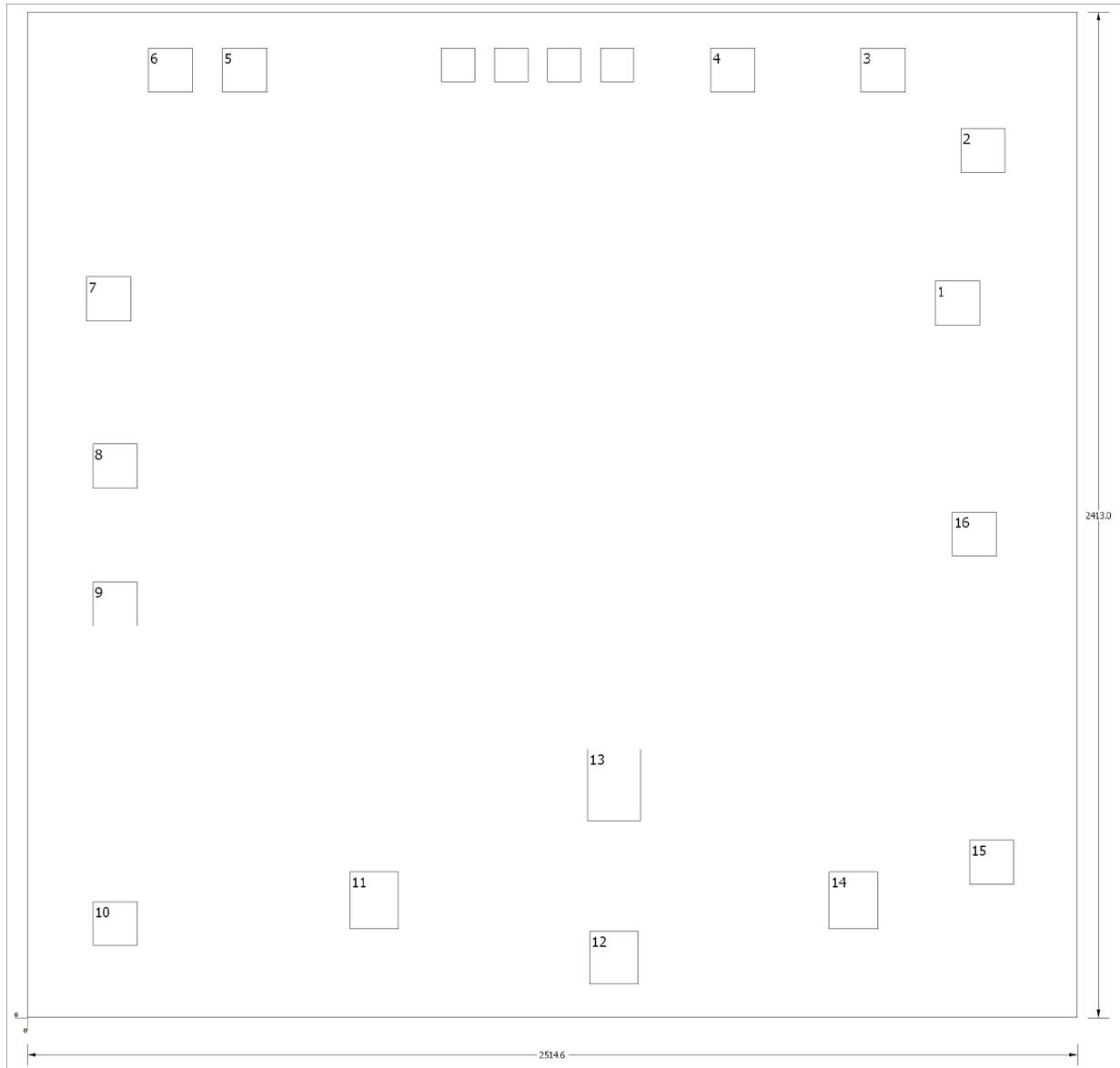


This integrated circuit can be damaged by ESD. Texas Instruments recommends that all integrated circuits be handled with appropriate precautions. Failure to observe proper handling and installation procedures can cause damage.

ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

### BARE DIE INFORMATION

DIE THICKNESS	BACKSIDE FINISH	BACKSIDE POTENTIAL	BOND PAD METALLIZATION COMPOSITION	BOND PAD THICKNESS
10.5 mils.	Silicon with backgrind	Floating	AlCu2	2000 nm



**Table 1. Bond Pad Coordinates in Microns**

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
C/S SS	1	2174.24	1661.16	2280.92	1767.84
VREF	2	2235.2	2026.92	2341.88	2133.6
C/S-	3	1996.44	2219.96	2103.12	2326.64
C/S+	4	1635.76	2219.96	1742.44	2326.64
E/A+	5	467.36	2219.96	574.04	2326.64
E/A-	6	289.56	2219.96	396.24	2326.64
COMP	7	142.24	1671.32	248.92	1778
CT	8	157.48	1270	264.16	1376.68
RT	9	157.48	939.8	264.16	1046.48
Sync	10	157.48	172.72	264.16	279.4
A Out	11	772.16	213.36	889	350.52
GND	12	1346.2	81.28	1463.04	208.28
VC	13	1341.12	472.44	1468.12	645.16
B Out	14	1920.24	213.36	2037.08	350.52
VIN	15	2255.52	320.04	2362.2	426.72
Shutdown	16	2214.88	1107.44	2321.56	1214.12

**PACKAGING INFORMATION**

Orderable part number	Status (1)	Material type (2)	Package   Pins	Package qty   Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
UC1846VTD1	Active	Production	null (null)   0	100   NOT REQUIRED	-	Call TI	Call TI	-55 to 125	
UC1846VTD1.A	Active	Production	null (null)   0	100   NOT REQUIRED	-	Call TI	Call TI	-55 to 125	
UC1846VTD2	Active	Production	null (null)   0	10   NOT REQUIRED	-	Call TI	Call TI	-55 to 125	
UC1846VTD2.A	Active	Production	null (null)   0	10   NOT REQUIRED	-	Call TI	Call TI	-55 to 125	

<sup>(1)</sup> **Status:** For more details on status, see our [product life cycle](#).

<sup>(2)</sup> **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

<sup>(3)</sup> **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

<sup>(4)</sup> **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

<sup>(5)</sup> **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

<sup>(6)</sup> **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

**Important Information and Disclaimer:** The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

**OTHER QUALIFIED VERSIONS OF UC1846-DIE :**

- Enhanced Product : [UC1846-EP](#)
- Space : [UC1846-SP](#)

NOTE: Qualified Version Definitions:

- Enhanced Product - Supports Defense, Aerospace and Medical Applications
- Space - Radiation tolerant, ceramic packaging and qualified for use in Space-based application

## 重要通知和免责声明

TI“按原样”提供技术和可靠性数据（包括数据表）、设计资源（包括参考设计）、应用或其他设计建议、网络工具、安全信息和其他资源，不保证没有瑕疵且不做任何明示或暗示的担保，包括但不限于对适销性、与某特定用途的适用性或不侵犯任何第三方知识产权的暗示担保。

这些资源可供使用 TI 产品进行设计的熟练开发人员使用。您将自行承担以下全部责任：(1) 针对您的应用选择合适的 TI 产品，(2) 设计、验证并测试您的应用，(3) 确保您的应用满足相应标准以及任何其他安全、安保法规或其他要求。

这些资源如有变更，恕不另行通知。TI 授权您仅可将这些资源用于研发本资源所述的 TI 产品的相关应用。严禁以其他方式对这些资源进行复制或展示。您无权使用任何其他 TI 知识产权或任何第三方知识产权。对于因您对这些资源的使用而对 TI 及其代表造成的任何索赔、损害、成本、损失和债务，您将全额赔偿，TI 对此概不负责。

TI 提供的产品受 [TI 销售条款](#)、[TI 通用质量指南](#) 或 [ti.com](#) 上其他适用条款或 TI 产品随附的其他适用条款的约束。TI 提供这些资源并不会扩展或以其他方式更改 TI 针对 TI 产品发布的适用的担保或担保免责声明。除非德州仪器 (TI) 明确将某产品指定为定制产品或客户特定产品，否则其产品均为按确定价格收入目录的标准通用器件。

TI 反对并拒绝您可能提出的任何其他或不同的条款。

版权所有 © 2025，德州仪器 (TI) 公司

最后更新日期：2025 年 10 月