

抗辐射，高速脉宽调制 (PWM) 控制器

 查询样品: [UC1825-DIE](#)

特性

- 抗辐射: **30kRad (Si)** 电离总剂量效应 (TID) ⁽¹⁾
 - 与电压或电流模式拓扑结构兼容
 - 实际运行开关频率
 - 到输出的 **50ns** 传播延迟
 - 高电流双推挽式输出
 - 宽带宽误差放大器
 - 支持双脉冲抑制的全锁存逻辑
 - 逐脉冲电流限制
 - 软启动/最大占空比控制
 - 带有滞后功能的欠压闭锁
 - 低启动电流
- (1) 抗辐射性是基于初始器件鉴定剂量率等于每秒 10mrad 时的典型值。提供辐射批次验收测试 – 详细信息请联系厂家。

说明

UC1825-DIE PWM 控制器件针对高频开关模式电源应用进行了优化。对在大大增加误差放大器的带宽和转换率的同时，大大减小通过比较器和逻辑电路的传播延迟给予了特别关注。这个控制器设计用于电流模式或电压模式系统，此系统具有输出电压前馈功能。

保护电路包括一个阈值电压为 1V 的电流限制比较器、一个 TTL 兼容关断端口和一个软启动引脚，此引脚可对折为一个最大占空比钳位。此逻辑被完全锁存以提供无抖动运行，并且抑制了输出上的多脉冲。一个具有 800mV 滞后的欠压闭锁部分可确保低启动电流。欠压闭锁期间，输出为高阻抗。

这个器件特有推挽式输出，此输出被设计用来拉、灌来自电容负载（诸如一个功率金属氧化物半导体场效应晶体管 (MOSFET) 的栅极）的高峰值电流。接通状态被设计为高电平。

ORDERING INFORMATION⁽¹⁾

PRODUCT	PACKAGE DESIGNATOR	PACKAGE	ORDERABLE PART NUMBER	PACKAGE QUANTITY
UC1825	TD	Bare die in waffle pack ⁽²⁾	UC1825VTD1	88
			UC1825VTD2	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.
- (2) Processing is per the Texas Instruments space 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

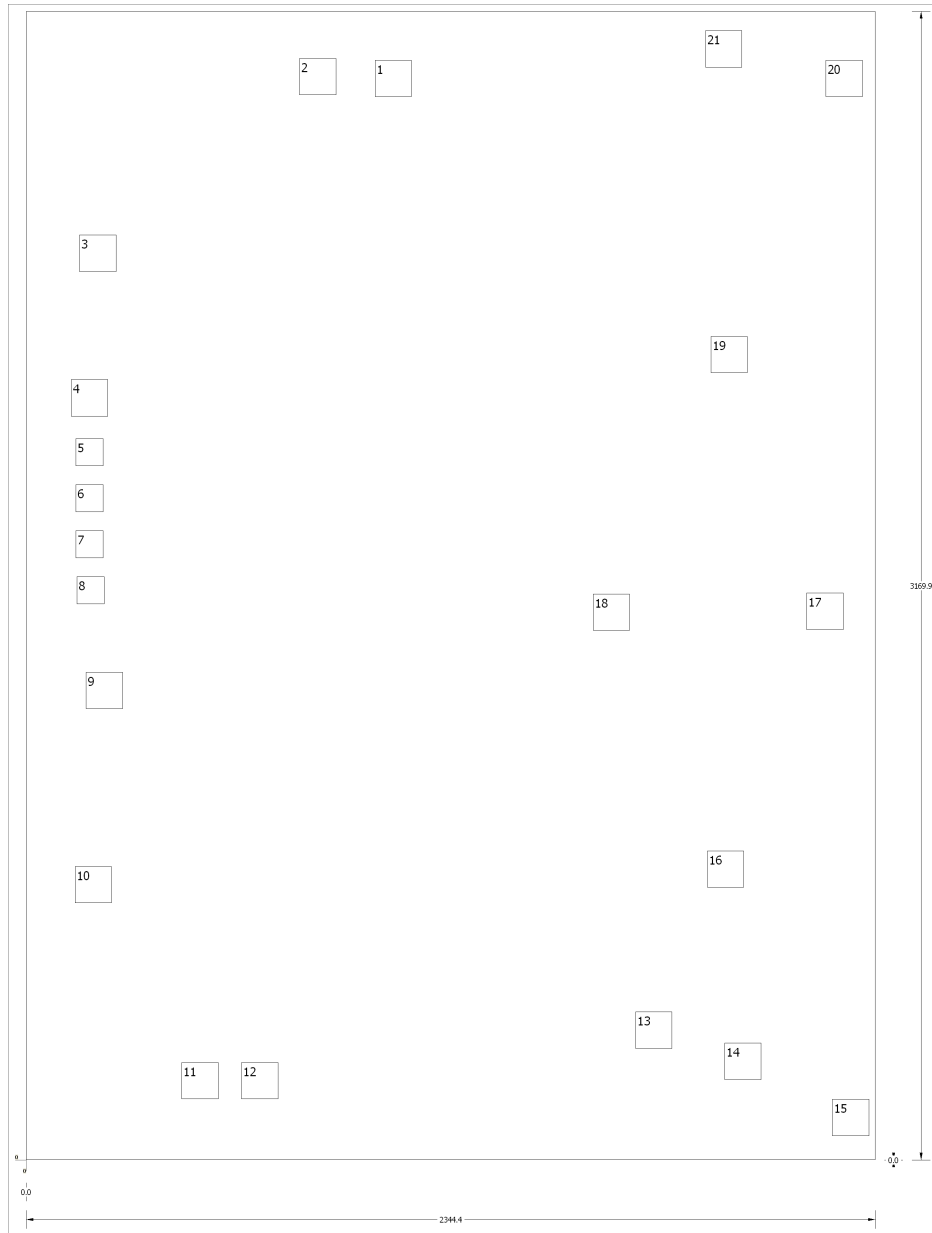


Table 1. Bond Pad Coordinates in Microns

DESCRIPTION	PAD NUMBER	X MIN	Y MIN	X MAX	Y MAX
INV	1	962.685	2933.725	1064.285	3035.325
NI	2	754.405	2938.805	856.005	3040.405
E/A OUT	3	147.345	2451.125	248.945	2552.725
CLOCK	4	124.485	2052.345	226.085	2153.945
N/C	5	137.185	1915.185	213.385	1991.385
N/C	6	137.185	1788.185	213.385	1864.385
N/C	7	137.185	1661.185	213.385	1737.385
N/C	8	139.725	1534.185	215.925	1610.385
RT	9	165.125	1244.625	266.725	1346.225
CT	10	134.645	708.685	236.245	810.285
RAMP	11	429.285	167.665	530.885	269.265
SOFT START	12	594.385	167.665	695.985	269.265
ILIM/SD	13	1681.505	307.365	1783.105	408.965
N/C	14	1927.885	221.005	2029.485	322.605
GND	15	2225.065	66.065	2326.665	167.665
OUT A	16	1879.625	751.865	1981.225	853.465
PWR GND	17	2153.945	1463.065	2255.545	1564.665
VC	18	1564.665	1460.525	1666.265	1562.125
OUT B	19	1889.785	2171.725	1991.385	2273.325
VCC	20	2207.285	2933.725	2308.885	3035.325
VREF	21	1874.545	3015.005	1976.145	3116.605

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead finish/ Ball material (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
UC1825VTD1	ACTIVE			0	88	RoHS & Green	Call TI	N / A for Pkg Type	25 to 25		Samples
UC1825VTD2	ACTIVE			0	10	RoHS & Green	Call TI	N / A for Pkg Type	25 to 25		Samples

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSELETE: TI has discontinued the production of the device.

(2) **RoHS:** TI defines "RoHS" to mean semiconductor products that are compliant with the current EU RoHS requirements for all 10 RoHS substances, including the requirement that RoHS substance do not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, "RoHS" products are suitable for use in specified lead-free processes. TI may reference these types of products as "Pb-Free".

RoHS Exempt: TI defines "RoHS Exempt" to mean products that contain lead but are compliant with EU RoHS pursuant to a specific EU RoHS exemption.

Green: TI defines "Green" to mean the content of Chlorine (Cl) and Bromine (Br) based flame retardants meet JS709B low halogen requirements of <=1000ppm threshold. Antimony trioxide based flame retardants must also meet the <=1000ppm threshold requirement.

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead finish/Ball material - Orderable Devices 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.

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.

重要声明和免责声明

TI 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、某特定用途方面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 产品的应用。严禁对这些资源进行其他复制或展示。您无权使用任何其他 TI 知识产权或任何第三方知识产权。您应全额赔偿因在这些资源的使用中对 TI 及其代表造成的任何索赔、损害、成本、损失和债务，TI 对此概不负责。

TI 提供的产品受 TI 的销售条款 (<https://www.ti.com.cn/zh-cn/legal/termsofsale.html>) 或 [ti.com.cn](https://www.ti.com.cn) 上其他适用条款/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。

邮寄地址：上海市浦东新区世纪大道 1568 号中建大厦 32 楼，邮政编码：200122

Copyright © 2021 德州仪器半导体技术（上海）有限公司