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

(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。

- 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

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与了特别关注。 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。

保护电路包括一个阀值电压为 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.

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

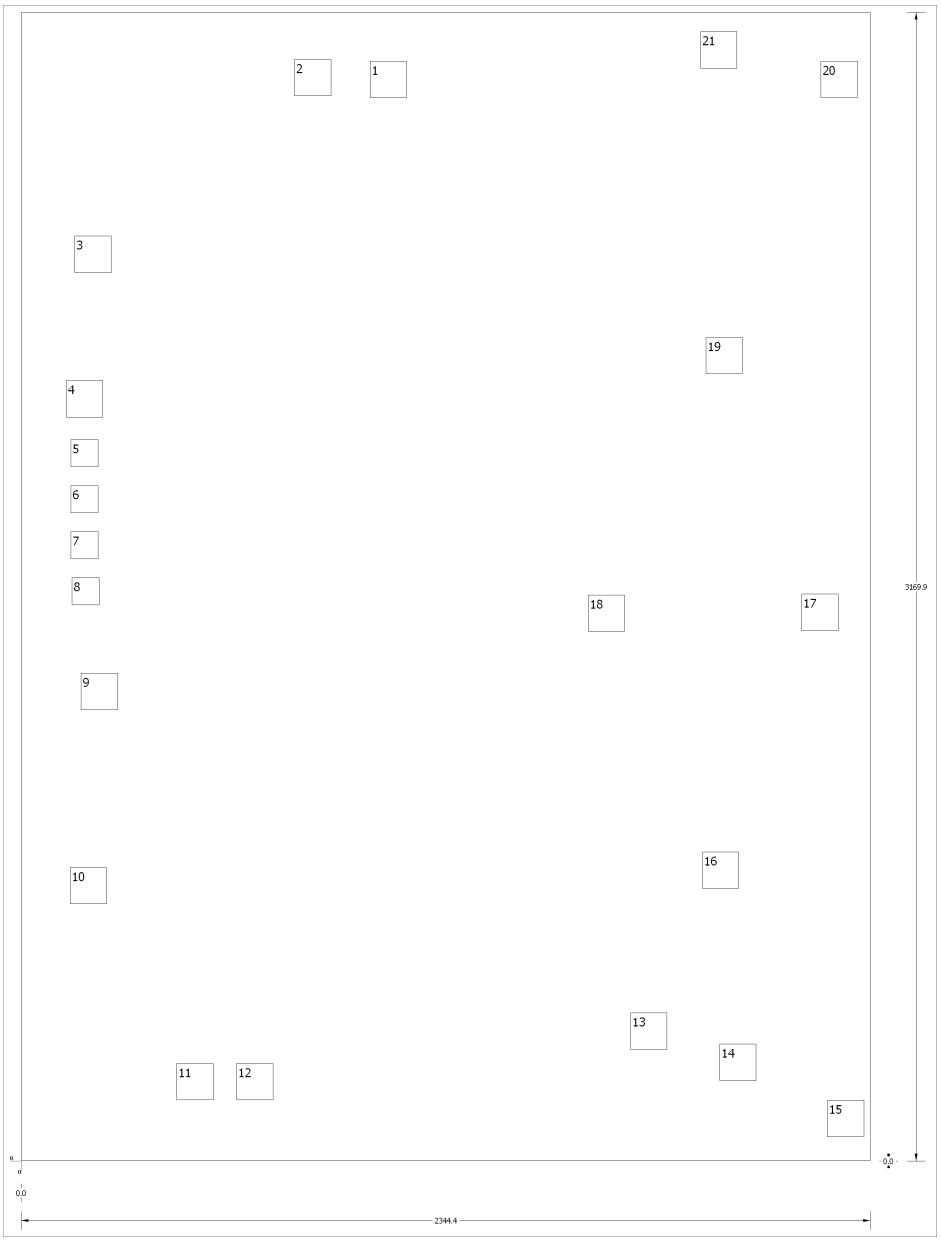

Table 1. Bond Pad Coordinates in Microns

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 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)
UC1825VTD1	Active	Production	null (null) | 0	88 | NOT REQUIRED	-	Call TI	Call TI	25 to 25	
UC1825VTD1.A	Active	Production	null (null) | 0	88 | NOT REQUIRED	-	Call TI	Call TI	25 to 25	
UC1825VTD2	Active	Production	null (null) | 0	10 | NOT REQUIRED	-	Call TI	Call TI	25 to 25	
UC1825VTD2.A	Active	Production	null (null) | 0	10 | NOT REQUIRED	-	Call TI	Call TI	25 to 25	

(1) **Status:** For more details on status, see our product life cycle.

(2) **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.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

(4) **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.

(5) **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.

(6) **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.

OTHER QUALIFIED VERSIONS OF UC1825-DIE :

- Space : UC1825-SP

NOTE: Qualified Version Definitions:

- Space - Radiation tolerant, ceramic packaging and qualified for use in Space-based application

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最后更新日期：2025 年 10 月