TECH PUBLIC
台舟电子

# TPWL2815D Series

## Ultra Low Consumption CMOS Voltage Regulator

WWW.TECHPUBLIC.COM

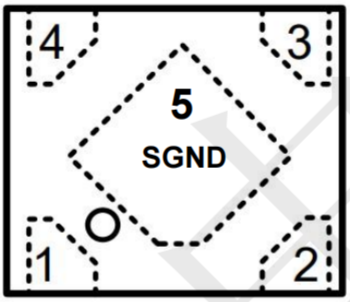
## Features

- 0.8μA Current at no Load(TYP.)
- ±2% Output Accuracy
- 300mA Output Current
- Compact package: DFN1X1-4

## Applications

- Portable consumer equipments
- Radio control systems
- Wireless Communication Equipments
- Ultra Low Power Micro controller

## PIN CONFIGURATION




(Top View)
DFN1X1-4

| Pin Number | Pin Name | Pin Function |
|---|---|---|
| 1 | $V_{OUT}$ | Output Pin |
| 2 | GND | Ground |
| 3 | EN | Chip Enable Pin |
| 4 | $V_{IN}$ | Power Input Pin |
| 5 | SGND | Connect this pad to GND or leave floating.Do not connect to any potential other than GND. Connect the thermal pad to alarge-area ground plane for best thermal performance. |

## Ordering Information

TPWL2815D18

OUTPUT VOLTAGE

15:1.5V 18:1.8V
25:2.5V 28:2.8V
30:3.0V 33:3.3V

**Example: TPWL2815D18**

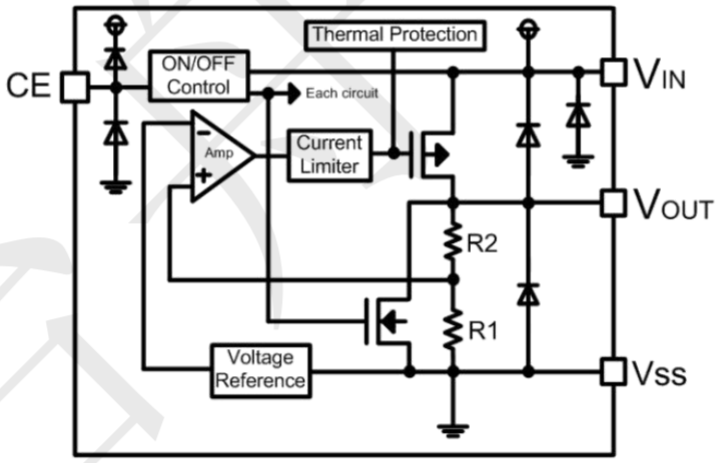
→ 1.8VVersion,inDFN1X1-4Package
&Tape & Reel Packing Type

## Absolute Maximum Ratings

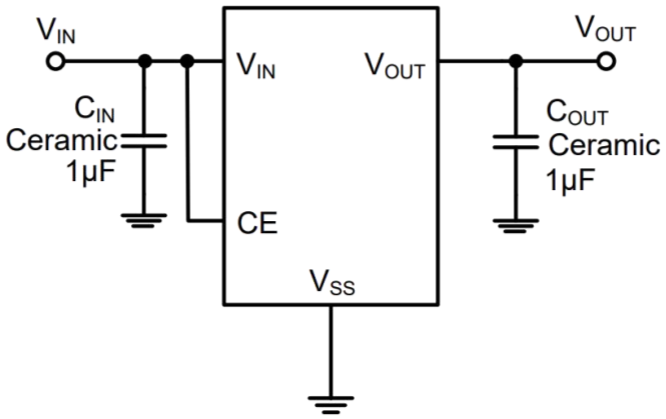
**over operating free-air temperature range (unless otherwise noted)**

| | | MIN | MAX | UNIT |
|---|---|---|---|---|
| VIN | Continuous input voltage range | -0.3 | 6.5 | V |
| VOUT | Output voltage range | -0.3 | VIN+0.3 | |
| Current | Maximum output current | Internally limited | | mA |
| Temperature | Operating Temperature, Topr | -40 | +85 | ℃ |
| | Storage, Tstg | -40 | +150 | |
| | Welding temperature and time，Tsolder | +260, 10s | | |
| Power Dissipation | Pd DFN1X1-4 | 400 | | mW |

## BLOCK DIAGRAM




## Typical Application Circuit



## Electrical Characteristics ( TA=25℃, unless otherwise specified)

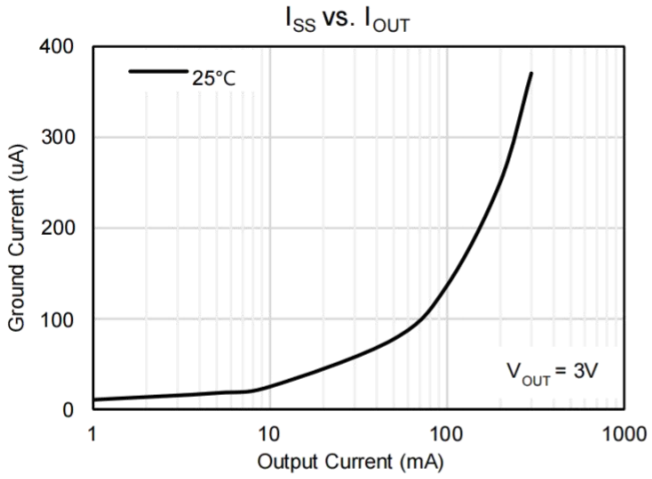
| PARAMETER | SYMBOL | CONDITIONS | | MIN. | TYP. | MAX. | UNITS |
|---|---|---|---|---|---|---|---|
| Input Voltage | $V_{IN}$ | -- | | 1.8 | -- | 5.5 | V |
| Output Voltage | $V_{OUT}$ | -- | | 1.2 | -- | 3.6 | V |
| DC Output Accuracy | -- | $I_{OUT}$=1mA | | -2 | -- | 2 | % |
| Output Current | $I_{OUT}$ | $V_{IN}$=1.8V | | 150 | -- | -- | mA |
| | | $V_{IN}$=4.3V | | 350 | -- | -- | |
| Dropout Voltage | $V_{dif}$ (2) | $I_{OUT}$ =100mA,$V_{OUT}$=3.3V | | -- | 110 | -- | mV |
| Supply Current | $I_{SS}$ | $I_{OUT}$=0 | | -- | 0.8 | 1.3 | μA |
| Standby Current | $I_{STBY}$ | CE=$V_{SS}$ | | -- | -- | 0.1 | μA |
| Load Regulation | $\Delta V_{OUT}$ | $V_{IN}$= $V_{OUT}$ +1V<br>1mA≤$I_{OUT}$≤100mA | | -- | 5 | -- | mV |
| Line Regulation | $\frac{\Delta V_{OUT}}{V_{OUT}\times\Delta V_{IN}}$ | $I_{OUT}$ =10mA<br>$V_{OUT}$ +1V≤$V_{IN}$≤6V | | -- | 0.03 | 0.2 | %/V |
| Temperature Coefficient | $\frac{\Delta V_{OUT}}{V_{OUT}\times\Delta T_A}$ | $I_{OUT}$=10mA<br>-40°C<$T_A$<85°C | | -- | 50 | -- | ppm |
| Output Current Limit | $I_{LIM}$ | $V_{OUT}$=90%x$V_{OUT}$<br>($V_{OUT}$≥3.0V) | | 350 | -- | -- | mA |
| Short Current | $I_{SHORT}$ | $V_{OUT}$ =$V_{SS}$ | | -- | 10 | -- | mA |
| Power Supply Rejection Ratio | PSRR | $I_{OUT}$=50mA | 100Hz | -- | 65 | -- | dB |
| | | | 1kHz | -- | 70 | -- | |
| | | | 10kHz | -- | 50 | -- | |
| | | | 100kHz | -- | 35 | -- | |
| CE "High" Voltage | $V_{CE}$"H" | -- | | 1.5 | -- | $V_{IN}$ | V |
| CE "Low" Voltage | $V_{CE}$"L" | -- | | -- | -- | 0.3 | V |
| COUT Auto-Discharge Resistance | $R_{DISCHRG}$ | $V_{IN}$=5V, $V_{OUT}$=3.0V<br>$V_{CE}$=$V_{SS}$ | | -- | 200 | -- | Ω |

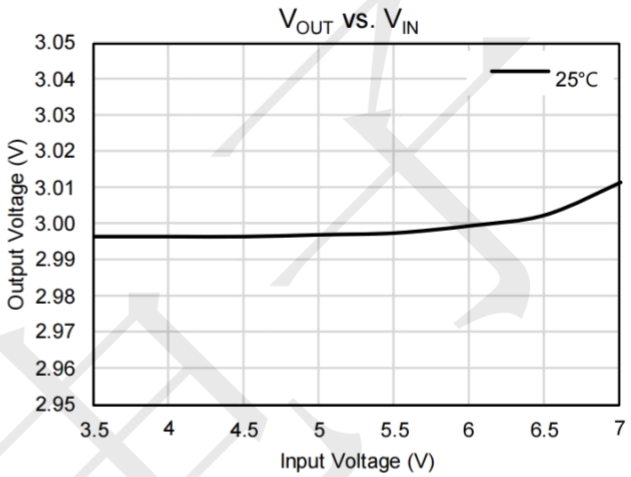
Note:

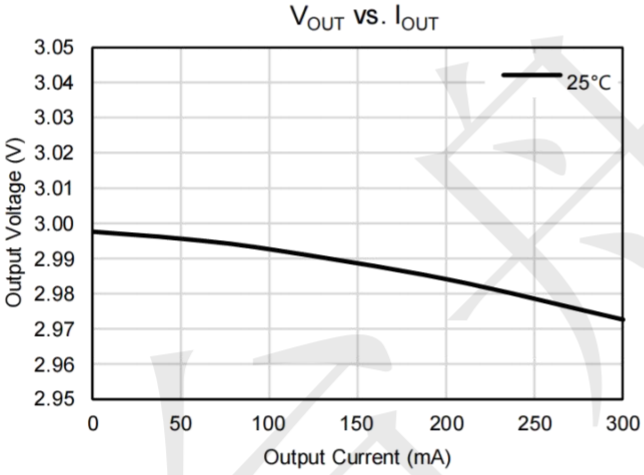
1. Test condition: the device is mounted on FR-4 substrate PC board, with minimum recommended pad layout.

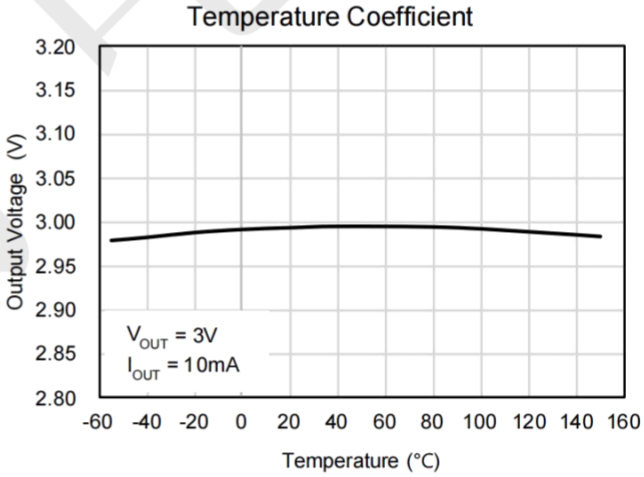
2.Vdif :The Difference Of Output Voltage And Input Voltage When Input Voltage Is Decreased Gradually Till Output Voltage Equals To 98% Of VOUT .

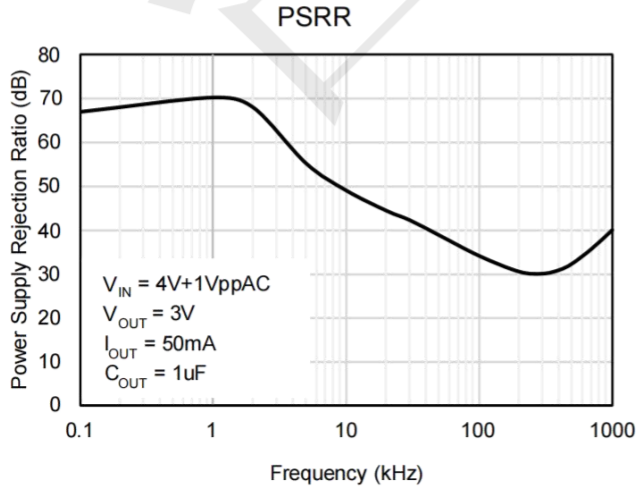
## Typical Operating Characteristics (25 °C, unless otherwise noted)

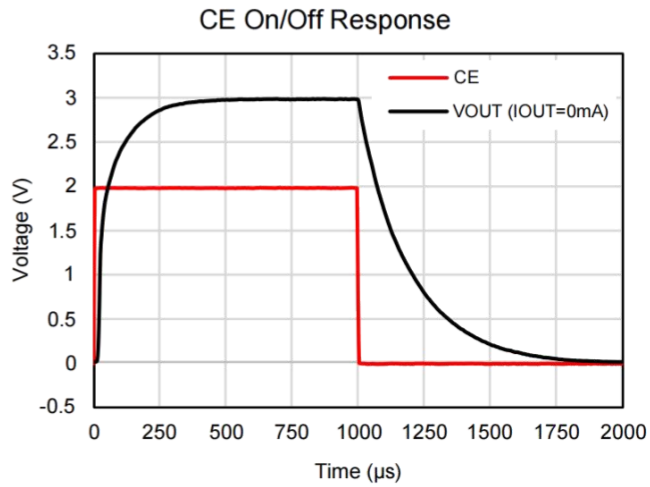


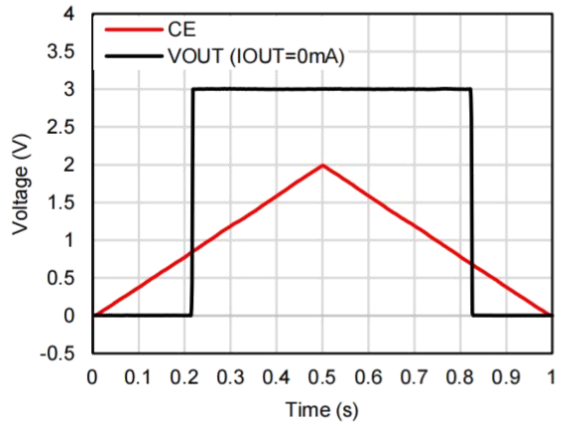



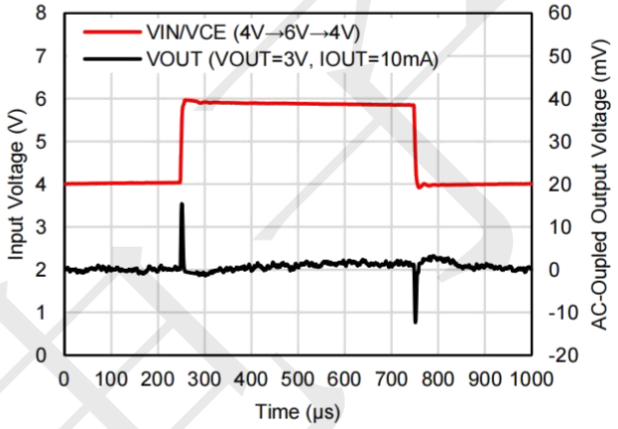



## Typical Operating Characteristics (25 °C, unless otherwise noted)

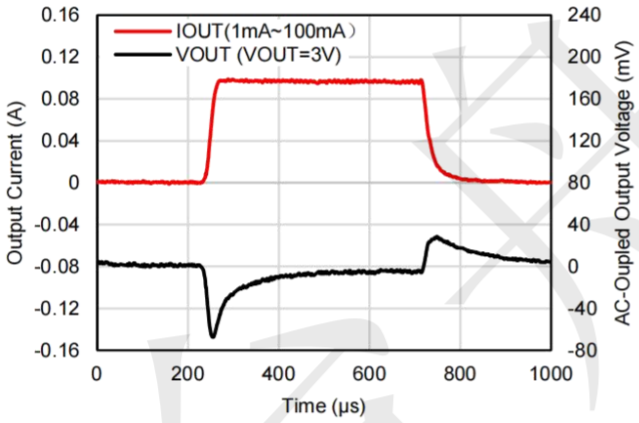
CE Threshold



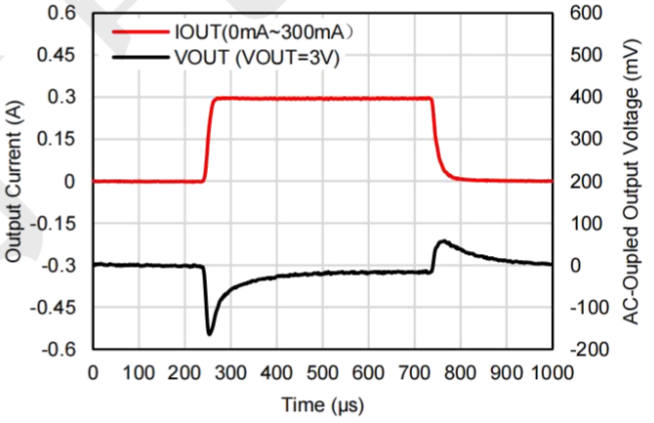

Line Transient



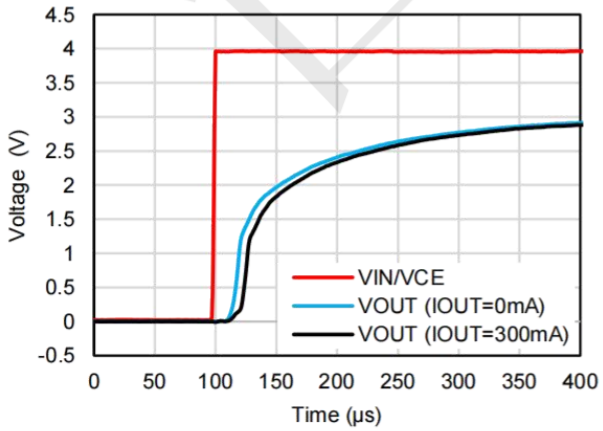

Load Transient



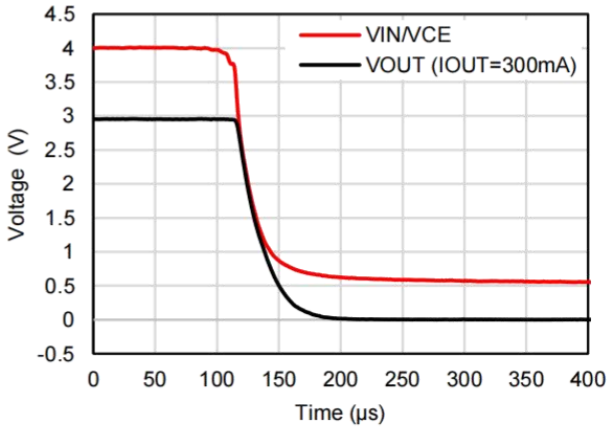

Load Transient




Power Up Response

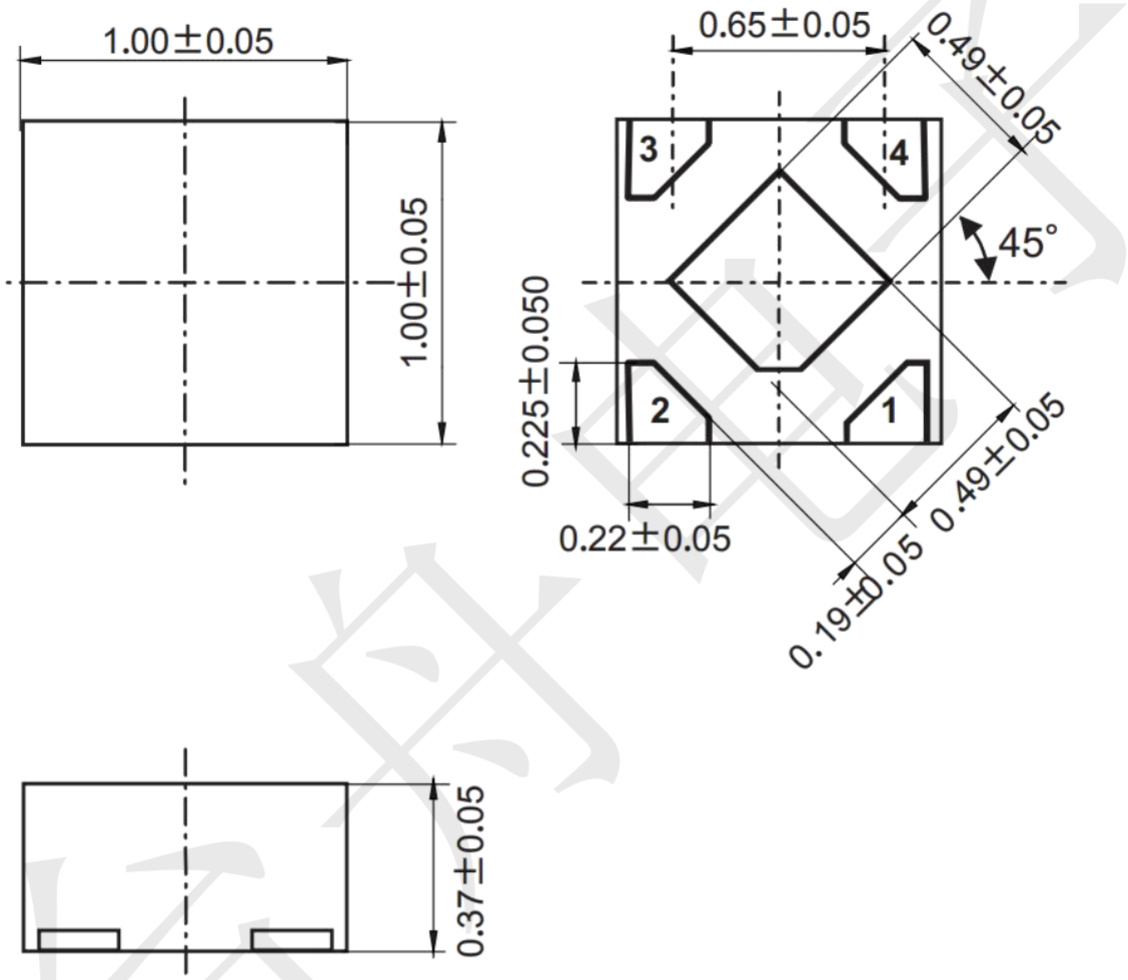



Power Down Response



## Package Outline Dimensions (unit: mm)

**DFN1X1-4**




## Mounting Pad Layout (unit: mm)

