


Current Mode PWM Controller -0.1V to 11V 1A 500kHz 8-Pin PDIP Tube

Manufacturer:	Texas Instruments, Inc
Package/Case:	DIP8
Product Type:	Power Management ICs
RoHS:	RoHS Compliant/Lead free 
Lifecycle:	Active



Images are for reference only

[Inquiry](#)

General Description

The TPS746-Q1 is a 1-A, ultra-low-dropout regulator (LDO) with power-good functionality. This device is available in a small 6-pin, 2-mm × 2-mm WSON package and a small 8-pin, 3-mm × 3-mm VSON package with wettable flanks to facilitate optical inspection. The TPS746-Q1 consumes low quiescent current and provides fast line and load transient performance.

The TPS746-Q1 is a flexible device for post-regulation by supporting an input voltage range from 1.5 V to 6.0 V and an externally adjustable output range of 0.55 V to 5.5 V. The device also features fixed output voltages for powering common voltage rails.

The TPS746-Q1 has a power-good (PG) output that monitors the voltage at the feedback pin to indicate the status of the output voltage. The EN input and PG output can be used for sequencing multiple power supplies in the system.

The TPS746-Q1 is stable with small ceramic output capacitors, allowing for a small overall solution size. A precision band-gap and error amplifier provides high accuracy of ±0.85% (max) at 25°C and ±1.5% (max) over temperature. This device includes integrated thermal shutdown, current limit, and undervoltage lockout (UVLO) features. The TPS746-Q1 has an internal foldback current limit that helps reduce the thermal dissipation during short-circuit events.

Key Features

AEC-Q100 qualified for automotive applications:
Temperature grade 1: -40°C to $+125^{\circ}\text{C}$, T_A

Device operating junction temperature range:
 -40°C to $+150^{\circ}\text{C}$

Package:
2-mm \times 2-mm wettable flank WSON

3-mm \times 3-mm wettable flank VSON

Input voltage range: 1.5 V to 6.0 V

Output voltage range:
Fixed option: 0.65 V to 5.0 V

Adjustable option: 0.55 V to 5.5 V

High PSRR: 38 dB at 100 kHz

Output accuracy: $\pm 0.85\%$ typical, $\pm 1.5\%$ maximum

Power-good output options:
Open-drain or push-pull

Ultra-low dropout:
265 mV (max) at 1 A (3.3 V_{OUT})

Stable with a 1- μF or larger capacitor

Low IQ: 25 μA (typical)

Active output discharge

Functional Safety-Capable
Documentation available to aid functional safety system design

Low thermal resistance:
DRV (6-pin WSON), $R_{\theta JA} = 80.3^{\circ}\text{C}/\text{W}$

DRB (8-pin VSON), $R_{\theta JA} = 55.5^{\circ}\text{C}/\text{W}$

Recommended For You

UCC28064ADR

Texas Instruments, Inc

SOP16

UC3637N

Texas Instruments, Inc

DIP-18

UCC27517DBVR

Texas Instruments, Inc

SOT23-5

UCC2946TPWRQ1

Texas Instruments, Inc

TSSOP8

UCC28730QDRQ1

Texas Instruments, Inc

SOP7

UCC21222QDRQ1

Texas Instruments, Inc

SOP16

UCD9090QRGZRQ1

Texas Instruments, Inc
VQFN-48

UCC27531QDBVRQ1

Texas Instruments, Inc
SOT23-6

UCC27511AQDBVRQ1

Texas Instruments, Inc
SOT23-6

UCC2803QDRQ1

Texas Instruments, Inc
SOP8

UCC28951QPWRQ1

Texas Instruments, Inc
TSSOP24

UCC21320QDWKRQ1

Texas Instruments, Inc
SOIC-14

UCC27322QDGNRQ1

Texas Instruments, Inc
HVSSOP-8

UCC28950QPWRQ1

Texas Instruments, Inc
TSSOP24

UCC2808AQDR-2Q1

Texas Instruments, Inc
SOP8