# CD5020A PWM Controller

CYT
2023.07.14
001

## General Description

The CD5020A high voltage pulse-width-modulation (PWM) controller contains all of the features needed to implement single ended primary power converter topologies. CD5020A is based on current-mode control, and eases the design of loop compensation. The CD5020A includes a high-voltage start-up regulator that operates over a wide input voltage range up to 100V. The PWM controller is designed for high speed oscillator with frequency up to 1MHz and total propagation delays less than 100ns. Additional features include an error amplifier, precision reference, line under-voltage lockout, cycle-by-cycle current limit, slope compensation, soft-start, oscillator synchronization capability and thermal shutdown.
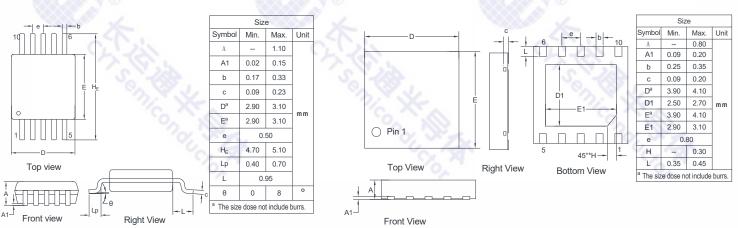
## Absolute Maximum Ratings

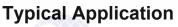| | |
|---|---|
| VIN to GND | -0.3V to 100V |
| VCC to GND | -0.3V to 16V |
| RT to GND | -0.3V to 5.5V |
| All other pins to GND | -0.3V to 7V |
| Junction temperature | 150℃ |
| Storage temperature | -65℃ to 150℃ |

## Recommended Operating Conditions

| | |
|---|---|
| VIN voltage | 13V to 90V |
| VCC voltage | 8V to 15V |
| Operating junction temperature ($T_J$) | -40℃ to 125℃ |

## Package Diagram



| Size | | | |
|---|---|---|---|
| Symbol | Min. | Max. | Unit |
| A | -- | 1.10 | mm |
| A1 | 0.02 | 0.15 | |
| b | 0.17 | 0.33 | |
| c | 0.09 | 0.23 | |
| D[a] | 2.90 | 3.10 | |
| E[a] | 2.90 | 3.10 | |
| e | 0.50 | | |
| H$_E$ | 4.70 | 5.10 | |
| Lp | 0.40 | 0.70 | |
| L | 0.95 | | |
| θ | 0 | 8 | ° |

[a] The size dose not include burrs.

Top view

Front view

Right View

VSSOP10

Top View

Right View

Bottom View

Front View

| Size | | | |
|---|---|---|---|
| Symbol | Min. | Max. | Unit |
| A | -- | 0.80 | mm |
| A1 | 0.09 | 0.20 | |
| b | 0.25 | 0.35 | |
| c | 0.09 | 0.20 | |
| D[a] | 3.90 | 4.10 | |
| D1 | 2.50 | 2.70 | |
| E[a] | 3.90 | 4.10 | |
| E1 | 2.90 | 3.10 | |
| e | 0.80 | | |
| H | -- | 0.30 | |
| L | 0.35 | 0.45 | |

[a] The size dose not include burrs.

WSON10

## Typical Application

REV.A0