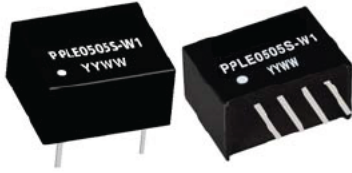


DESCRIPTION: 0.1W 1.5KVDC Isolated Single Output DC/DC Converters

The PPLE-W1 series are miniature, isolated low power and high efficiency DC/DC converters in a SIP and DIP package. They offer the ideal solution in many space critical applications for board level power distribution. The internal SMD construction makes it possible to offer a product with high performance at low cost. The series offers smaller size, improved efficiency, lower output ripple noise and 1.5KVDC isolation. Operating temperature: -40°C to 105°C.



FEATURES

| | | |
|--|------------------------------------|---------------------------------------|
| RoHS compliant, CE certification | Single output rail | 1.5KVDC isolation |
| High efficiency for low power applications | SIP & DIP package styles | Power density 0.36W/cm ³ |
| UL 94V-0 package material | Footprint from 0.69cm ² | Input voltage: 3.3V, 5V, 12V |
| Output voltage: 3.3V, 5V, 9V, 12V, 15V | Custom solutions available | Operating temperature: -40°C to 105°C |

SELECTION GUIDE

| Part Number | Nominal Input Voltage | Output Voltage | Output Current (Max./Min) | Efficiency | Package Style |
|--------------|-----------------------|----------------|---------------------------|------------|---------------|
| | V | V | mA | % | |
| PPLE0303D-W1 | 3.3 | 3.3 | 30.3/3.03 | 55 | DIP |
| PPLE0305D-W1 | 3.3 | 5 | 20/2 | 57 | DIP |
| PPLE0503D-W1 | 5 | 3.3 | 30.3/3.03 | 58 | DIP |
| PPLE0505D-W1 | 5 | 5 | 20/2 | 58 | DIP |
| PPLE0509D-W1 | 5 | 9 | 11.1/1.11 | 58 | DIP |
| PPLE0512D-W1 | 5 | 12 | 8.3/0.83 | 58 | DIP |
| PPLE0515D-W1 | 5 | 15 | 6.7/0.67 | 58 | DIP |
| PPLE0303S-W1 | 3.3 | 3.3 | 30.3/3.03 | 58 | SIP |
| PPLE0305S-W1 | 3.3 | 5 | 20/2 | 58 | SIP |
| PPLE0503S-W1 | 5 | 3.3 | 30.3/3.03 | 58 | SIP |
| PPLE0505S-W1 | 5 | 5 | 20/2 | 57 | SIP |
| PPLE0509S-W1 | 5 | 9 | 11/1.1 | 58 | SIP |
| PPLE0512S-W1 | 5 | 12 | 8.3/0.83 | 58 | SIP |
| PPLE0515S-W1 | 5 | 15 | 6.7/0.67 | 58 | SIP |
| PPLE1205D-W1 | 12 | 5 | 20/2 | 58 | DIP |
| PPLE1209D-W1 | 12 | 9 | 11/1.1 | 58 | DIP |
| PPLE1212D-W1 | 12 | 12 | 8.3/0.83 | 58 | DIP |
| PPLE1215D-W1 | 12 | 15 | 6.7/0.67 | 58 | DIP |
| PPLE1203S-W1 | 12 | 3.3 | 30.3/3.03 | 58 | SIP |
| PPLE1205S-W1 | 12 | 5 | 20/2 | 58 | SIP |
| PPLE1209S-W1 | 12 | 9 | 11/1.1 | 58 | SIP |
| PPLE1212S-W1 | 12 | 12 | 8.3/0.83 | 58 | SIP |
| PPLE1215S-W1 | 12 | 15 | 6.7/0.67 | 58 | SIP |

Add suffix "P" for continuous short circuit protection, for example PPLE0505SP-W1.

INPUT CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|---------------|------------------|------|------|------|-------|
| Voltage range | 3.3V input types | 2.9 | 3.3 | 3.6 | V |
| Voltage range | 5V input types | 4.5 | 5.0 | 5.5 | V |
| Voltage range | 12V input types | 11 | 12 | 13.3 | V |

OUTPUT CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|---|---|------|------|------|-------|
| Rated Power | TA= -40°C to 85°C | | | 0.1 | W |
| Voltage Set Point Accuracy | See tolerance envelope | | | | |
| Line regulation | High VIN to low VIN (voltage variation +/-5%) | | 1.0 | 1.2 | %/% |
| Load Regulation(10% load to rated load) | 5V output types | | | 8 | % |
| Load Regulation(10% load to rated load) | all other types | | | 6 | % |

All specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified.

ABSOLUTE MAXIMUM RATINGS

| | |
|---|----------|
| Short-circuit protection | 1 second |
| Lead temperature 1.5mm from case for 10 seconds | 300°C |
| Input voltage V_{in} , PPLE3.3 | 5.5V |
| Input voltage V_{in} , PPLE05 | 7V |
| Input voltage V_{in} , PPLE12 | 15V |

ISOLATION CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|------------------------|---------------------|------|------|------|-------|
| Isolation test voltage | Tested for 1 second | 1500 | | | VDC |
| Resistance | $V_{iso}=1000VDC$ | 1 | | | GΩ |

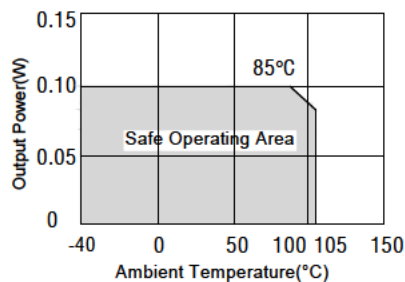
GENERAL CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|---------------------|-----------------|------|------|------|-------|
| Switching frequency | All input types | | 80 | | kHz |

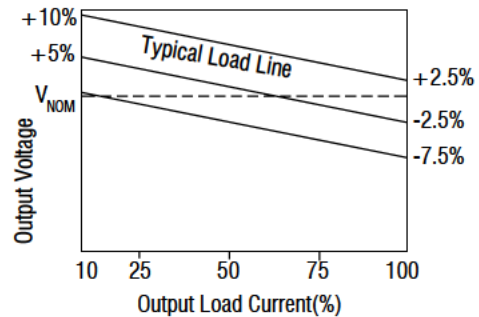
TEMPERATURE CHARACTERISTICS

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|---------------|--|------|------|------|-------------|
| Specification | Derating if the temperature $\geq 85^{\circ}C$ | -40 | | 105 | $^{\circ}C$ |
| Storage | | -55 | | 130 | $^{\circ}C$ |
| Cooling | Free air convection | | | | |

TEMPERATURE DERATING GRAPHS



TOLERANCE ENVELOPES



MECHANICAL DIMENSIONS

PIN CONNECTIONS

DIP Package

SIP Package

| 8 PIN DIP | |
|-----------|----------|
| Pin | Function |
| 1 | -Vin |
| 4 | +Vin |
| 5 | +Vout |
| 7 | -Vout |

| 4 PIN SIP | |
|-----------|----------|
| Pin | Function |
| 1 | -Vin |
| 2 | +Vin |
| 3 | -Vout |
| 4 | +Vout |

All dimensions in mm ±0.25mm. All pins on a 0.54 mm pitch and within ±0.25mm of true position.
Weight: 1.30g(SIP), 1.48g(DIP)

RECOMMENDED FOOTPRINT DETAILS

8Pin DIP Package

4Pin SIP Package

TUBE OUTLINE DIMENSIONS

8Pin DIP Tube

4Pin SIP Tube

Unless otherwise stated all dimensions in mm ±0.5mm.
 Tube length (8 Pin DIP) : 520mm ±2mm.
 Tube length (4 Pin SIP) : 520mm ±2mm.

Tube Quantity : 35PCS