

SERIES: PTK10 | DESCRIPTION: DC-DC CONVERTER
FEATURES

- industry standard pin out
- wide 4:1 input range
- fully isolated
- over-current protection
- over-voltage protection
- six-sided EMI shielding
- constant switching frequency
- high efficiency
- compact size 2.0"x1.0"x0.4"
- 3 year warranty



| MODEL | input voltage range (Vdc) | output voltage (Vdc) | output current | | output power max (W) | ripple ¹ max (mVp-p) | noise ¹ max (mVp-p) | efficiency typ (%) |
|---------------|---------------------------|----------------------|----------------|----------|----------------------|---------------------------------|--------------------------------|--------------------|
| | | | min (mA) | max (mA) | | | | |
| PTK10-Q24-S3 | 10 ~ 36 | 3.3 | 0.24 | 2.4 | 7.92 | 75 | 75 | 79 |
| PTK10-Q24-S5 | 10 ~ 36 | 5 | 0.2 | 2.0 | 10.0 | 75 | 75 | 82 |
| PTK10-Q24-S12 | 10 ~ 36 | 12 | 0.09 | 0.9 | 10.8 | 120 | 120 | 83 |
| PTK10-Q24-S15 | 10 ~ 36 | 15 | 0.07 | 0.7 | 10.5 | 150 | 150 | 84 |
| PTK10-Q24-D5 | 10 ~ 36 | ±5 | 0.1/0.1 | 1.0/1.0 | 10.0 | 100 | 100 | 80 |
| PTK10-Q24-D5A | 10 ~ 36 | ±5 | 0.15/0.05 | 1.5/0.5 | 10.0 | 100 | 100 | 78 |
| PTK10-Q24-D12 | 10 ~ 36 | ±12 | 0.045 | 0.45 | 10.8 | 120 | 120 | 83 |
| PTK10-Q24-D15 | 10 ~ 36 | ±15 | 0.035 | 0.35 | 8.5 | 150 | 150 | 83 |
| PTK10-Q48-S3 | 20 ~ 72 | 3.3 | 0.24 | 2.4 | 7.92 | 75 | 75 | 78 |
| PTK10-Q48-S5 | 20 ~ 72 | 5 | 0.2 | 2.0 | 10.0 | 75 | 75 | 81 |
| PTK10-Q48-S12 | 20 ~ 72 | 12 | 0.09 | 0.9 | 10.8 | 120 | 120 | 84 |
| PTK10-Q48-S15 | 20 ~ 72 | 15 | 0.07 | 0.7 | 10.5 | 150 | 150 | 85 |
| PTK10-Q48-D5 | 20 ~ 72 | ±5 | 0.1/0.1 | 1.0/1.0 | 10.0 | 100 | 100 | 81 |
| PTK10-Q48-D5A | 20 ~ 72 | ±5 | 0.15/0.05 | 1.5/0.5 | 10.0 | 100 | 100 | 81 |
| PTK10-Q48-D12 | 20 ~ 72 | ±12 | 0.045 | 0.45 | 10.8 | 120 | 120 | 83 |
| PTK10-Q48-D15 | 20 ~ 72 | ±15 | 0.035 | 0.35 | 10.5 | 150 | 150 | 83 |

Notes: 1. All models are also available in an extended temperature range of -40°C-85°C. For these models, append "M" to the model number, e.g. PTK10-Q48-S5M.

2. Ripple & noise measured with a 20MHz bandwidth, off a 10uF electrolytic and a 0.1uF ceramic cap in parallel at the output.

INPUT

| parameter | conditions/description | min | typ | max | units |
|-------------------------|------------------------|-----|-----|-----|-------|
| operating input voltage | | 10 | 24 | 36 | Vdc |
| | | 20 | 48 | 72 | Vdc |

OUTPUT

| parameter | conditions/description | min | typ | max | units |
|---|---|-----|------|-------|-------|
| line regulation (low line to high line) | single output | | ±0.5 | | % |
| | dual output | | ±1.0 | | % |
| load regulation measured from 10% to full load | single output models - no load to full load | | ±1.0 | | % |
| | dual output models - balanced loads | | ±2.5 | | % |
| voltage accuracy | positive, refer to recommended circuit | | ±1 | ±3 | % |
| | negative, refer to recommended circuit | | ±3 | ±5 | % |
| switching frequency | constant | | 300 | | kHz |
| temperature coefficient | | | | ±0.03 | %/°C |

PROTECTIONS

| parameter | conditions/description | min | typ | max | units |
|--------------|---|-----|-----|-----|-------|
| over-current | continuous, automatic recovery ⁴ | 105 | | 135 | % |
| over-voltage | internal protection zener ⁴ | 110 | | 140 | % |

Notes: 4. continuous operation in a protected state may compromise long-term reliability.

SAFETY AND COMPLIANCE

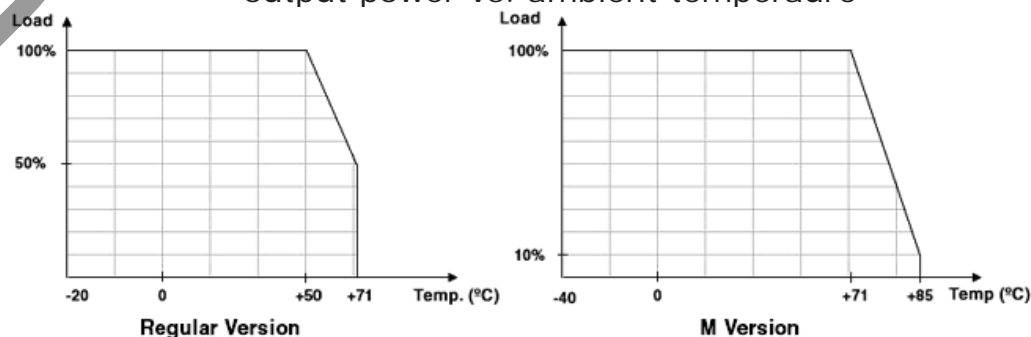
| parameter | conditions/description | min | typ | max | units |
|-----------------------|---------------------------------------|---------|-----|-----|-------|
| efficiency | typical at full load | 77 | | 83 | % |
| isolation voltage | input/case, input/output, output/case | 500 | | | Vac |
| insulation resistance | at 500 Vdc | 100 | | | MΩ |
| RoHS compliant | yes | | | | |
| MTBF | MIL-HDBK-217F | 580,000 | | | hours |

ENVIRONMENTAL

| parameter | conditions/description | min | typ | max | units |
|----------------------------|-------------------------------------|-----|-----|-----|-------|
| case operating temperature | regular models - see derating curve | -20 | | 71 | °C |
| | extended temperature models | -40 | | 85 | °C |
| storage temperature | | -40 | | 105 | °C |
| storage humidity | non-condensing | 5 | | 95 | % |
| temperature rise | 100% load | | 40 | | °C |
| lead temperature | 1.5 mm from the case for 10 seconds | | | 300 | °C |

DERATING CURVES

output power vs. ambient temperature

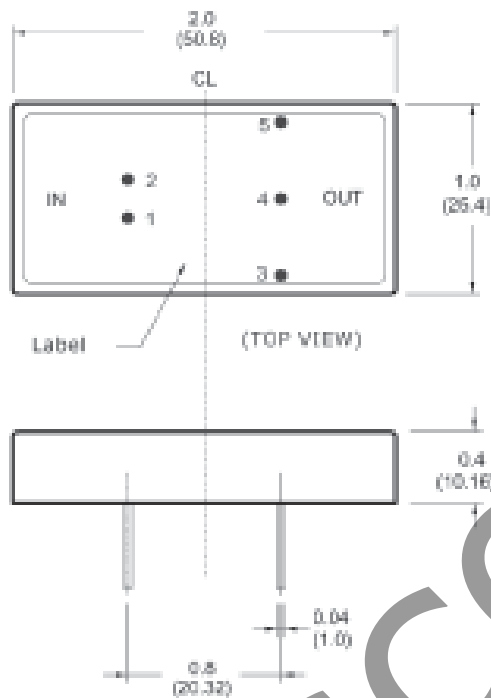


MECHANICAL

| parameter | conditions/description | min | typ | max | units |
|---------------|---|-----|-----|-----|-------|
| dimensions | 2.0 x 1.0 x 0.4 inch (50.8 x 25.4 x 10.16 mm) | | | | |
| case material | Zn | | | | |
| weight | | | 40 | | g |

MECHANICAL DRAWING

units: inches (mm)

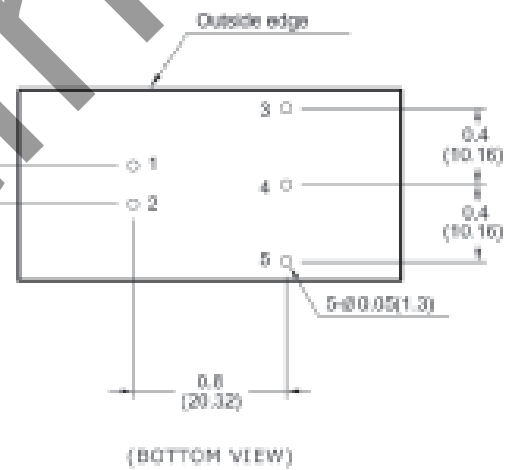


Single Output

1. +Vin
2. -Vin
3. +Vout
4. No pin
5. -Vout

Dual Output

1. +Vin
2. -Vin
3. +Vout
4. Com
5. -Vout



PIN Definitions

- +Vin: Input positive terminal
- Vin: Input negative terminal
- CNT: Remote On/Off control of output voltage. Referenced to -Vin
- +Vout: Main output positive terminal
- Vout: Output negative terminal
- +Vaux: Positive auxiliary output
- Vaux: Negative auxiliary output
- Com: Common node for dual- or triple-output models
- Trim: For trimming output voltage on single- or dual-output models

REVISION HISTORY

| rev. | description | date |
|------|----------------------------|------------|
| 1.0 | initial release | 07/07/2011 |
| 1.01 | updated mechanical drawing | 03/27/2012 |
| 1.02 | discontinued | 09/28/2012 |

The revision history provided is for informational purposes only and is believed to be accurate.



Headquarters
20050 SW 112th Ave.
Tualatin, OR 97062
800.275.4899

Fax 503.612.2383
cui.com
techsupport@cui.com

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.