

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

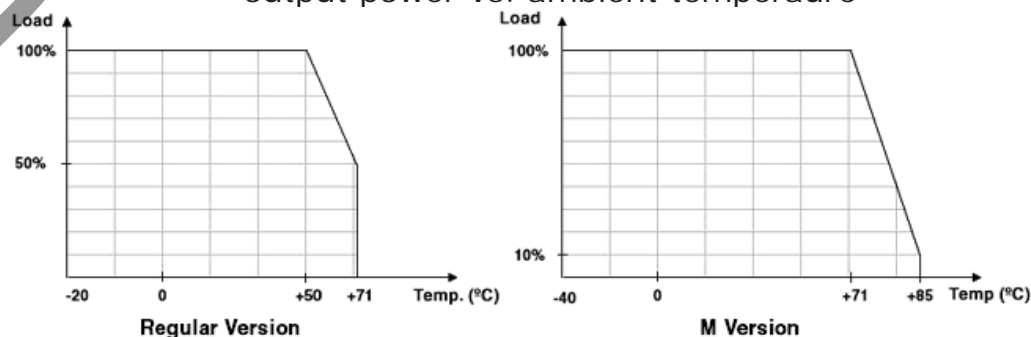
| parameter | conditions/description | min | typ | max | units |
|-----------------------|---------------------------------------|---------|-----|-----|-------|
| efficiency | typical at full load | 77 | | 83 | % |
| isolation voltage | input/case, input/output, output/case | 500 | | | Vac |
| insulation 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



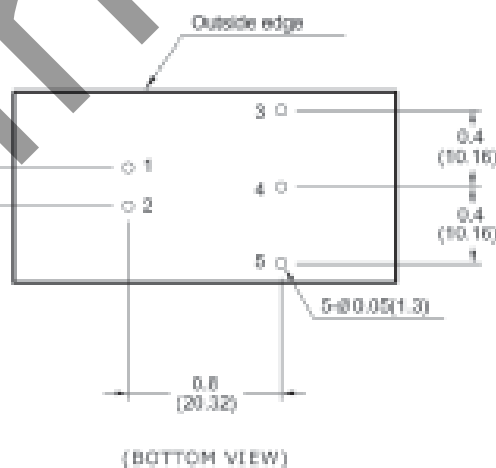
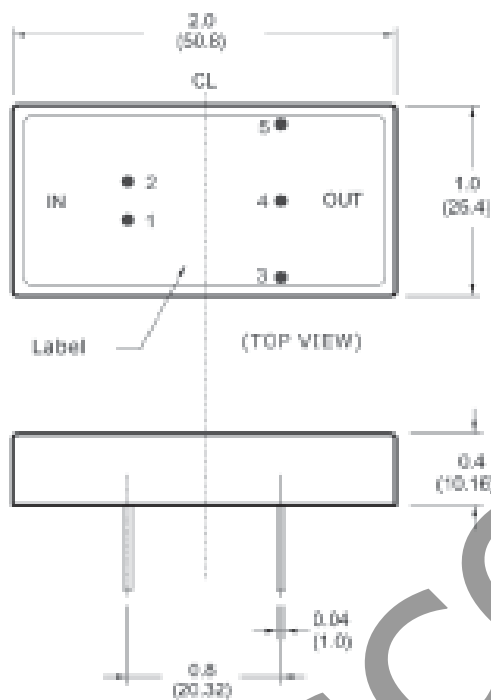
MECHANICAL

| 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 | Dual Output |
|---------------|-------------|
| 1. +Vin | 1. +Vin |
| 2. -Vin | 2. -Vin |
| 3. +Vout | 3. +Vout |
| 4. No pin | 4. Com |
| 5. -Vout | 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.



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