

**PART NUMBER:** PTK10 series

**DESCRIPTION:** DC/DC converter

**features**

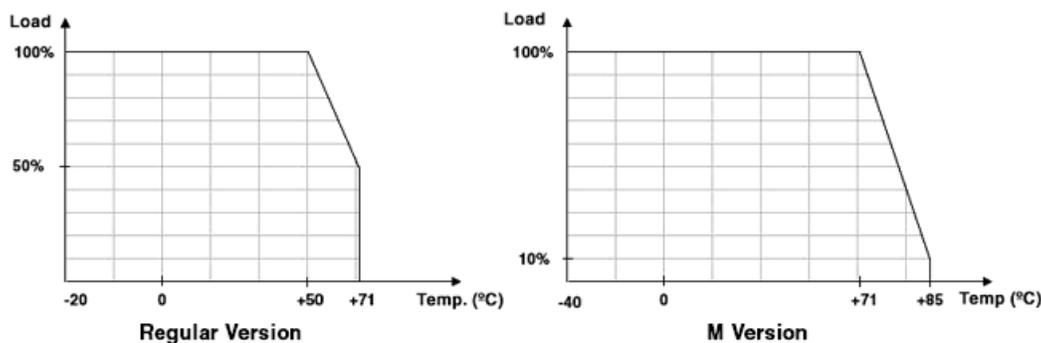
- industry standard pin out
- wide 4:1 input range
- fully isolated
- over-current protection
- over-voltage protection
- six-sided EMI shielding
- constant switching frequency
- high efficiency
- compact size 2.0"x1.0"x0.4"
- 3 year warranty



| model <sup>1</sup><br>number | output<br>power<br>(max) | input<br>voltage | output<br>voltage | output<br>current<br>(max) | ripple & noise <sup>2</sup><br>mV P-P | efficiency<br>(typ.) |
|------------------------------|--------------------------|------------------|-------------------|----------------------------|---------------------------------------|----------------------|
| PTK10-Q24-S3                 | 7.92W                    | 10-36VDC         | 3.3VDC            | 2.4A                       | 75                                    | 79%                  |
| PTK10-Q24-S5                 | 10.0W                    | 10-36VDC         | 5VDC              | 2.0A                       | 75                                    | 82%                  |
| PTK10-Q24-S12                | 10.8W                    | 10-36VDC         | 12VDC             | 0.9A                       | 120                                   | 83%                  |
| PTK10-Q24-S15                | 10.5W                    | 10-36VDC         | 15VDC             | 0.7A                       | 150                                   | 84%                  |
| PTK10-Q24-D5                 | 10.0W                    | 10-36VDC         | ±5VDC             | 1.0A/1.0A                  | 100/100                               | 80%                  |
| PTK10-Q24-D5A                | 10.0W                    | 10-36VDC         | ±5VDC             | 1.5A/0.5A                  | 100/100                               | 78%                  |
| PTK10-Q24-D12                | 10.8W                    | 10-36VDC         | ±12VDC            | 0.45A                      | 120/120                               | 83%                  |
| PTK10-Q24-D15                | 10.5W                    | 10-36VDC         | ±15VDC            | 0.35A                      | 150/150                               | 83%                  |
| PTK10-Q48-S3                 | 7.92W                    | 20-72VDC         | 3.3VDC            | 2.4A                       | 75                                    | 78%                  |
| PTK10-Q48-S5                 | 10.0W                    | 20-72VDC         | 5VDC              | 2.0A                       | 75                                    | 81%                  |
| PTK10-Q48-S12                | 10.8W                    | 20-72VDC         | 12VDC             | 0.9A                       | 120                                   | 84%                  |
| PTK10-Q48-S15                | 10.5W                    | 20-72VDC         | 15VDC             | 0.7A                       | 150                                   | 85%                  |
| PTK10-Q48-D5                 | 10.0W                    | 20-72VDC         | ±5VDC             | 1.0A/1.0A                  | 100/100                               | 81%                  |
| PTK10-Q48-D5A                | 10.0W                    | 20-72VDC         | ±5VDC             | 1.5A/0.5A                  | 100/100                               | 81%                  |
| PTK10-Q48-D12                | 10.8W                    | 20-72VDC         | ±12VDC            | 0.45A                      | 120/120                               | 83%                  |
| PTK10-Q48-D15                | 10.5W                    | 20-72VDC         | ±15VDC            | 0.35A                      | 150/150                               | 83%                  |

**NOTE:** 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.

**DERATING CURVES**


**PART NUMBER:** PTK10 series

**DESCRIPTION:** DC/DC converter

## INPUT

| parameter           | conditions/description | min | nom | max | units |
|---------------------|------------------------|-----|-----|-----|-------|
| input voltage range |                        | 10  | 24  | 36  | VDC   |
|                     |                        | 20  | 48  | 72  | VDC   |
| switching frequency | constant               |     | 300 |     | KHz   |

## OUTPUT

| parameter                                  | conditions/description   | min   | nom | max   | units |
|--|--|-------|-----|-------|-------|
| set point accuracy                         | single output  | -2%   |     | +2%   |       |
|  | dual output  | -3%   |     | +3%   |       |
| line regulation<br>(low line to high line) | single output models   | -0.5% |     | +0.5% |       |
|  | dual output models   | -1.0% |     | +1.0% |       |
| load regulation                            | single output models - no load to full load  | -1.0% |     | +1.0% |       |
|  | dual output models - balanced loads (10% min. load)  | -2.5% |     | +2.5% |       |
| minimum load                               | converters will not be damaged if loading conditions are less than minimum specified loads, but regulation specs may not be met <sup>3</sup> |       |     |       |       |
| ripple and noise                           | see chart  |       |     |       |       |

**NOTE:** 3 single output: no min. load required, dual: 10%

## PROTECTION

| parameter    | conditions/description                | min  | nom | max  | units |
|--------------|---------------------------------------|------|-----|------|-------|
| over-current | continuous auto recovery <sup>4</sup> | 105% |     | 135% |       |
| over-voltage | internally zener clamped <sup>4</sup> | 110% |     | 140% |       |

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

## GENERAL

| parameter             | conditions/description   | min    | nom          | max  | units             |
|-----------------------|--|--------|--------------|------|-------------------|
| efficiency            | typical at full load   | 77%    |              | 83%  |                   |
| dielectric withstand  | input/case, input/output, output/case  | 500    |              |      | VAC               |
| insulation resistance | at 500 VDC   | 100M   |              |      | Ohms              |
| agency standards      | approved to UL60950(E222889), CSA C22.2 No. 60950, TUV EN60950; (single output only) |        |              |      |                   |
| case material         |  |        | Zn           |      |                   |
| material flammability |  | 94 V-0 |              |      |                   |
| weight                |  |        | 40<br>(1.41) |      | grams<br>(ounces) |
| MTBF                  | MIL-HDBK-217F  |        | 580k         |      | hours             |
| operating temperature | regular models - see derating curve.   | -20    |              | +71  | °C                |
|                       | extended temperature models  | -40    |              | +85  | °C                |
| storage temperature   |  | -40    |              | +105 | °C                |
| humidity              | operating (non-condensing)   | 5%     |              | 95%  | RH                |
| washability           | not intended for aqueous wash  |        |              |      |                   |

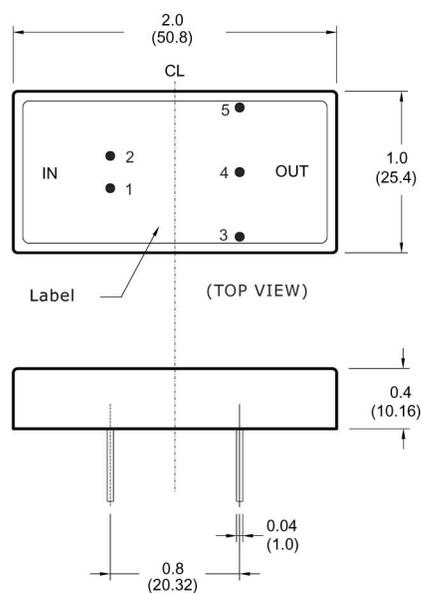
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## DIMENSIONS (mm)

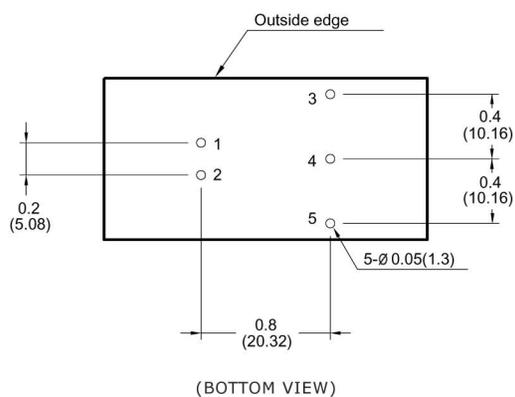
### Dimensions

All dimensions are in inches and (mm).



### Pin assignments

| 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 |