

10W DC-DC Converter P10F-Series

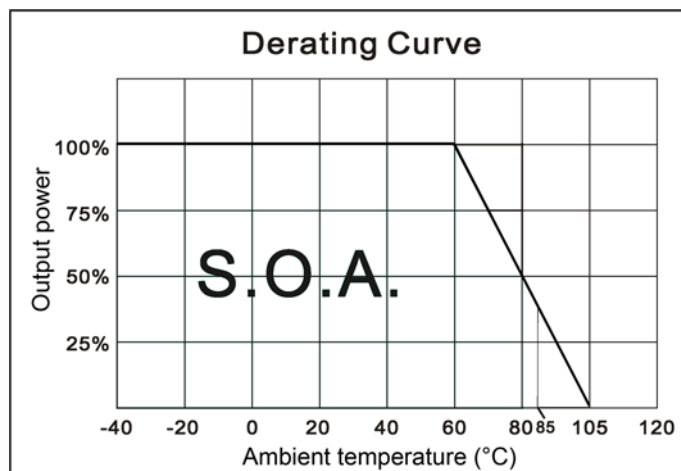


- Wide 4:1 Input Range
- 1600 V_{DC} Isolation
- MTBF >1 MHours
- Continuous Short Circuit Protection
- Over Load Protection
- Over Voltage Protection
- Efficiency up to 88%
- 15 mA no load Input Current
- Wide Operation Temperature Range -40...85°C
- On / Off Remote Control Input
- Soft Start



Model selection guide

| Typ | Input voltage range [V _{DC}] | Input current | | Output voltage [V _{DC}] | Output current [mA] | Efficiency typ. [%] | Capacitor load max. [μF] |
|----------------------|--|---------------|----------------|-----------------------------------|---------------------|---------------------|--------------------------|
| | | no load [mA] | full load [mA] | | | | |
| Single output | | | | | | | |
| P10F243R3S | 9...36 | 15 | 440 | 3.3 | 2700 | 85 | 1200 |
| P10F2405S | 9...36 | 15 | 480 | 5.0 | 2000 | 87 | 1200 |
| P10F2412S | 9...36 | 15 | 475 | 12.0 | 833 | 88 | 270 |
| P10F2415S | 9...36 | 15 | 475 | 15.0 | 667 | 88 | 180 |
| P10F483R3S | 18...75 | 15 | 225 | 3.3 | 2700 | 84 | 1200 |
| P10F4805S | 18...75 | 15 | 240 | 5.0 | 2000 | 87 | 1200 |
| P10F4812S | 18...75 | 15 | 240 | 12.0 | 833 | 87 | 270 |
| P10F4815S | 18...75 | 15 | 240 | 15.0 | 667 | 87 | 180 |
| Dual output | | | | | | | |
| P10F2405D | 9...36 | 15 | 495 | ±5.0 | ±1000 | 85 | 2 x 820 |
| P10F2412D | 9...36 | 15 | 480 | ±12.0 | ±420 | 87 | 2 x 120 |
| P10F2415D | 9...36 | 15 | 480 | ±15.0 | ±330 | 87 | 2 x 100 |
| P10F4805D | 18...75 | 15 | 250 | ±5.0 | ±1000 | 85 | 2 x 820 |
| P10F4812D | 18...75 | 15 | 240 | ±12.0 | ±420 | 88 | 2 x 120 |
| P10F4815D | 18...75 | 15 | 240 | ±15.0 | ±330 | 88 | 2 x 100 |

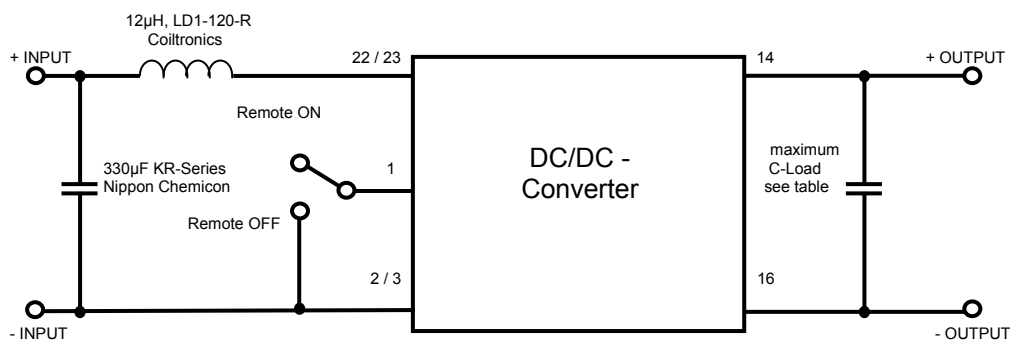


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Specifications

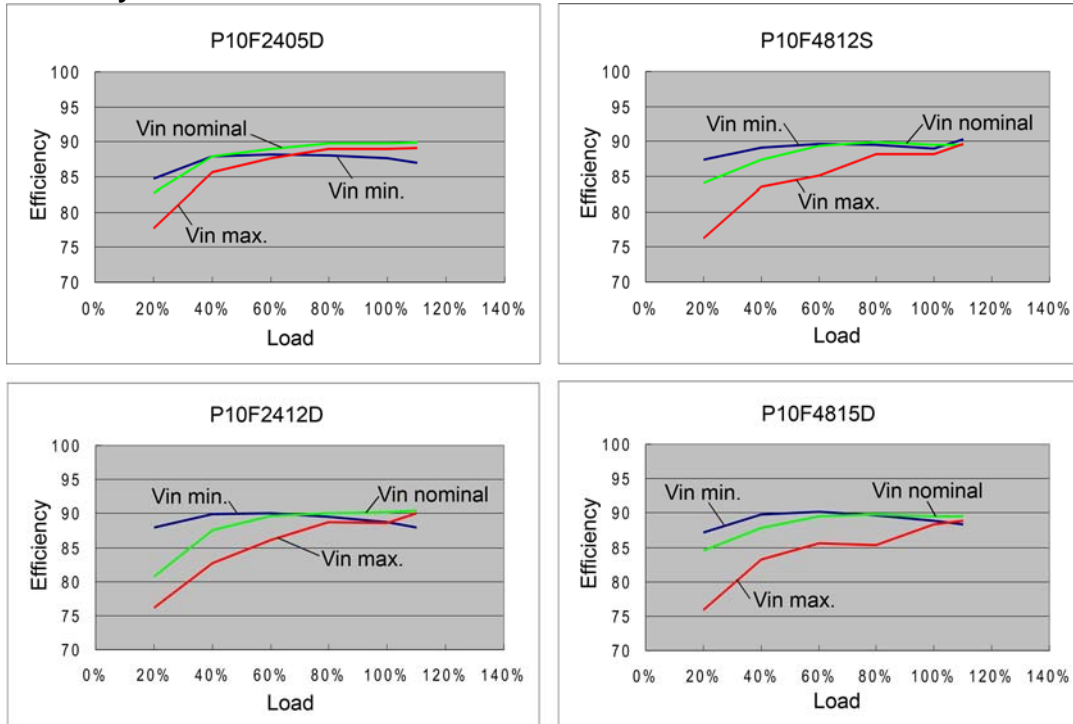
| Input | |
|---|---|
| Filter | Pi Network |
| Start up time with R-load | 20 ms typ. |
| Remote CTRL on/off, Pin1 | On: 3...12 V or open input Off: 0...1.2 V Standby current 5mA typ |
| Isolation: | |
| Rated voltage (for 60 s) | 1600 V _{DC} (flash tested 3s) |
| Resistance | 10 ⁹ Ω |
| Capacitance | 1500 pF, typ. |
| Output | |
| Voltage accuracy | ± 1.2%, max. |
| Voltage balance (dual outputs) | ± 1% |
| Temperature coefficient | ± 0.02% / °C |
| Ripple and noise (at 20 MHz BW) | 85 mVp-p, max. |
| Short circuit protection | Indefinite (hiccup), Automatic restart |
| Over load protection | 170 % of I _{OUT} max. |
| Over voltage protection | |
| 2.5 V, 3.3 V out type | 3.9 V Z-diode clamping |
| (±) 5.0 V out type | 6.2 V Z-diode clamping |
| (±) 12 V out type | (±)15 V Z-diode clamping |
| (±) 15 V out type | (±)18 V Z-diode clamping |
| Line voltage regulation | ± 0.2 %, max. |
| Load regulation 0...100% load | single ± 0.5%, max. dual ± 1%, max. |
| Cross regulation @ dual output | ± 5 % |
| Transient recovery time | 250 μs typ. |
| Transient response drift @ 75%...50%...25% load | 3 % |

| General | |
|--|---|
| Switching frequency | 270 kHz |
| Safety Standard | IEC 60950-1:2001 |
| Reliability calculated MTBF (MIL-HDBK-217F) | >1 Mhours @ 25°C |
| EMC Characteristics | |
| Radiated Emissions | EN55022 class A |
| Conducted Emissions | EN55022 class A |
| ESD | EN61000-4-2 Crit. B |
| RS | EN61000-4-3 Crit. A |
| EFT | EN61000-4-4 Crit. B |
| Surge | EN61000-4-5 Crit. B |
| CS | EN61000-4-6 Crit. A |
| PFMF | EN61000-4-8 Crit. A |
| Environmental | |
| Operating temperatur (ambient) | -40 °C to +85 °C See derating curve |
| Case temperature | 105 °C max. |
| Storage temperature | -40 °C to +125 °C |
| Humidity | Up to 95 %, non-condensing |
| Cooling | Free-air convection |
| Physical | |
| Dimensions | 31.75 x 20.32 x 10.16 mm |
| Weight | 18 g |
| Case material | Nickel-coated copper metal |
| Potting material | Epoxy (UL94V-0 rated) |
| Absolute maximum ratings | |
| Pin soldering temperature 1.5mm distance from body | 260°C for 10sec |
| Input peak voltage for 0.1s | -0.7 V _{DC} ...50 V _{DC} @ 24 V type -0.7 V _{DC} ...100 V _{DC} @ 48 V type |

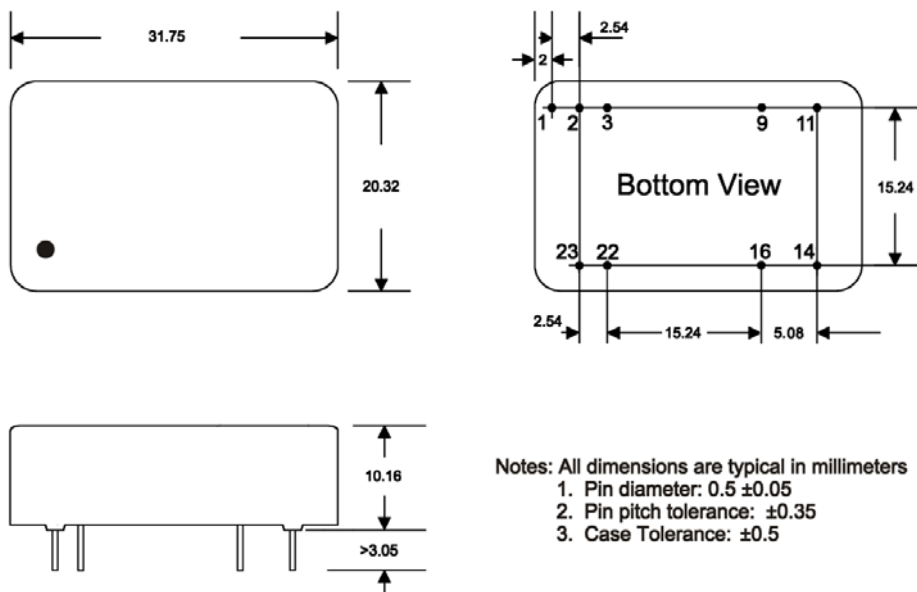


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Efficiency vs load



Dimensions



Pin connections

| Pin | Single | Dual |
|-----|---------------|---------------|
| 1 | Remote contr. | Remote contr. |
| 2 | -V Input | -V Input |
| 3 | -V Input | -V Input |
| 9 | Omitted | Common |
| 11 | N.C. | -V Output |
| 14 | +V Output | +V Output |
| 16 | -V Output | Common |
| 22 | +V Input | +V Input |
| 23 | +V Input | +V Input |

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