

Features

- ◆ Compact SIP package
- ◆ Very high efficiency up to 97%
- ◆ Excellent line / load regulation
- ◆ Low standby current
- ◆ Operating temperature range -40 to 90°C
- ◆ Over-temperature protection
- ◆ Short circuit protection
- ◆ 3-year product warranty



TSR-0.5 is a series of step-down non-isolated switching regulators in compact SIP package. These converters are an ideal drop-in replacement to LM78 linear regulators when energy efficiency is a parameter of the design. The high efficiency up to 97 % allows full load operation up to +80°C (+90°C with 50% load) ambient temperature without the need of forced aircooling.

Excellent output voltage accuracy and low standby current are other features that distinguish switching regulators from linear regulators.

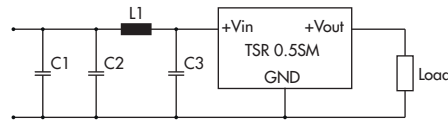
Models

| Order code | Input voltage range ¹⁾ | Output voltage | Output current max. | Efficiency typ. | |
|---------------|-----------------------------------|----------------|------------------------|-----------------|-------------|
| | | | | @ Vin min. | @ Vin 32VDC |
| TSR 0.5-2415 | 4.75 – 32 VDC | 1.5 VDC | 0.5 A | 73 % | 63 % |
| TSR 0.5-2418 | | 1.8 VDC | | 82 % | 71 % |
| TSR 0.5-2425 | | 2.5 VDC | | 87 % | 77 % |
| TSR 0.5-2433 | | 3.3 VDC | | 91 % | 81 % |
| TSR 0.5-2450 | 6.5 – 32 VDC | 5.0 VDC | | 94 % | 86 % |
| TSR 0.5-2465 | 8 – 32 VDC | 6.5 VDC | | 95 % | 88 % |
| TSR 0.5-2490 | 11 – 32 VDC | 9.0 VDC | | 96 % | 92 % |
| TSR 0.5-24120 | 15 – 32 VDC | 12 VDC | | 97 % | 94 % |
| TSR 0.5-24150 | 18 – 32 VDC | 15 VDC | | 97 % | 95 % |

1) For input voltage higher 24 VDC an input capacitor 22 µF/ 50 V is required

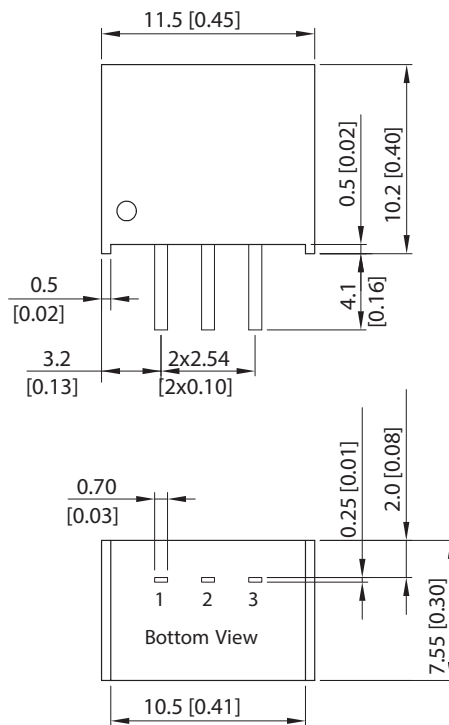
Applications notes

EMI filter for EN 55022 class A & B



| Class | C1 | C2 & C3 | L1 value | order code (SMD type) | datasheet: |
|-------|------------------------------|------------------------------|-------------|--------------------------|--|
| A | - | 4.7 μ F / 50 V 1206 MLCC | 3.3 μ H | TCK-044 | www.tracopower.com/products/tck044.pdf |
| B | 4.7 μ F / 50 V 1206 MLCC | | 10 μ H | TCK-047 | www.tracopower.com/products/tck047.pdf |

Outline Dimensions



| Pinout | |
|----------|-------|
| 1 | +Vin |
| 2 | GND |
| 3 | +Vout |

Dimensions in [mm], () = Inch
Tolerances: ± 0.5 (± 0.02)
Pin pitch tolerances: ± 0.25 (± 0.01)

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at www.tracopower.com

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