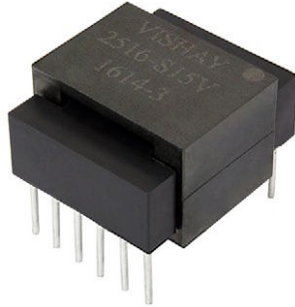


## Space Grade Planar Transformers



### FEATURES

- MIL-STD-981 class S compliant
- Higher power density levels versus traditional planar designs
- Easily customized to meet design-specific requirements
  - Operating voltage
  - Inductance
  - Power
  - Package size - customized height
  - Custom screening options available
- Operating frequencies from 80 kHz to 300 kHz
- Over molded windings for ruggedized applications
- Operating temperature range -55 °C to +130 °C
- MIL-PRF-27 grade 5, temperature class S
- MIL-STD-981 family 03 power transformer
- MTPL design; PATENT(S): [www.vishay.com/patents](http://www.vishay.com/patents)

| ABSOLUTE MAXIMUM RATINGS             |                |             |                 |
|--------------------------------------|----------------|-------------|-----------------|
| PARAMETER                            | CONDITIONS     | LIMITS      | UNITS           |
| Dielectric withstand voltage         | Pri - sec, 5 s | 1500        | V <sub>AC</sub> |
|                                      | Sec - sec; 5 s | 500         | V <sub>AC</sub> |
| Power <sup>(1)(2)</sup>              |                | 150         | W               |
| Operating temperature <sup>(3)</sup> | Continuous     | -55 to +130 | °C              |
| Storage temperature                  | Continuous     | -65 to +155 | °C              |
| Frequency                            |                | 80 to 300   | kHz             |
| Mass                                 |                | 37          | g               |

### Notes

- (1) Secondary current rated for 20 °C temperature rise
- (2) Derating dependent
- (3) Derated per total output power vs. temperature graph

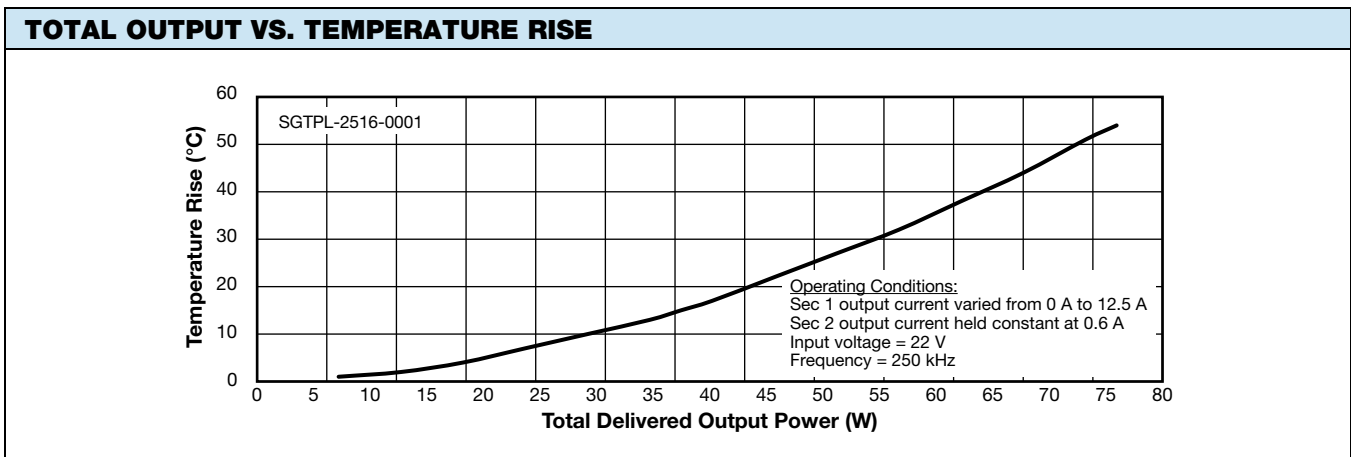
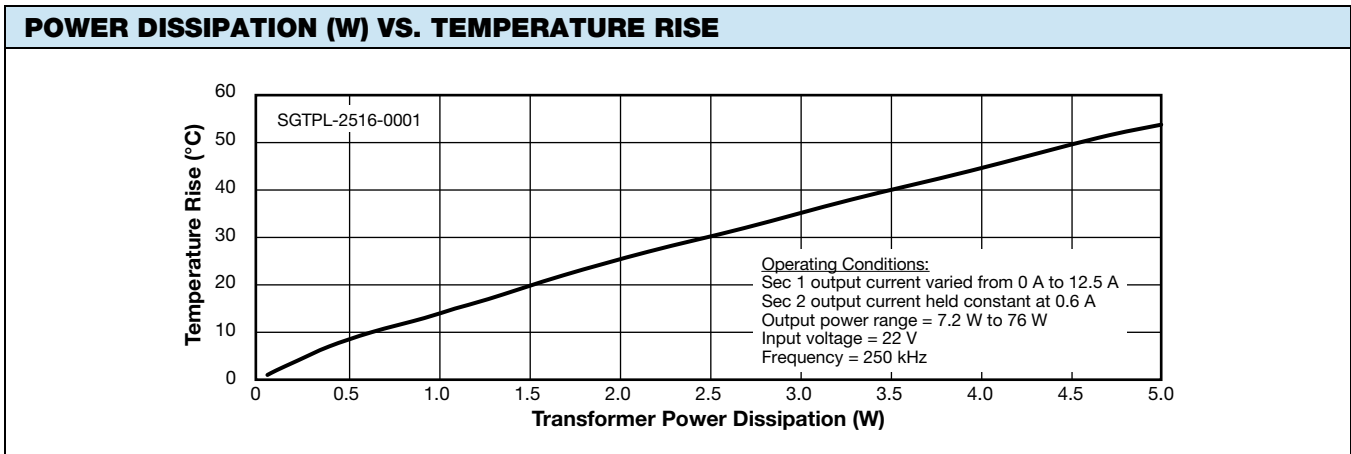
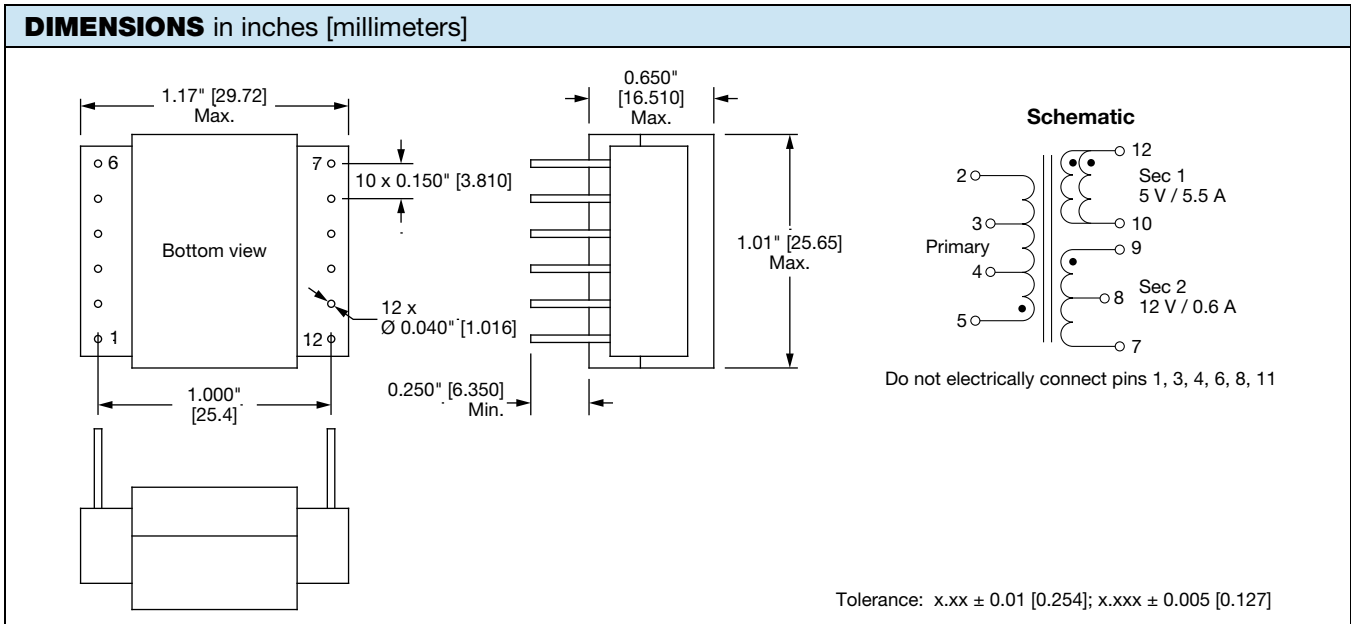
### APPLICATIONS

- High reliability Space Grade switch mode power supplies
- Flyback converters, forward converters

| STANDARD ELECTRICAL SPECIFICATIONS (part number specific) |                           |                         |                         |                           |  |   |                         |        |        |                       |                                 |                       |
|---|---------------------------|-------------------------|-------------------------|---------------------------|--|---|-------------------------|--------|--------|-----------------------|---------------------------------|-----------------------|
| PART NUMBER <sup>(1)</sup>                                | PRIMARY INPUT VOLTAGE (V) | OUTPUT SEC. 1 (V) / (A) | OUTPUT SEC. 2 (V) / (A) | OPERATING FREQUENCY (kHz) | MAGNETIZING INDUCTANCE MIN. ± 10 % (μH) <sup>(2)</sup> | LEAKAGE INDUCTANCE MAX. (μH) <sup>(2)</sup> | DCR (mΩ) <sup>(2)</sup> |        |        | TURNS RATIO           | OUTPUT POWER (W) <sup>(3)</sup> | POWER DISSIPATION (W) |
|   |                           |                         |                         |                           |  |   | PRI.                    | SEC. 1 | SEC. 2 |                       |                                 |                       |
| SGTPL-2516-0001(P/S)                                      | 22 to 36                  | 5 / 5.5                 | 12 / 0.6                | 250                       | 30   | 0.5   | 41                      | 4.3    | 27     | 7.0 :<br>2.0 :<br>4.5 | 35                              | 1.0                   |

### Notes

- (1) (P/S) = screening code; P = production level (EDU), S = MIL-STD-981, flight with full group A & B screening
- (2) Ratings at 25 °C ambient
- (3) Secondary current rated for 20 °C temperature rise
- (4) All parts screened to P level are intended for design validation testing only





| <b>MIL-STD-981 COMPLIANCE: S VERSION PARTS ONLY</b> |  |
|---|--|
| Vibration   | MIL-STD-202, test method 201   |
| Shock   | Shock testing per MIL-STD-202, test method 213, test condition I   |
| Dielectric withstand voltage                        | MIL-STD-981 table VI, MIL-PRF-27 4.7.9.1, and MIL-STD-202, test method 301   |
| Insulation resistance                               | MIL-STD-981 table VI, MIL-PRF-27 4.7.11, and MIL-STD-202, test method 302 test condition B - 500 V <sub>DC</sub> , minimum resistance: 10 GΩ |
| Burn in   | Per Mil-STD-981, 96 h at rated load and max. temperature   |
| Life test   | Per MIL-STD 981  |
| Radiographic inspection                             | 100 % of delivered lot   |



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