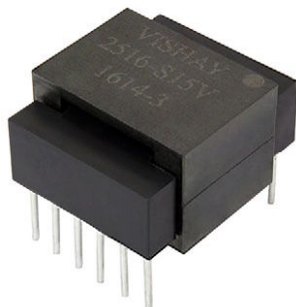


## Space Grade Planar Transformers



### 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)

### APPLICATIONS

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

### 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

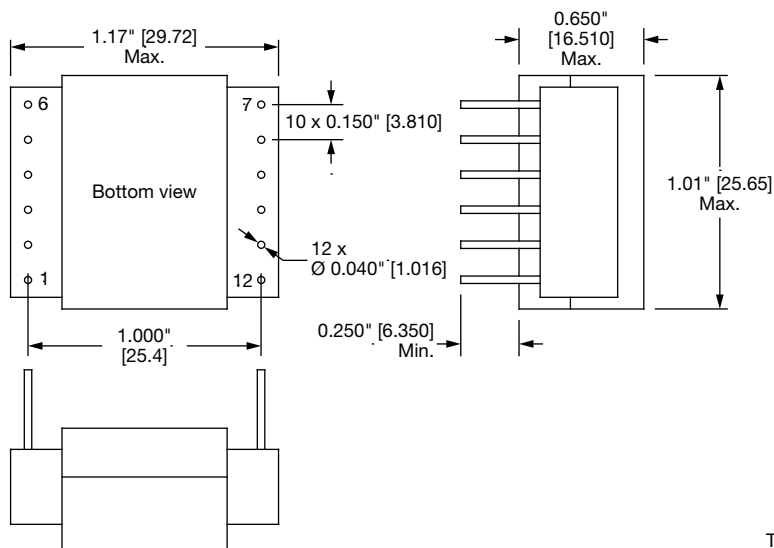
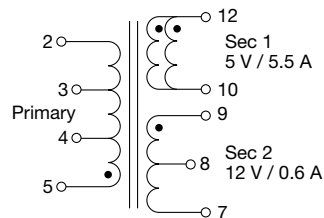
- (1) Secondary current rated for 20 °C temperature rise  
 (2) Derating dependent  
 (3) Derated per total output power vs. temperature graph

### 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 : 2.0 : 4.5	35	1.0

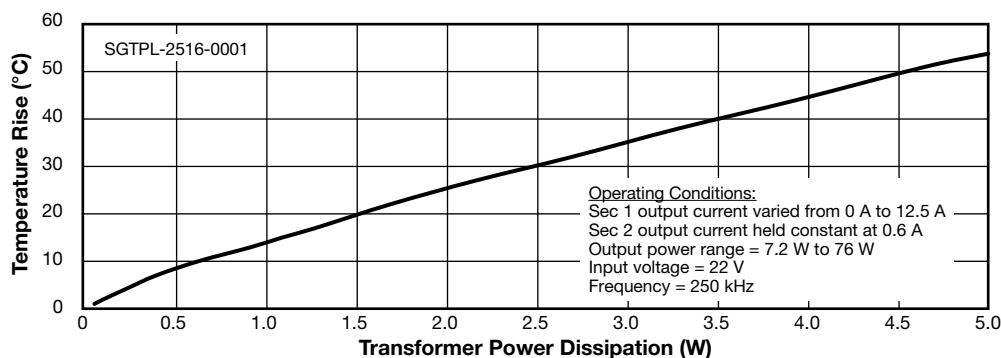
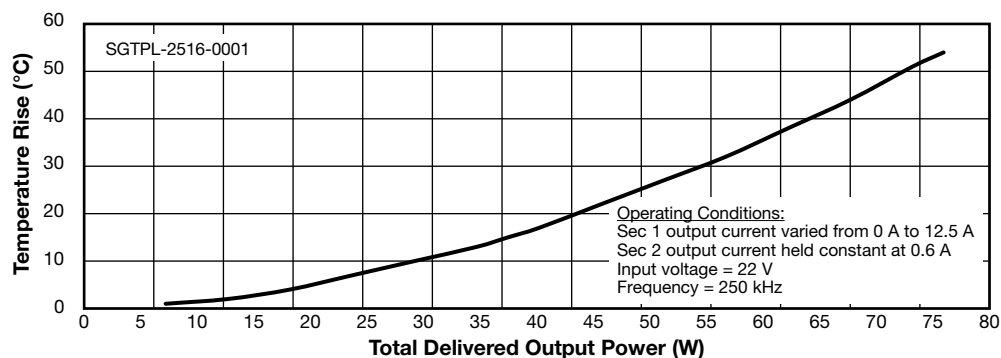
#### Notes

- (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

**DIMENSIONS** in inches [millimeters]

**Schematic**


Do not electrically connect pins 1, 3, 4, 6, 8, 11

Tolerance: x.xx  $\pm$  0.01 [0.254]; x.xxx  $\pm$  0.005 [0.127]

**POWER DISSIPATION (W) VS. TEMPERATURE RISE**

**TOTAL OUTPUT VS. TEMPERATURE RISE**




<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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