Medium Power Planar Transformer 1 kW to 3 kW



RoHS COMPLIANT

FEATURES

- For high power density DC/DC converter application
- Very low profile and weight
- High efficiency: > 99 %
- Recommended frequency range (50 kHz; 400 kHz)
- Operating temperature range: -55 °C; 125 °C with heat sink dissipation
- Easy-assembly system for cold plates
- Tapped output terminals
- Material temperature grade: 180 °C
- Excellent repeatability
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

LINKS TO ADDITIONAL RESOURCES

3D Models

QUICK REFERENCE DATA	
Type	Transformer
Size (L x W x H)	70 mm x 53 mm x 22 mm
Terminals	Tapped outputs
Power	1000 W to 3000 W
Frequency range	50 kHz to 400 kHz
Inductance range	96 µH to 160 µH

EXAMPLE OF TRANSFORMER APPLICATION: 2 kW DC/DC CONVERTER, PLA51LA32

POWER SUPPLY						
TOPOLOGY	FREQUENCY	POWER	INPUT VOLTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	DUTY CYCLE MAX.
Full bridge with current doubler	100 kHz	2 kW	50 V_{DC} to 110 V_{DC}	30 V	67 A	0.98

STANDARD ELECTRICAL CHARACTERISTICS						
INDUCTANCE (10 kHz; 0.1 V)	LEAKAGE INDUCTANCE (10 kHz; 0.1 V)	TURN RATIO	POWER LOSSES	EFFICIENCY	HIPOT: PRIMARY / SECONDARY + CORE 1500 V_{AC}	HIPOT: SECONDARY / CORE
128 µH ± 25 %	< 150 nH (typical)	3:2	< 17 W	> 99 %	< 150 µA	< 150 µA

For technical questions, contact: sferaztronics@vishay.com

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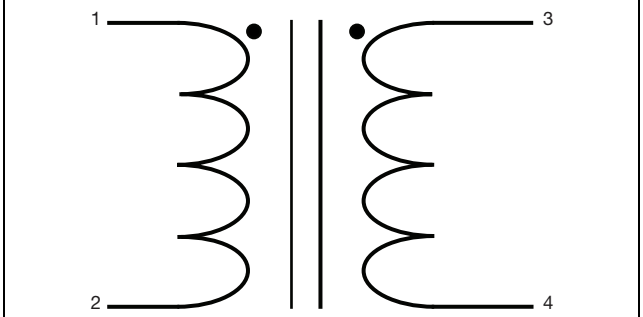
RECOMMENDATIONS FOR MOUNTING

Announced performances are achieved using a liquid cooling system. The internal temperature must be maintained below 160 °C. The user shall correctly size its own heatsink according to real working conditions of his device.

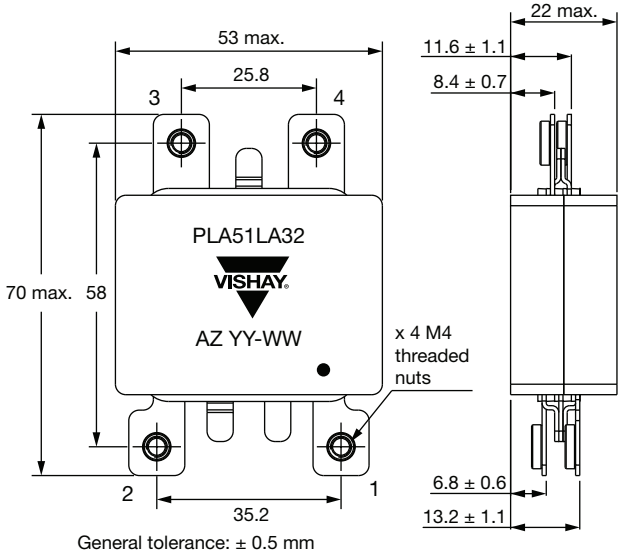
PACKAGING

Individual box.

ELECTRICAL SCHEMES



DIMENSIONS in millimeters (± 0.5)



Notes

- Weight ≈ 170 g
- Take care of ferrite core while handling (no shock admitted)
- Terminal fixing: with M4 screw, max. tightening: 1.2 Nm

SAP PART NUMBERING

MODEL	SIZE	STYLE	FOOTPRINT	RATIO
PLA	**51**	**L** = leadframe with nuts	**A** = as shown in above drawing (other upon request)	**32** = 3 : 2

RELATED DOCUMENTS

APPLICATION NOTES	
Designing With the PLA51 Planar Transformer for Enhanced Power Density and Efficiency	www.vishay.com/doc?59063

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