Integrated LLC Transformer / Inductor



FEATURES

- 5.5 kW transformer / inductor design for unidirectional LLC applications
- Magnetizing and leakage inductance fully tunable
- Turns ratio can be customized per application
- No interconnects or jumpers needed from resonant inductor to the transformer winding
- Operating frequencies from 100 kHz to 350 kHz
- Designs for 400 V to 800 V inputs
- Bracket included for cold plate mounting with raised bosses (flush mount options available)
- Minimal parasitic variation optimizes capacitor selection
- Built in voltage isolation elevates corona inception
- Designed for cold plate cooling at 65 °C to 75 °C
- Lead lengths and terminal types can be easily customized
- Can be provided with thermal gap pad on mounting surface
- MRTI design; PATENT(S): www.vishay.com/patents

APPLICATIONS

- Charging power supplies for 400 V / 600 V batteries
- Unidirectional LLC converters from 4 kW to 6 kW
- Industrial control, alternative energy, military, avionic, and construction equipment

ABSOLUTE MAXIMUM RATINGS

PARAMETER	CONDITIONS	LIMITS	UNITS
Dielectric withstand voltage	Pri - sec, 5 s	3500	V_{AC}
	All - core; 5 s	2500	V_{AC}
Rated power		4000 to 6000	W
Rated hot spot temperature		+155	°C
Storage temperature	Continuous	-55 to +155	°C
Frequency		100 to 350	kHz
Size (L x W x H) (1)		88 x 102 x 56	mm
Terminals	M4 ring		

Note

(1) Size includes the mounting bracket

STANDARD ELECTRICAL SPECIFICATIONS

PART NUMBER	MAGNETIZING INDUCTANCE (µH) (1)	LEAKAGE INDUCTANCE (µH) (2)	TOTAL PRIMARY INDUCTANCE (µH)	SECONDARY INDUCTANCE (µH)	TRANSFER RATIO PRI : SEC	NOMINAL DCR (mΩ) (3)		RATED PRIMARY CURRENT (A_{RMS})
						PRI	SEC	
MRTI5R5EZ1513K10	50	10	60	68	1.3 : 1.5	38	13	28
MRTI5R5EZ1010K10	60	6.2	66	60	1.0 : 1.0	38	10	17
MRTI5R5EZ1015K10	74	12	86	32	1.5 : 1.0	12	18	17

Notes

- Alternative configurations available upon request

(1) 1.0 V and 100 kHz

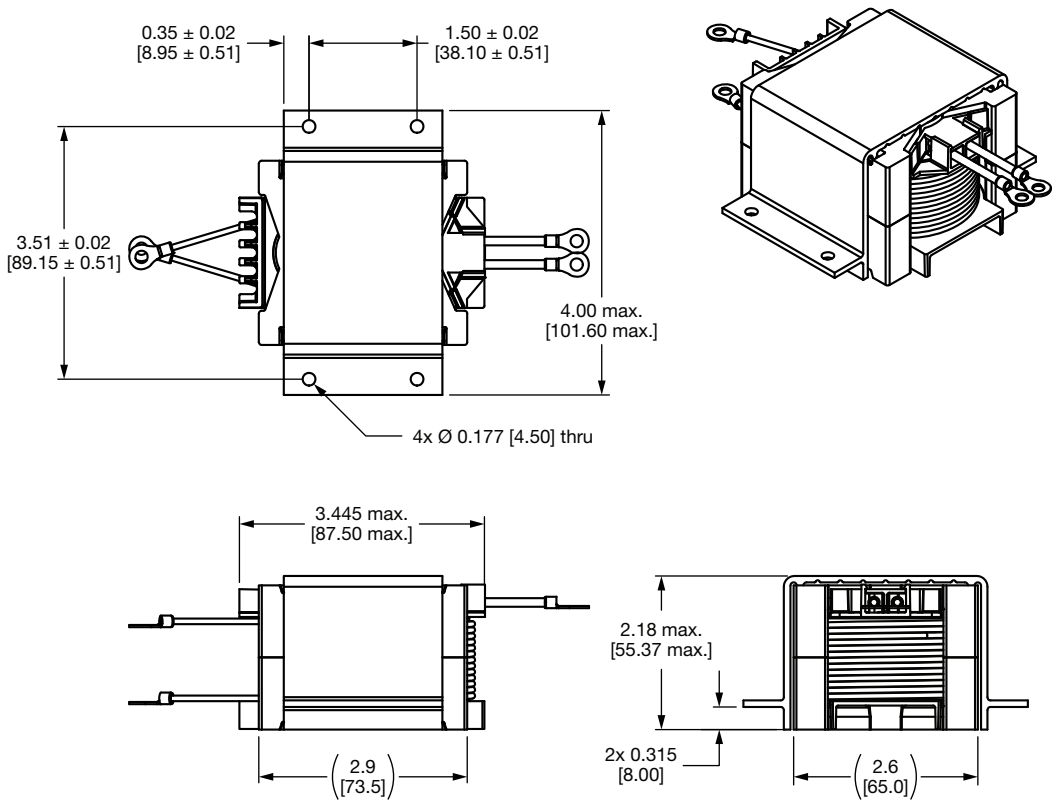
(2) 1.0 V and 100 kHz with secondary shorted

(3) At 25 °C

For technical questions, contact: magnetics@vishay.com

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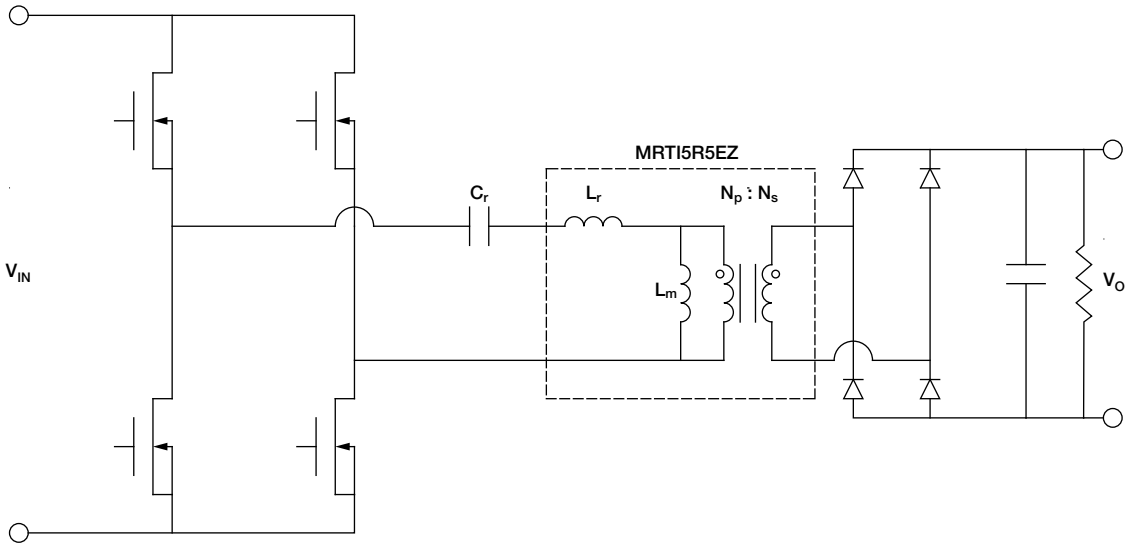
DIMENSIONS in inches



Note

- Lead lengths 8" to 8.5" (203 mm to 216 mm)

SIMPLIFIED FULL BRIDGE LLC CIRCUIT



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