

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

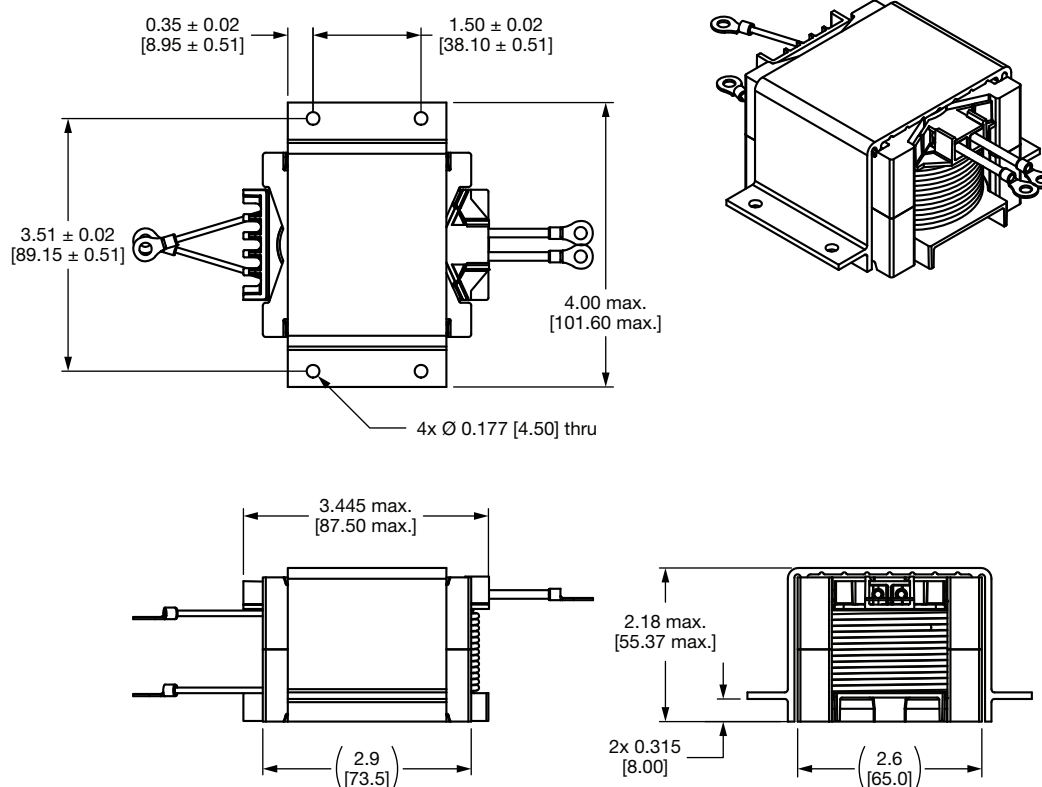
⁽¹⁾ Size includes the mounting bracket

STANDARD ELECTRICAL SPECIFICATIONS

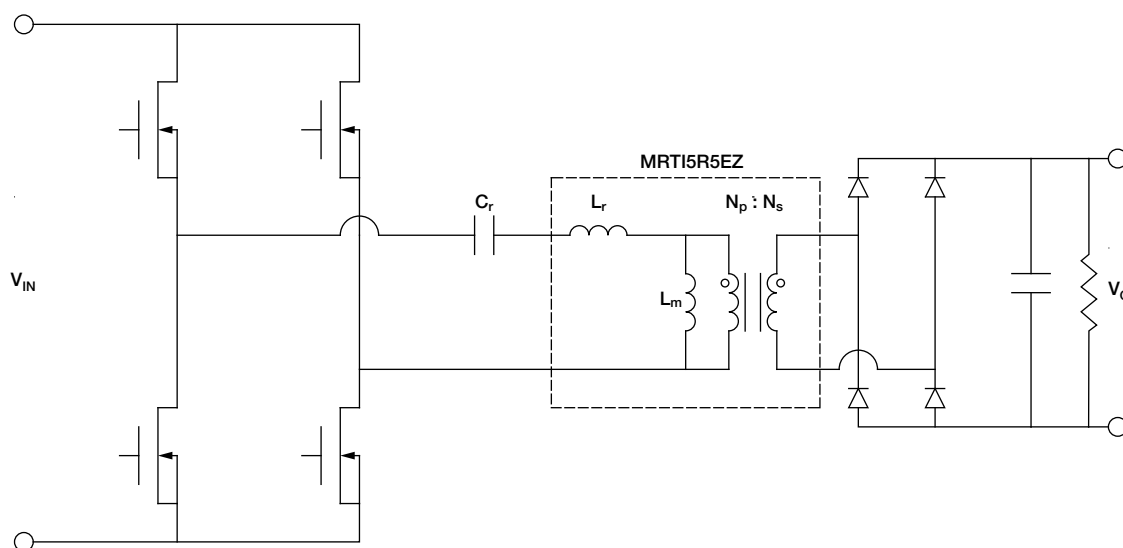
PART NUMBER	MAGNETIZING INDUCTANCE (μH) ⁽¹⁾	LEAKAGE INDUCTANCE (μH) ⁽²⁾	TOTAL PRIMARY INDUCTANCE (μH)	SECONDARY INDUCTANCE (μH)	TRANSFER RATIO PRI : SEC	NOMINAL DCR (mΩ) ⁽³⁾		RATED PRIMARY CURRENT (A _{RMS})
						PRI	SEC	
MRTI5R5EZ1513K10	50	10	60	68	1.3 : 1.5	38	13	28
MRTI5R5EZ1010K10	60	6.2	66	60	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

DIMENSIONS in inches

Note

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

SIMPLIFIED FULL BRIDGE LLC CIRCUIT




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