

### Vishay Custom Magnetics

# **Integrated LLC Transformer / Inductor**



ABSOLUTE MAXIMUM RATINGS								
PARAMETER	CONDITIONS	LIMITS	UNITS					
Dielectric withstand voltage	Pri - sec, 5 s	3500	V <sub>AC</sub>					
	All - core; 5 s 2500		V <sub>AC</sub>					
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

#### **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

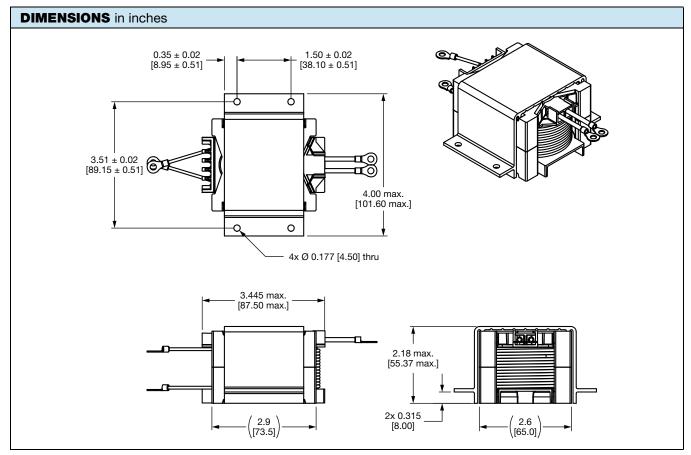
STANDARD ELECTRICAL SPECIFICATIONS										
	MAGNETIZING	LEAKAGE INDUCTANCE	TOTAL PRIMARY INDUCTANCE	SECONDARY INDUCTANCE	TRANSFER RATIO	NOMINAL DCR $(m\Omega)^{(3)}$		RATED PRIMARY		
PART NUMBER	INDUCTANCE (µH) <sup>(1)</sup>	(μH) <sup>(2)</sup>	(μH)	(μH)	PRI : SEC	PRI	SEC	CURRENT (A <sub>RMS</sub> )		
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

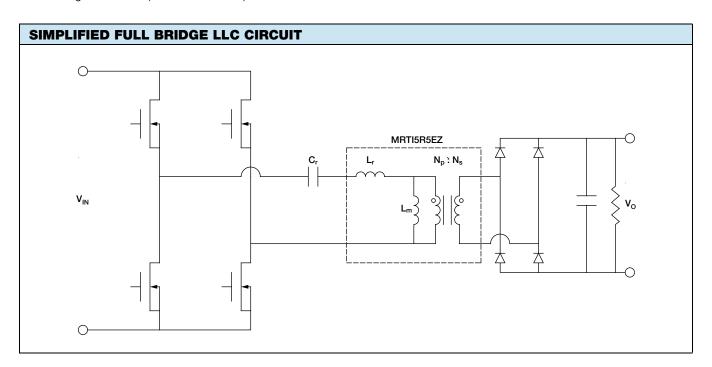


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#### Note

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





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