



VRD/POL Inductor

ICL501-1



Features

- Designed for use with IKOR's proprietary coupled inductor multi-phase DC-DC converter topology
- Low height and small size allows use in both imbedded (VRD) and module (VRM) applications
- Robust SMD package is compatible with SMT assembly process handling

Applications

- VRDs (Imbedded)
- VRMs (Module)
- POLs
- VRM 10.x / VRM11 based designs.
- DDR2/3 memory

The ICL 501-1 using IKOR's coupled inductor technology solves the most pressing problem facing IA-32 VRDs and VRMs. This patented technology solves the trade-off between efficiency and elimination of bulk capacitors by dramatically lowering the VRM output inductance while using industry-standard components and relatively low switching frequencies. This technology provides superior transient response performance to higher frequency solutions due to the unique method of coupling between phases, and enables high-current designs with little or no electrolytic output bypass capacitance. The ICL501-1 coupled inductor can be used in both VRD and module VRM applications. Its small size and low height make it possible to design high-density VRMs and to fit the inductors very close to the CPU socket in VRD applications. This device can also be used in high-current System VRM (SVRM) applications where small size, high efficiency, and low total BOM cost is critical.

Electrical Specifications

Parameter	Test Conditions	Min	Typ	Max	Unit
Turns Ratio (1 - 2) : (4 - 3)				1:1	-
L_s (1-2)	100mV @ 500 kHz rms	350	500	650	nH
L_s (4-3)	100mV @ 500 kHz rms	350	500	650	nH
LL (1-2)	short 4+3, 1.0 Vrms @ 1 MHz	45		60	nH
DCR (each winding)				0.3	mΩ

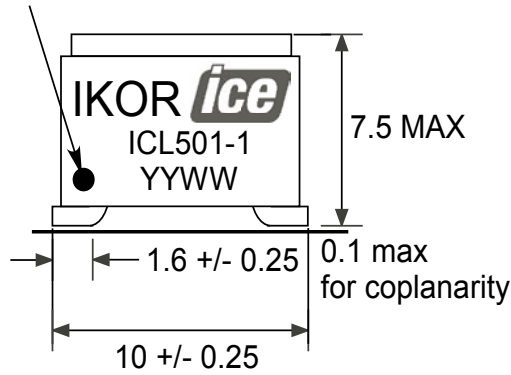
Electrical specifications at 25°C unless noted otherwise.



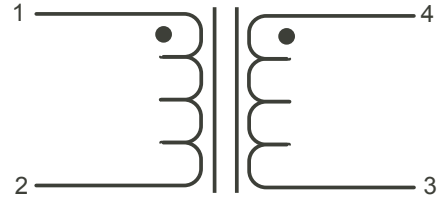
VRD/POL Inductor ICL501-1

Front View

Dot for pin 1

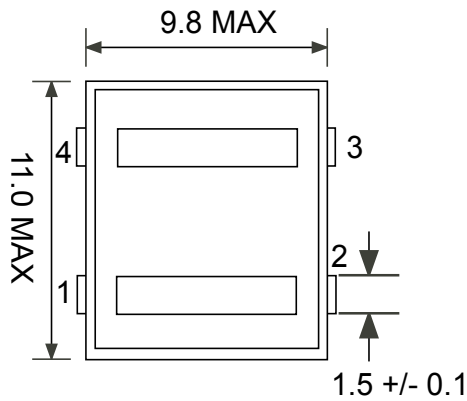


Schematic

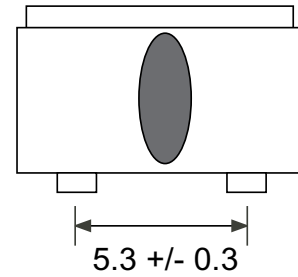


units: mm

Top View

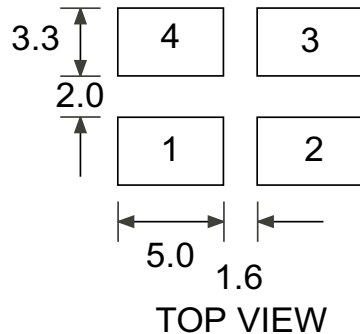


Side View



units: mm

Layout



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