



## VRD/POL Inductor

## ICL701-1



### 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 701-1 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 ICL701-1 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         | 525 | 700 | 825  | nH   |
| $L_S$ (4-3)                   | 100mV @ 500 kHz rms         | 525 | 700 | 825  | nH   |
| LL (1-2)                      | short 4+3, 1.0 Vrms @ 1 MHz |     | 70  |      | nH   |
| DCR (each winding)            |                             |     |     | 0.11 | mΩ   |

Electrical specifications at 25°C unless noted otherwise.



ICE Components, Inc.

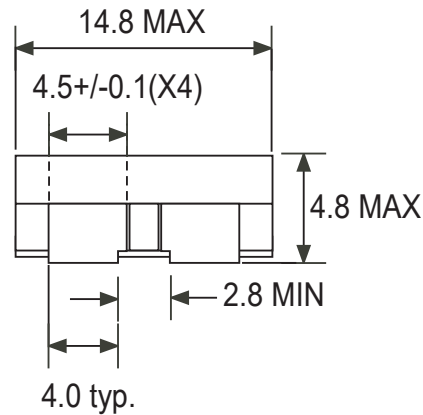
Voice: 800.729.2099  
Fax: 678.560.9304

cust.serv@icecomp.com  
www.icecomponents.com

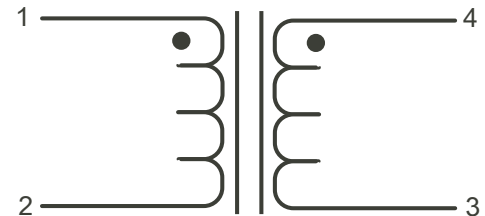
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Front View

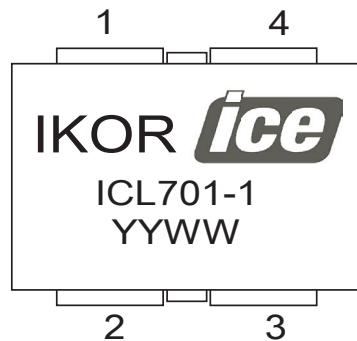


Schematic

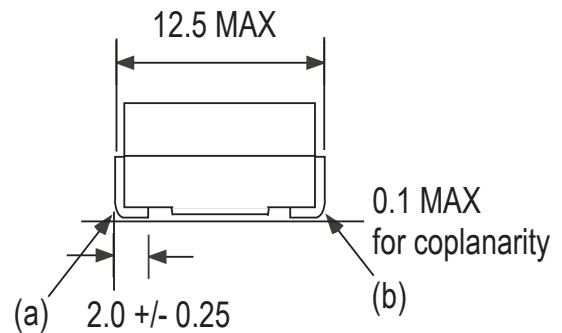


units: mm

Top View

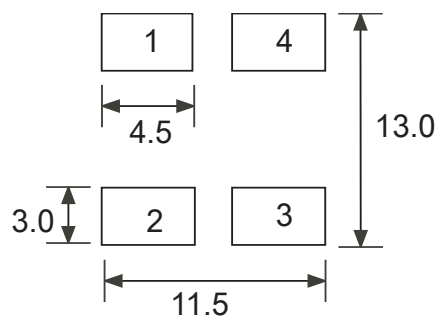


Side View



units: mm

Layout



TOP VIEW

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