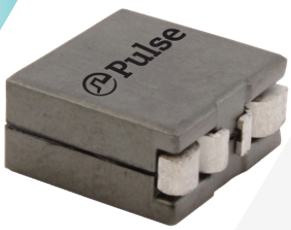


POWER INDUCTORS

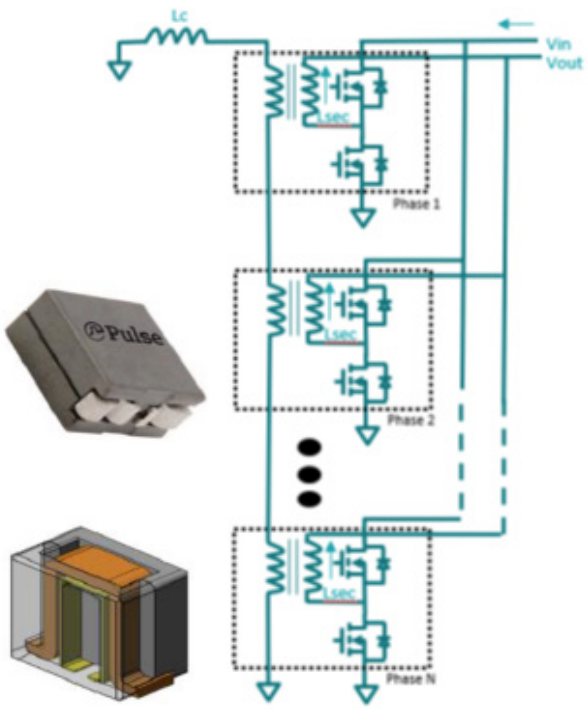
TRANS-INDUCTANCE VOLTAGE REGULATOR (TLVR) INDUCTORS

The TLVR has emerged as a promising topology for powering low-voltage, high-current, multi-phase applications such as data centres, storage systems, graphics cards, and personal computing. These systems require a reliable and efficient power delivery solution that can support processors, memory, and high-current ASICs and FPGAs.

Traditionally, non-TLVR multi-phase circuits have been used to meet these requirements. However, the increasing demands of these applications have led to the limitations of the traditional approach. When there is a sudden change is load current, each of the individual phases of the muti-phase buck regulator needs to adjust its duty cycle sequentially in order for the output current to react to the new requirement. This can result in a temporary but unacceptable droop of output voltage during this transition.

In May 2019, the TLVR circuit was introduced in the TD Commons, proposing a novel approach that replaces the traditional bead inductors with trans-inductors (1:1 ratio transformers). This change dramatically improves the transient response as the duty cycle of each phase can now be adjusted simultaneously via a sense winding that is coupled with the main winding in each TLVR inductor.

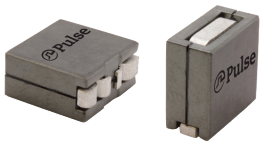
Building on our existing Power Bead manufacturing expertise and our 3rd party relationships with the Power IC suppliers that are driving these innovations, Pulse has developed dual winding TLVR inductors and is expanding its range of TLVR solutions for both the main and compensation inductors.



POWER INDUCTORS

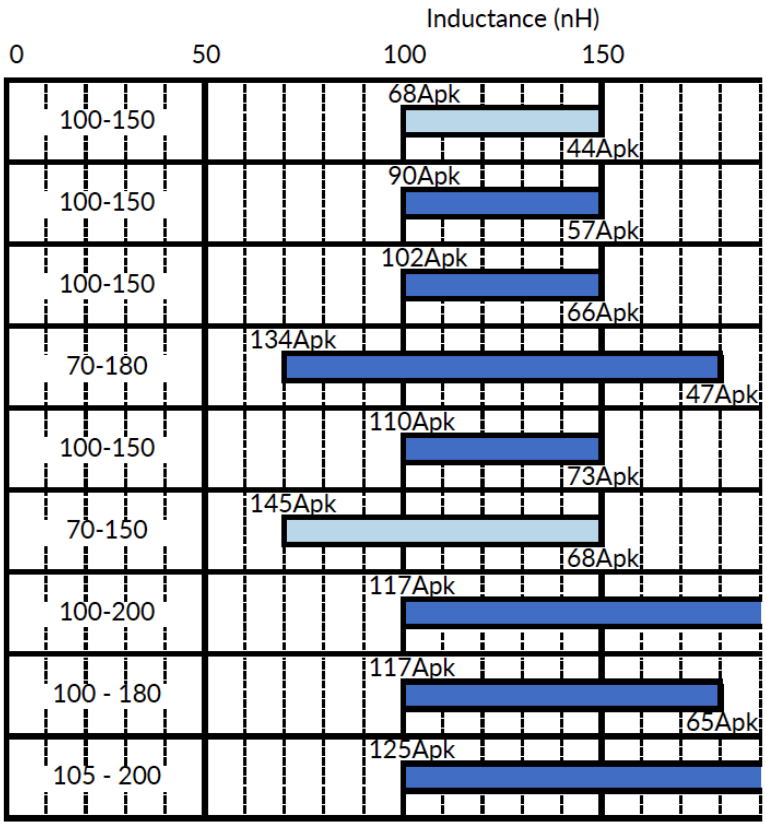
HIGH CURRENT ROUND WIRE COIL INDUCTORS

Pulse
a YAGEO company



FEATURES & BENEFITS

Part Number	Dimensions (mm Max)		
	L	W	H
PGL7195 (0.50mΩ)	10.2	5.0	6.0
PGL7250 (0.55mΩ)	13.0	8.0	5.0
PGL6520 (0.125mΩ)	9.6	6.4	12.0
PAL6374 (0.135mΩ)	10.0	5.0	12.0
PGL7005 (0.125mΩ)	10.0	6.0	12.0
PGL7093 (0.125mΩ)	12.0	5.0	12.0
PGL6380 (0.125mΩ)	12.0	6.0	11.2
PAL6373 (0.14mΩ)	12.0	6.0	12.0
PGL6215 (0.125mΩ)	12.0	6.0	12.0



Released
Available to sample

Pulse Power Beads, including PGL6312 and PAL6364 which were especially developed for TLVR applications, are available for the compensating choke requirement.

- Dual winding to sense load changes
- 70nH - 200nH
- Up to 145Ap
- Better transient performance compared to multi-phase buck.
- Potential for higher switching frequency, reduced switching losses
- Less output capacitance for lower BOM cost