

- Ⓢ Gen 3.0 Coupled Inductors (2, 3, 4 and 5 phases)
- Ⓢ For exclusive use with Maxim VPR devices
- Ⓢ Coupled Inductors enable:
 - Phase ripple current reduction due to AC magnetic field cancellation within the inductor core.
 - Improved efficiency due to lower peak currents
 - Reduction in required output capacitance

Electrical Specifications @ 25°C - Operating Temperature -40°C to +130°C

Part Number	Number of Coupled Phases	Equivalent Transient ¹ Inductance per Phase (nH+/-20%)	I _{rated} ² (Adc)	I _{max} ² Peak per Phase (Adc)	OCL ³ (nH Min, 0Adc)	DCR/Phase (mΩ Max)
PA3142HL	2	50	50	80	150	.25
PA3143HL	3				250	
PA3144HL	4				350	
PA3145HL	5				450	

Notes:

1. In a non-coupled multi-phase topology, the power supply sees the same inductance during transient and steady-state conditions. As a result, any attempt to lower the inductance to improve transient response has the negative result of increasing ripple and peak currents throughout the system during steady-state operation. However, in a coupled inductor multi-phase topology, the interaction of magnetic fields from each phase enables an overall reduction in ripple current during steady-state operation and a lower equivalent inductance during transient operation. The equivalent transient inductance per phase, as listed, represents the actual value of inductance (Lk) that would be required in a non-coupled topology

to realize the same transient performance. For more information on the operation of the coupled inductor topology, please contact Volterra.

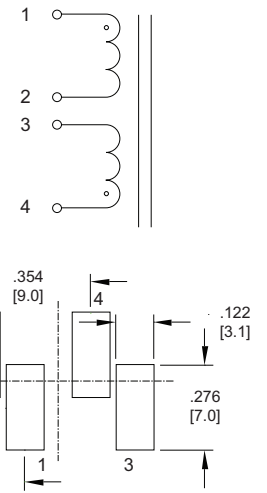
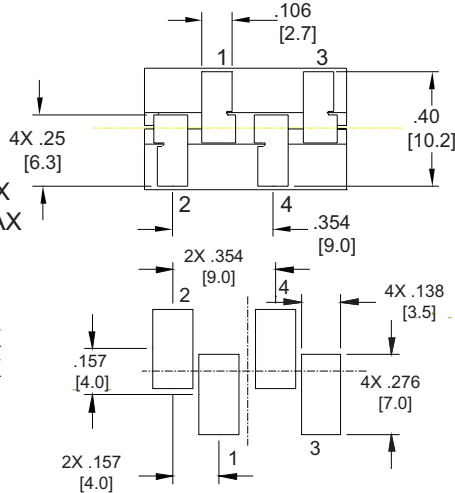
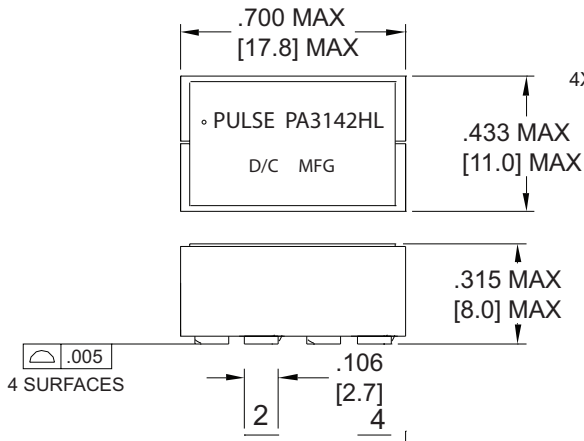
2. The rated current and peak current are based on Volterra's testing of the Pulse coupled inductors. For more information, please contact Volterra.

3. The open-circuit inductance per phase is measured inductance across each phase (ie: measured at (1-2) or (3-4) or (5-6) or (7-8), when all other windings are open) when all other phases are open circuit. The open circuit inductance is equal to the magnetizing inductance per phase (Lm) plus the equivalent transient inductance (Lk).

Mechanicals

Schematics

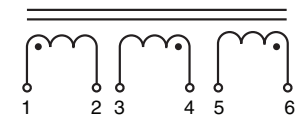
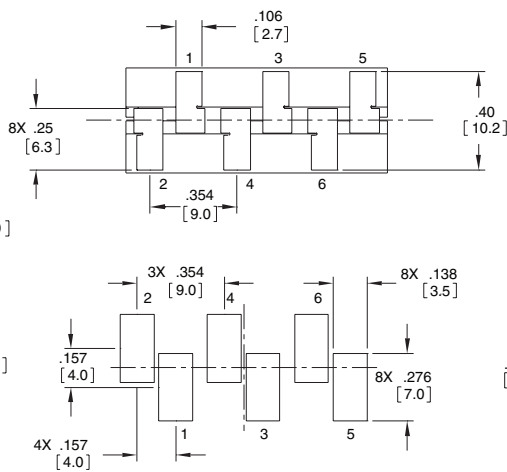
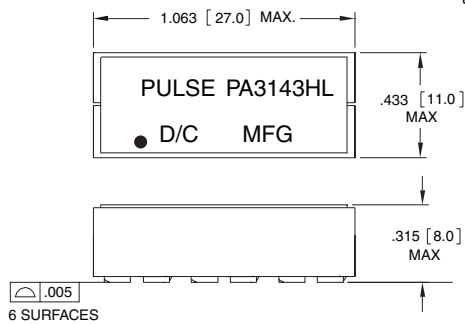
PA3142HL



PRIMARY SUGGESTED LAND PATTERN

ALTERNATE SUGGESTED LAND PATTERN

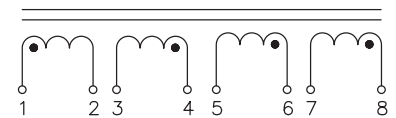
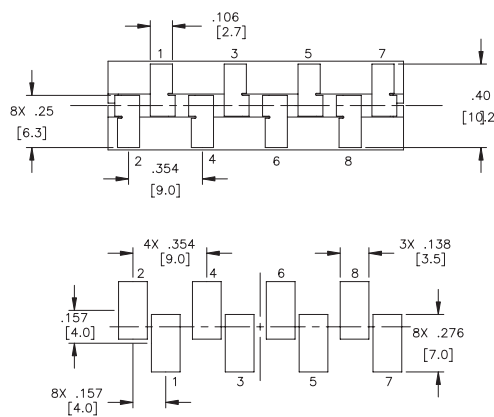
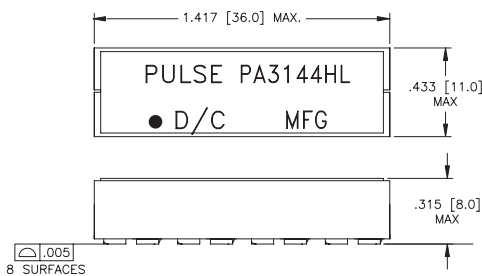
PA3143HL



PRIMARY SUGGESTED LAND PATTERN

ALTERNATE SUGGESTED LAND PATTERN

PA3144HL

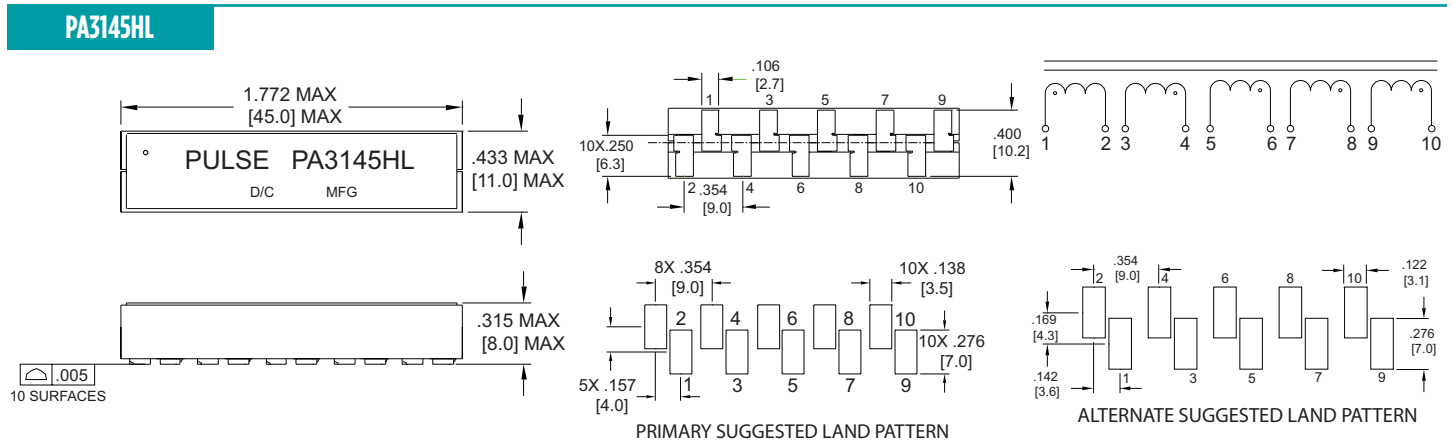


PRIMARY SUGGESTED LAND PATTERN

ALTERNATE SUGGESTED LAND PATTERN

Mechanicals

Schematics



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