

- Ⓢ 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 <sup>1</sup> Inductance per Phase (nH+/-20%)	I <sub>rated</sub> <sup>2</sup> (Adc)	I <sub>max</sub> <sup>2</sup> Peak per Phase (Adc)	OCL <sup>3</sup> (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 an non-coupled topology

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

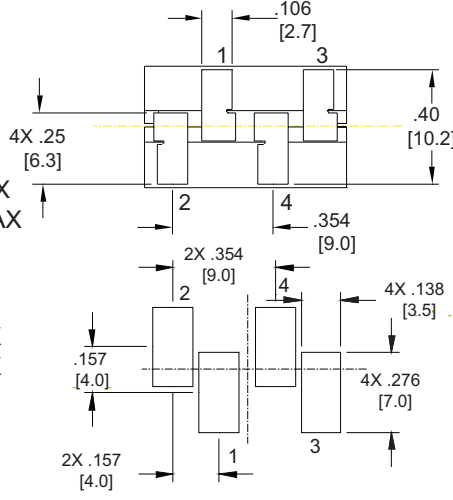
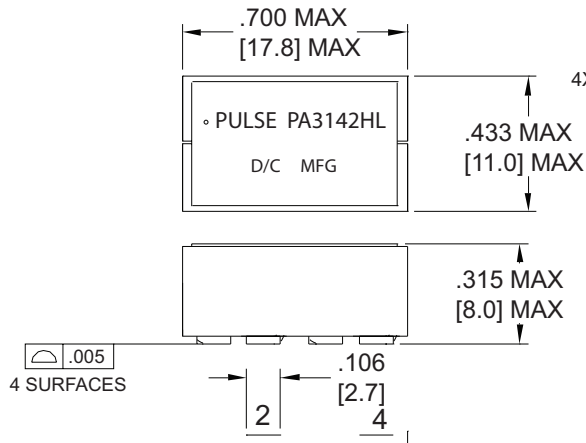
2. The rated current and peak current are based on Volterra's testing of the Pulse coupled inductors. For more information, please contact Volterra.

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).

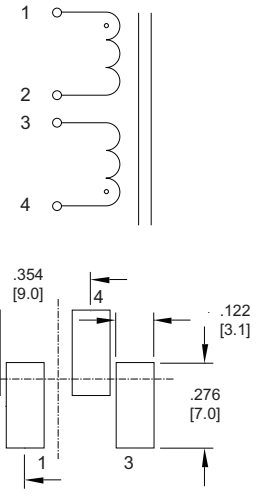
## Mechanicals

## Schematics

### PA3142HL

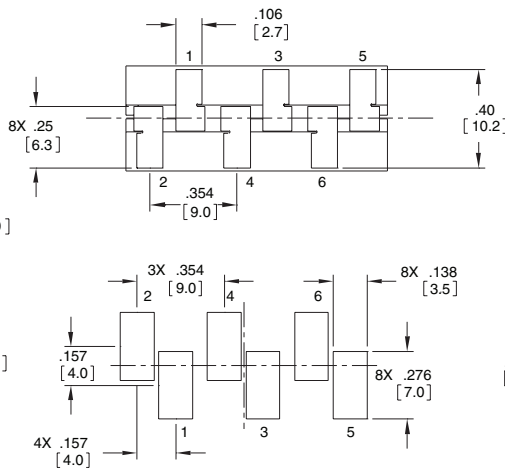
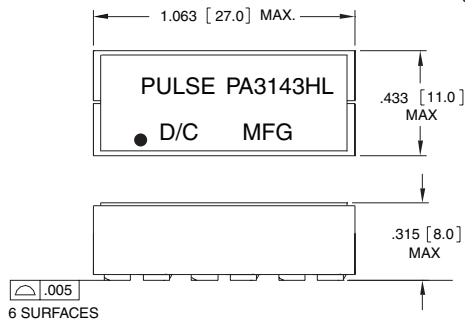


PRIMARY SUGGESTED LAND PATTERN

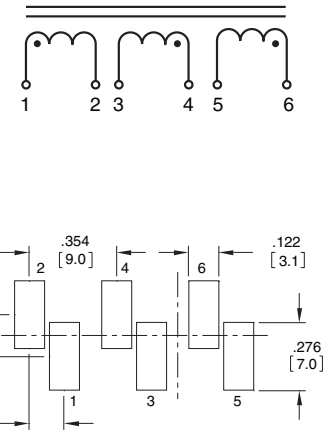


ALTERNATE SUGGESTED LAND PATTERN

### PA3143HL

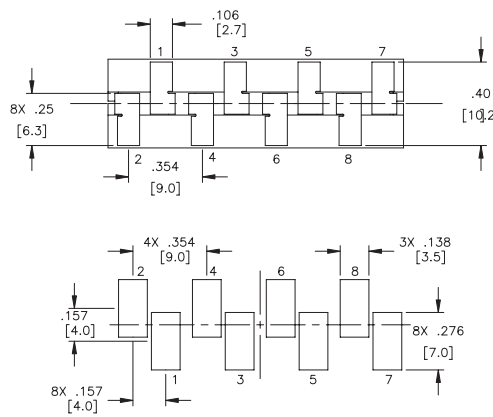
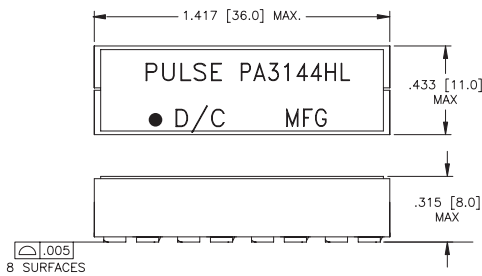


PRIMARY SUGGESTED LAND PATTERN

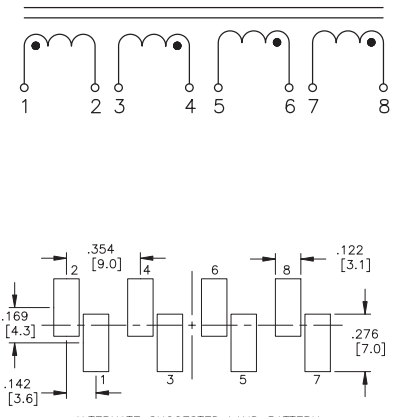


ALTERNATE SUGGESTED LAND PATTERN

### PA3144HL



PRIMARY SUGGESTED LAND PATTERN

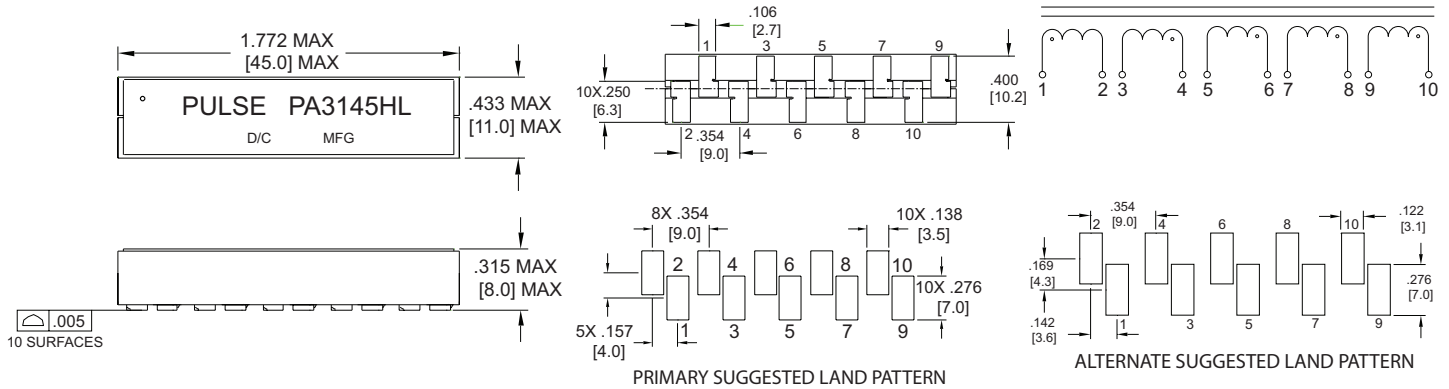


ALTERNATE SUGGESTED LAND PATTERN

## Mechanicals

## Schematics

### PA3145HL



## For More Information

### Pulse Worldwide Headquarters

15255 Innovation Drive Ste 100  
San Diego, CA 92128  
U.S.A.

### Pulse Europe

Pulse Electronics GmbH  
Am Rottland 12  
58540 Meinerzhagen  
Germany

### Pulse China Headquarters

Pulse Electronics (ShenZhen) CO., LTD  
D708, Shenzhen Academy of  
Aerospace Technology,  
The 10th Keji South Road,  
Nanshan District, Shenzhen, P.R.  
China 518057

### Pulse North China

Room 2704/2705  
Super Ocean Finance Ctr.  
2067 Yan An Road West  
Shanghai 200336  
China

### Pulse South Asia

135 Joo Seng Road  
#03-02  
PM Industrial Bldg.  
Singapore 368363

### Pulse North Asia

1F, No.111  
Xiyuan Road  
Zhongli District  
Taoyuan City 32057  
Taiwan (R.O.C)

Tel: 858 674 8100  
Fax: 858 674 8262

Tel: 49 2354 777 100  
Fax: 49 2354 777 168

Tel: 86 755 33966678  
Fax: 86 755 33966700

Tel: 86 21 62787060  
Fax: 86 2162786973

Tel: 65 6287 8998  
Fax: 65 6280 0080

Tel: 886 3 4356768  
Fax: 886 3 4356820

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