THT POWER INDUCTORS

Power Beads - PA2080NL, PA1894NL, PA2150NL and PA2125NL Series

Pulse
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RoHS COMPLIANT

- Desktop/Server Vcore Inductors
- **DCR Tolerance:** ±4%
- **Current Rating:** Over 80Apk
- **Inductance Range:** 140nH to 470nH

Electrical Specifications @ 25°C — Operating Temperature -40°C to +130°C [7]

Part Number	Inductance @0ADC (nH ±10%)	Inductance @Irated (nH TYP)	Irated [1] (ADC)	DCR [2] (mΩ)	Saturation Current [3] (A TYP)		Heating [4] Current (A TYP)
					25°C	100°C	
PA2080NL Series - 10.5mm x 7.5mm x 8.9mm MAX							
PA2080.141NL	140	140	40	0.49 ±4.1%	>80	>80	40
PA2080.161NL	160	160	40		70	60	
PA2080.191NL	190	182	40		65	55	
PA2080.221NL	220	207	40		55	50	
PA1894NL Series - 10.0mm x 9.0mm x 10.0mm MAX							
PA1894.191NL	185	185	35	0.64 ±4.6%	72	58	35
PA1894.221NL	220	220	35		63	51	
PA1894.271NL	270	270	35		50	43	
PA1894.331NL	335	268	35		40	35	
PA2150NL Series - 11.8mm x 9.0mm x 9.2mm MAX							
PA2150.181NL	180	180	37	0.50 ±4.0%	74	67	37
PA2150.231NL	235	235	37		56	50	
PA2150.261NL	270	270	37		52	44	
PA2150.371NL	370	296	36		36	32	
PA2150.471NL	470	376	27		27	25	
PA2125NL Series - 15.9mm x 9.0mm x 9.2mm MAX							
PA2125.251NL	250	250	34	0.62 ±6.5%	68	63	34
PA2125.281NL	285	285	34		66	56	
PA2125.331NL	335	335	34		56	50	
PA2125.361NL	360	360	34		52	46	
PA2125.441NL	440	440	34		42	38	

NOTES:

1. The rated current as listed is either the saturation current or the heating current depending on which value is lower.
2. The saturation current is the typical current which causes the inductance to drop by 20% at the stated ambient temperatures (25°C and 100°C). This current is determined by placing the component in the specified ambient environment and applying a short duration pulse current (to eliminate self-heating effects) to the component.
3. The heating current is the DC current which causes the part temperature to increase by approximately 40°C.
4. In high volt*time applications, additional heating in the component can occur due to core losses in the inductor which may neccessitate derating the current in order to limit the temperature rise of the component. To determine the approximate total losses (or temperature rise) for a given application, the coreloss and temperature rise curves can be used.
5. The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.

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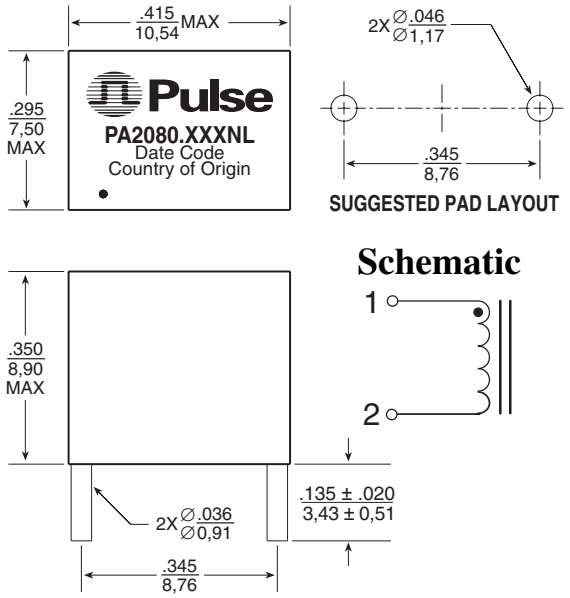
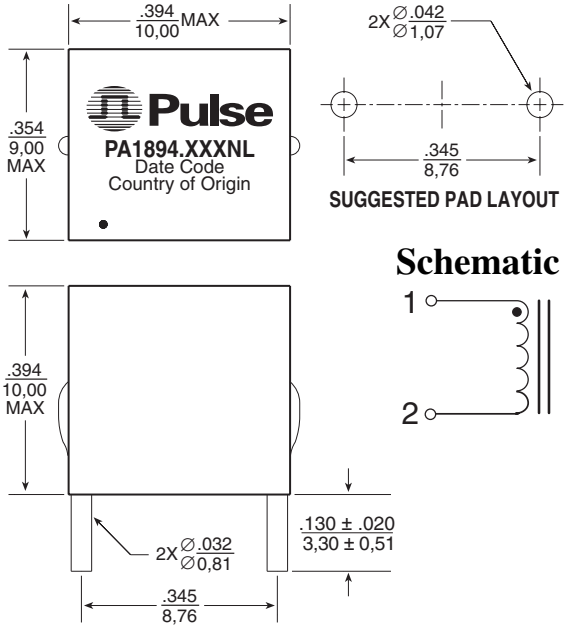
Mechanicals

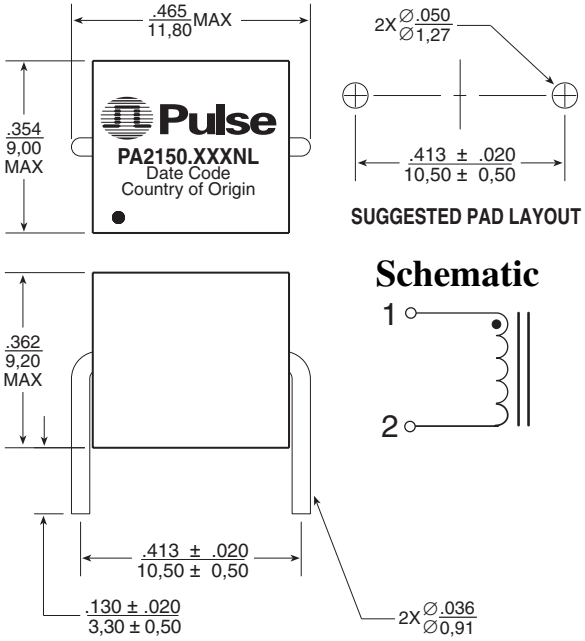
PA2080.XXXNL



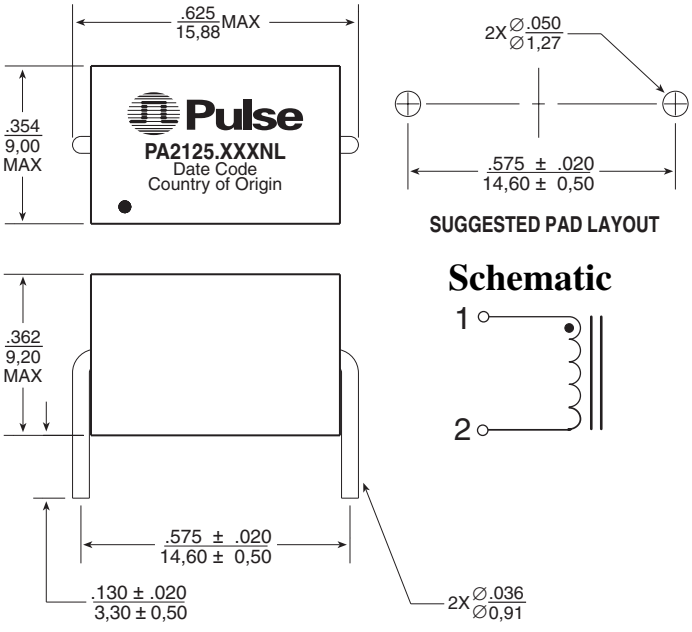
PA1894.XXXNL



PA2150.XXXNL



PA2125.XXXNL



Dimensions: Inches / mm Unless otherwise specified, all tolerances are ± .010 / 0,25

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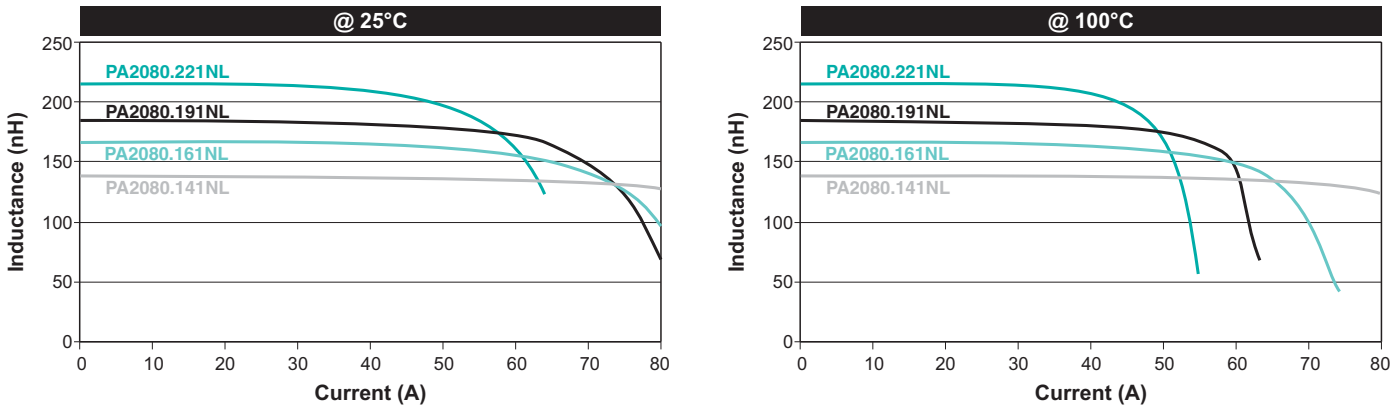
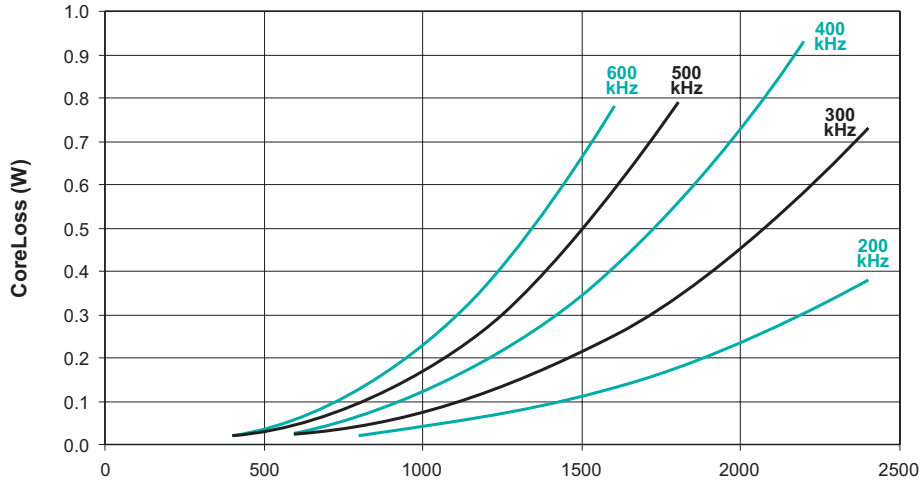
Typical Inductance vs DC Bias for PA2080.XXXNL Series

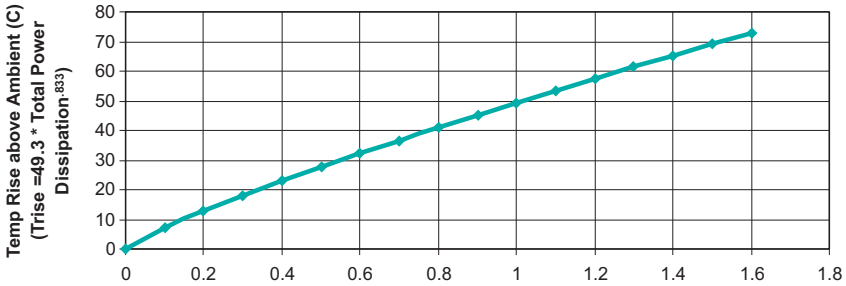


CoreLoss (W) for PA2080.XXXNL Series



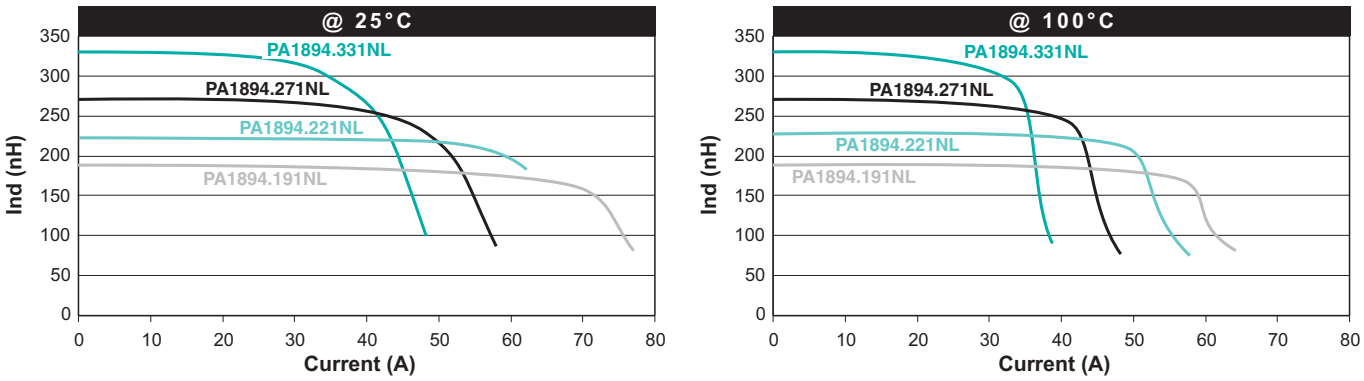
where ΔB = 0.339 * L(nH) * ΔI

Temp Rise vs Power Dissipation for PA2080.XXXNL Series

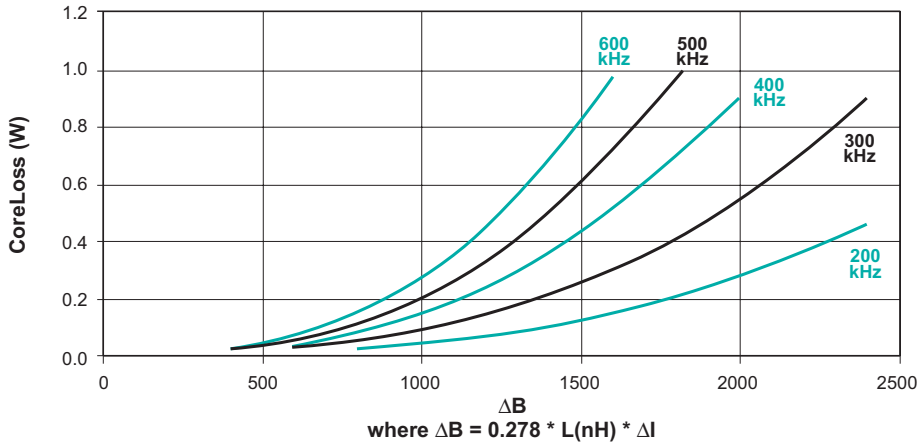


Total Power Dissipation (W) = CopperLoss + CoreLoss
CopperLoss = $Irms^2 * Rdc(m\Omega) / 1000$
CoreLoss = (from table)

Lvsl for PA1894.XXXNL Series

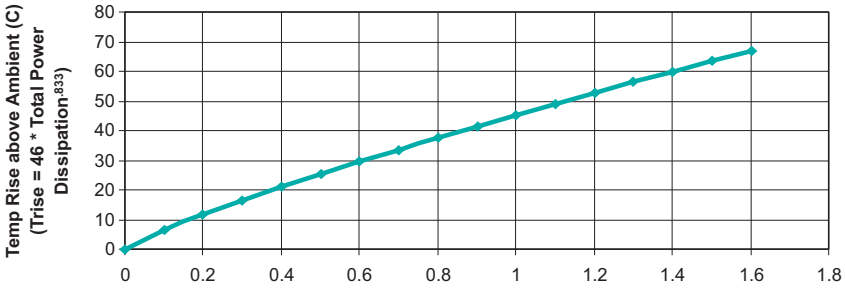


CoreLoss (W) for PA1894.XXXNL Series



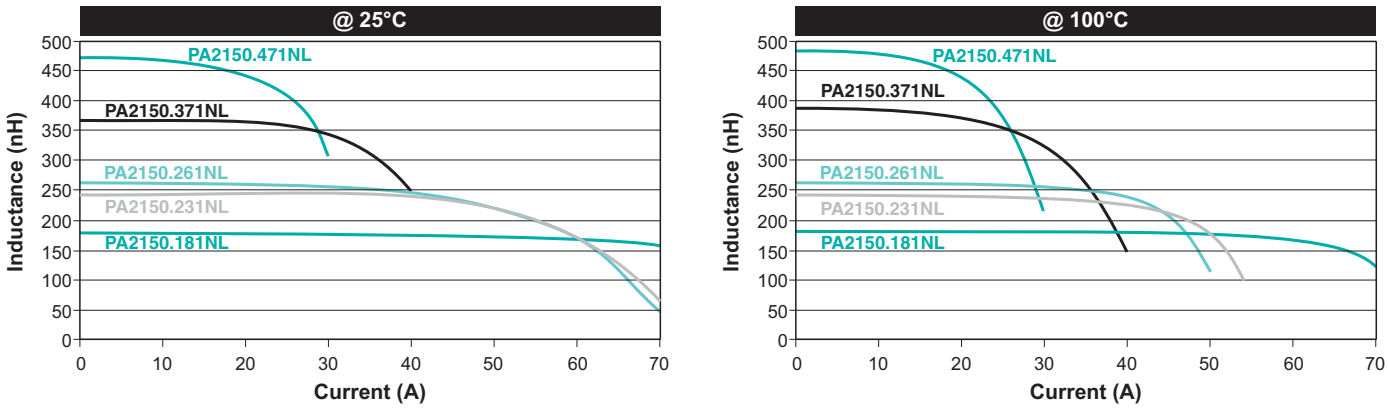
where ΔB = 0.278 * L(nH) * ΔI

Temp Rise vs Power Dissipation for PA1894.XXXNL Series

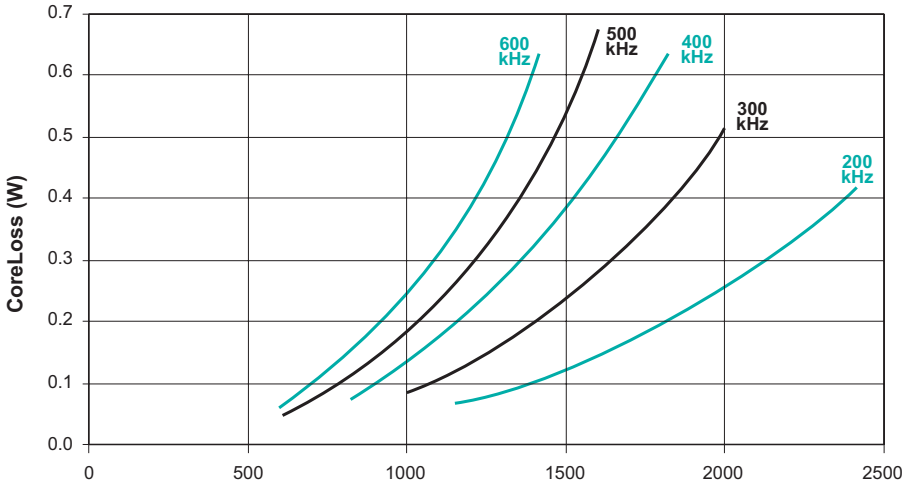


Total Power Dissipation (W) = CopperLoss + CoreLoss
CopperLoss = Irms² * Rdc(mΩ) / 1000
CoreLoss = (from table)

Typical Inductance vs DC Bias for PA2150.XXXNL Series

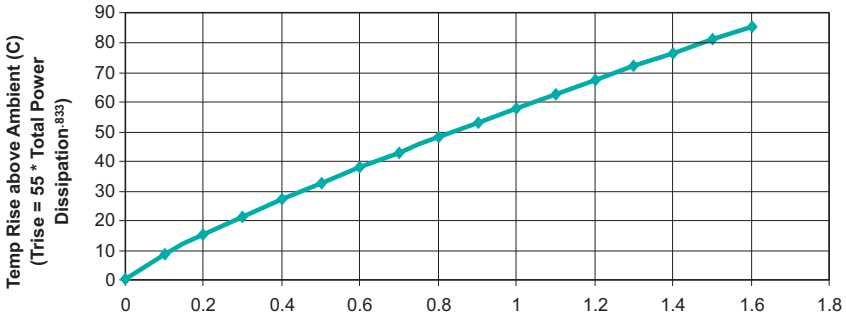


CoreLoss (W) for PA2150.XXXNL Series



ΔB
where ΔB = 0.284 * L(nH) * ΔI

Temp Rise vs Power Dissipation for PA2150.XXXNL Series



Total Power Dissipation (W) = CopperLoss + CoreLoss
CopperLoss = Irms² * Rdc(mΩ) / 1000
CoreLoss = (from table)

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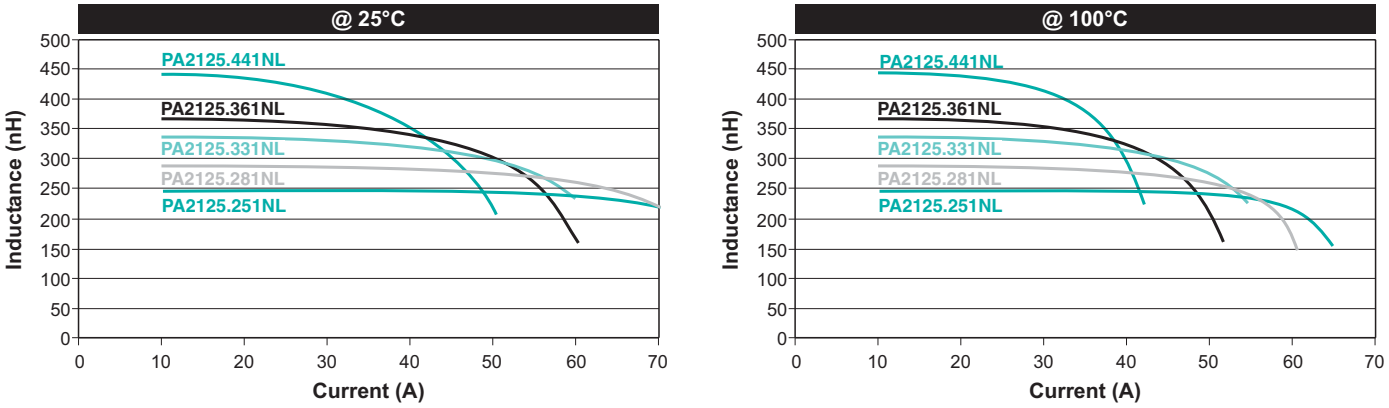
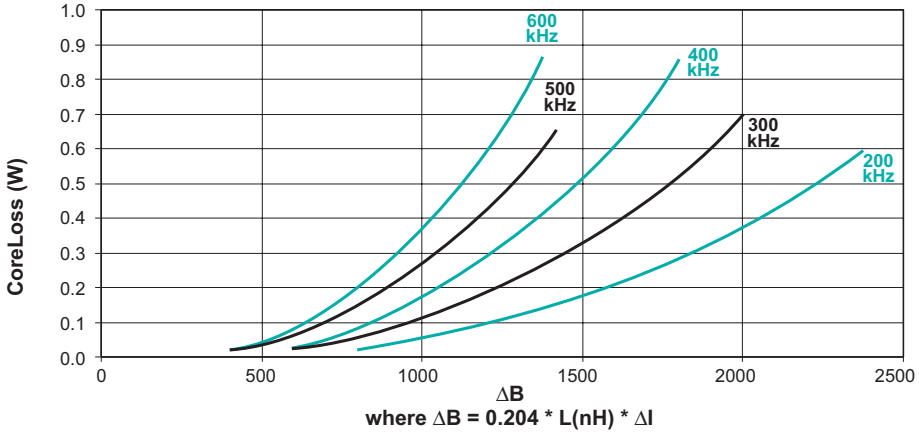
Typical Inductance vs DC Bias for PA2125.XXXNL Series

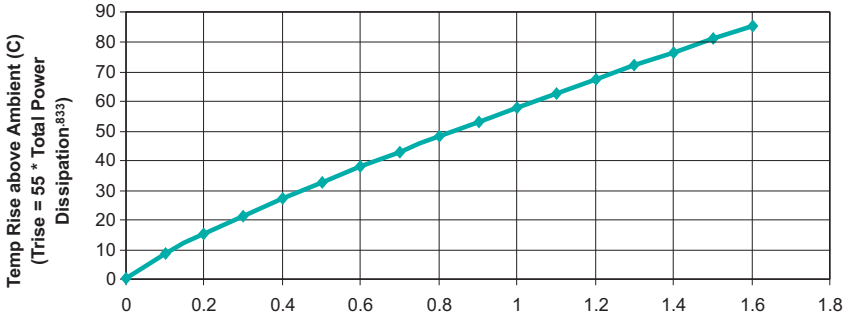


CoreLoss (W) for PA2125.XXXNL Series



where ΔB = 0.204 * L(nH) * ΔI

Temp Rise vs Power Dissipation for PA2125.XXXNL Series



Total Power Dissipation (W) = CopperLoss + CoreLoss
CopperLoss = Irms² * Rdc(mΩ) / 1000
CoreLoss = (from table)

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