



ACME Electronics Corporation
越峯電子材料股份有限公司

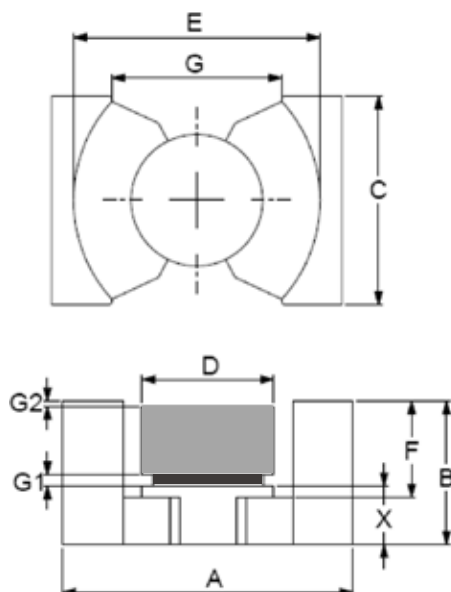
Multi-gap Composite Core

P453 PQH50/50-AG

2026/Jul. Version 1.0

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Multi-gap Composite Core PQH50/50-AG



Core dimensions:

A	50.00 ± 0.70
B	25.00 ± 0.20
C	32.00 ± 0.60
D	20.00 ± 0.35
E	44.00 ± 0.70
F	18.00 ± 0.20
G	32.50 ± 0.70
X	9.30 ± 0.20

Application Fields:

1.

PFC Choke

2.

High Inductance

3.

High Current Power Inductor

Characteristics:

$\Sigma L/A$	L_e	A_e	A_{min}	V_e	W_t/set
0.361 mm ⁻¹	118.4 mm	328.3 mm ²	310.9 mm ²	38860 mm ³	220 g

Material	Part no.	G1 (mm)	G2 (mm)	Inductance Factor A_L (nH/N ²)
Housing core P453 ROD core AG060	P453PQH50/50G249	0.40	0.20	184 ±10%
	P453PQH50/50G161	0.60	0.30	132 ±10%
	P453PQH50/50G115	1.00	0.50	100 ±10%

Custom A_L values, air gaps, and materials are available upon request.

Wide Temperature/Low Loss Material

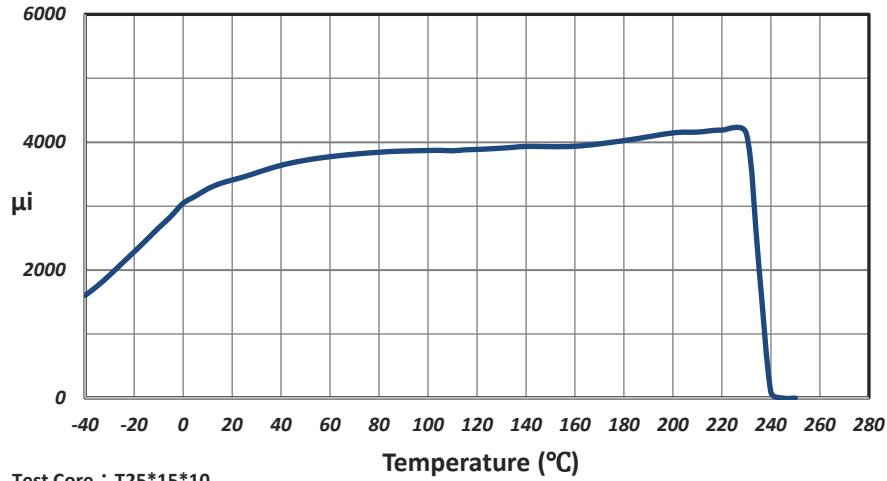
P453

Material properties:

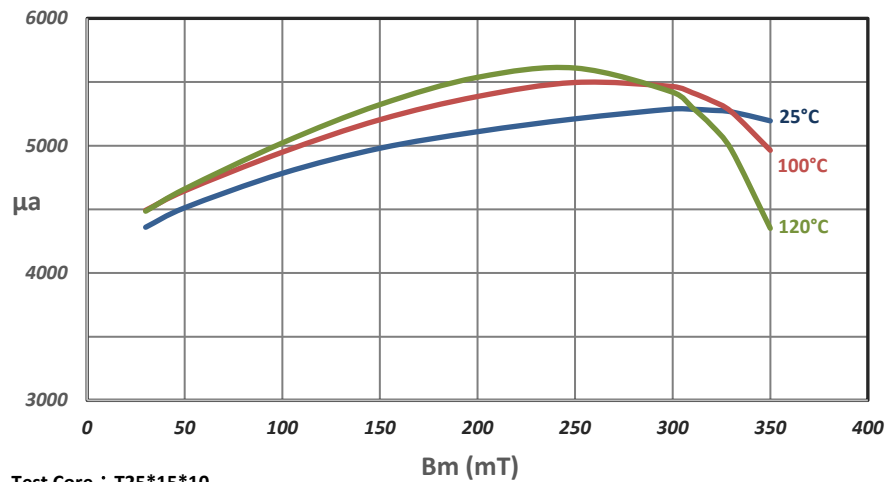
	Symbol	Unit	Measuring Conditions			P453
			Freq.	Flux den.	Temp.	
Initial Permeability	μ_i		10kHz	0.25mT	25°C	3500 $\pm$25%
Amplitude Permeability	μ_a		25kHz	200mT	25°C	> 5000
					100°C	> 5000
Power Loss	Pv	kW/m ³	100kHz	200mT	25°C	230
					100°C	260
			300kHz	100mT	25°C	240
					100°C	300
			500kHz	50mT	25°C	145
					100°C	180
Saturation Flux Density	Bs	mT	10kHz	1200A/m	25°C	535
					100°C	425
Remanence	Br	mT	10kHz	1200A/m	25°C	67
					100°C	60
Coercivity	Hc	A/m	10kHz	1200A/m	25°C	8
					100°C	7
Hysteresis Material Constant	η_B	10 ⁻⁶ /mT	10kHz	1.5-3.0mT	25°C	< 0.6
Disaccommodation Factor	D _F	10 ⁻⁶	10kHz	< 0.25mT	25°C	< 1
Curie Temperature	T _c	°C				> 215
Resistivity	ρ	Ω m				5.00
Density	d	g/cm ³				4.90

Wide Temperature/Low Loss Material P453

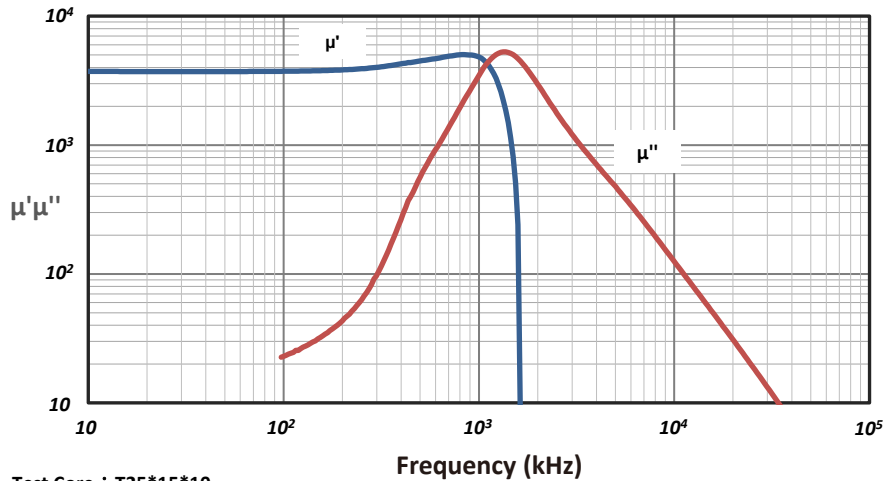
Initial Permeability vs Temperature



Amplitude Permeability vs Flux Density (Bm)

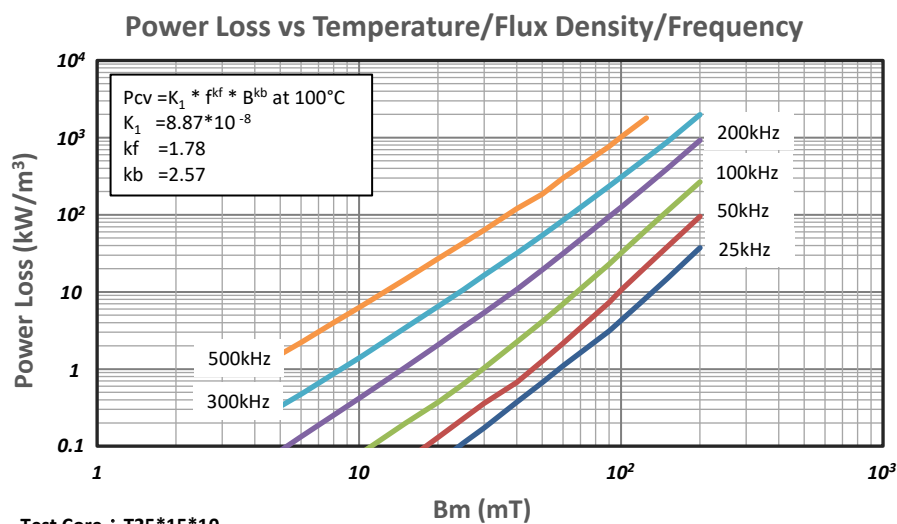


Complex Permeability vs Frequency

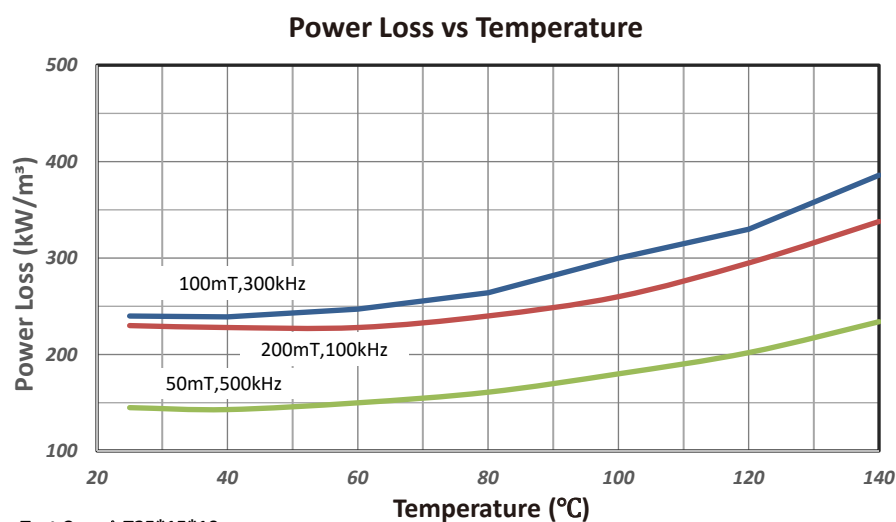


Wide Temperature/Low Loss Material

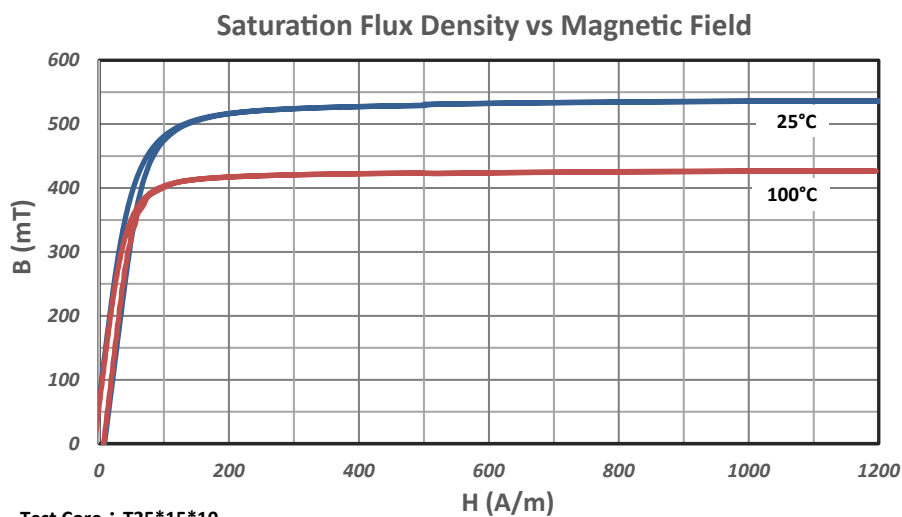
P453



Test Core : T25*15*10



Test Core : T25*15*10



Test Core : T25*15*10

AG series

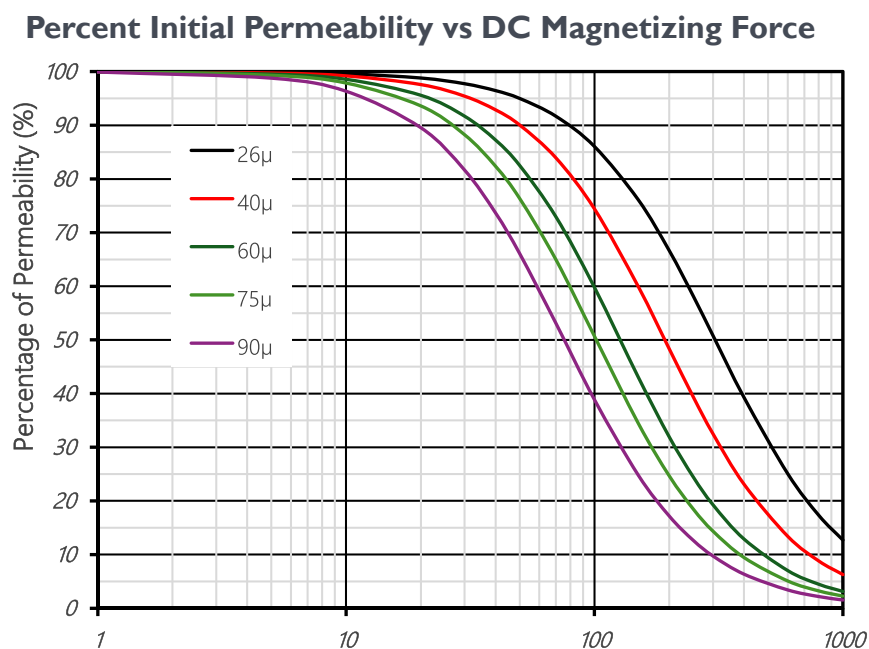
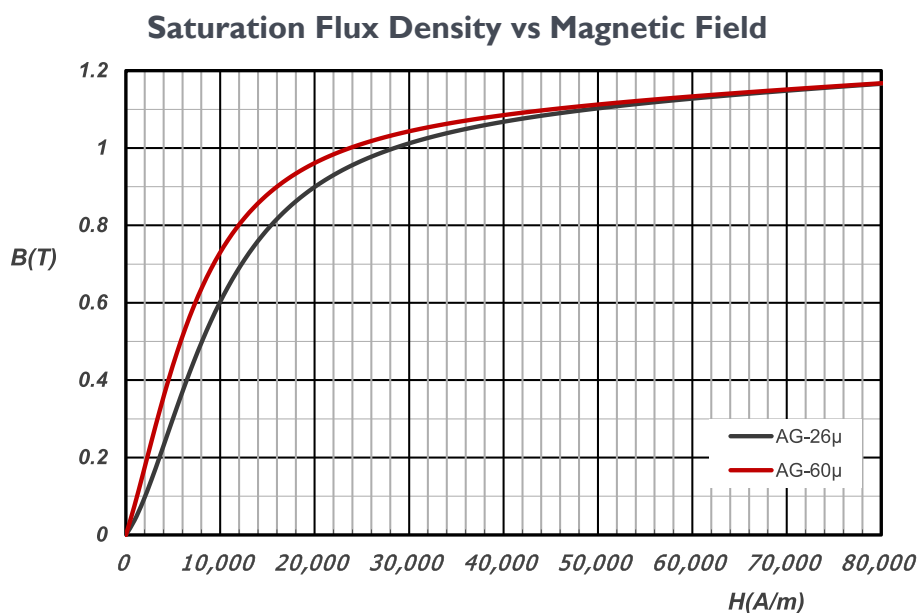
Features

- ◆ Lowest core loss characteristics
- ◆ Good DC-bias performance
- ◆ Excellent temp. and freq. stability

Applications

- ◆ Server power supply
- ◆ PFC inductor
- ◆ >50kHz power applications

Property Material	Permeability	Bs (Tesla)	Core Loss (@50kHz, 1000G)	DC-Bias (% of 60μ@100Oe)
AG Fe-Si-Al (Gas atomized)	26-90	1.2	250kW/m ³	60%



Material Characteristics

AG series

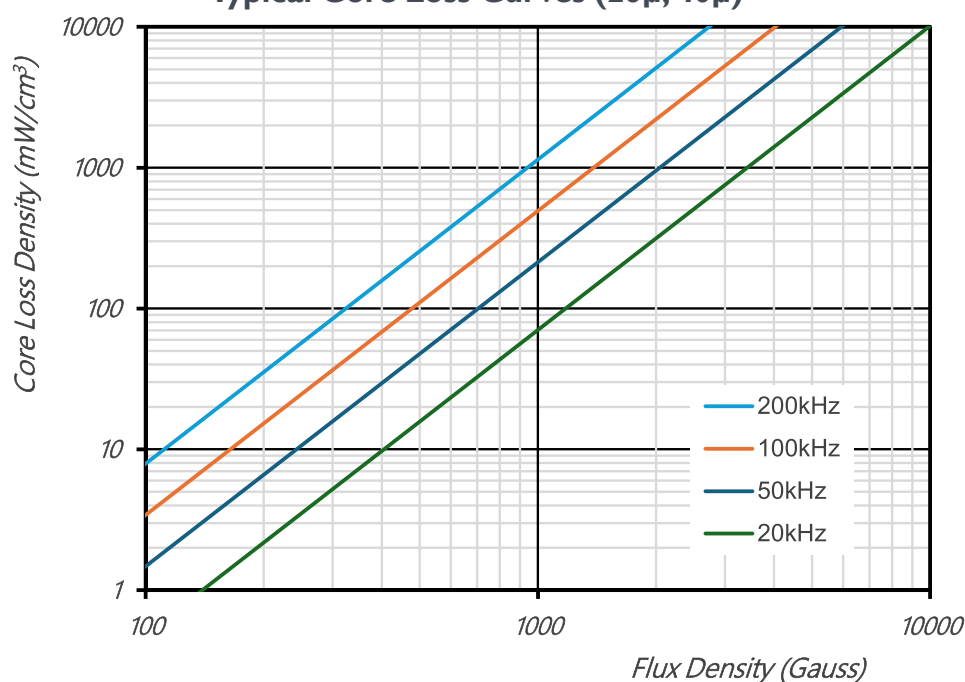
The curve fitting process gives rise to the following core loss density $P_v(\text{mW}/\text{cm}^3)$ equation:

$$P_v(\text{mW}/\text{cm}^3) = C_m \cdot f^x \cdot B^y$$

*frequency(f) unit in kHz and flux density(B) unit in kGauss

μ_e	C_m	x	y
26 & 40	1.872	1.21	2.16
60 & 75 90	0.935	1.43	2.13

Typical Core Loss Curves (26 μ , 40 μ)



Typical Core Loss Curves (60 μ , 75 μ , 90 μ)

