

## Material Properties

### 1.MATERIAL PROPERTIES OF THE IRON POWDER CORE

Characteristics \ Material	35	55	75	22	33	60	75a
Permeability $\mu$	35	55	75	22	33	60	75
Temp.Coeff.of Perm(+ppm/oC)	250	360	825	410	600	950	650
Color Code	Yellow/red	Green/red	Yellow/white	Gray/green	Gray/yellow	Green/yellow	Green/blue

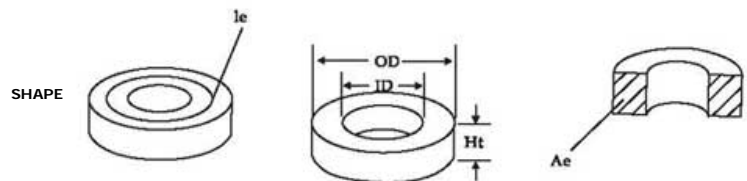
### 2.SIZE TOLERANCE(mm) OF THE IRON POWDER CORE

Yuxiang Part Number	OD(mm)	ID(mm)	Ht(mm)
YT30-YT38	$\pm 0.35$	$\pm 0.35$	$\pm 0.35$
YT44-YT72	$\pm 0.50$	$\pm 0.50$	$\pm 0.50$
YT80-YT141	$\pm 0.50$	$\pm 0.50$	$\pm 0.60$
YT150-YT225	$\pm 0.60$	$\pm 0.60$	$\pm 0.75$
YT249-YT300	$\pm 0.75$	$\pm 0.75$	$\pm 0.75$

The listed tolerance includes coating

### 3.MATERIAL PROPERTIES OF OTHER METALLIC POWDER CORE

Type	Material	$\mu$	$Q$	Temp.Coeff. (-65~125) oC (ppm)	Density (g/cm3)	Grey Color	Bs (Gs)	Inductance coeff. Tolerance AI
T3H	FeNi50	60	$\geq 20$	$\leq 300$	7.6	Blue	13000	$\pm 15\%$
T4H	FeNi50	125	$\geq 5$	$\leq 300$	7.6	Blue	13000	$\pm 15\%$



SYMBOL AND FORMULA

$$A_e = \frac{OD-ID}{2} \times Ht$$

$$L = \frac{4\pi\mu_e A_e}{l_e} \times N^2$$

$$l_e = \frac{OD+ID}{2} \times \pi$$

$$N = \sqrt{\frac{L}{A_L}} \quad N$$

$A_e$  - Core Cross sectional area(cm<sup>2</sup>)  
 $l_e$  - Effective magnetic path length(cm)  
 $N$  - Winding turns  
 $A_L$  - Inductance rated value (nH/N<sup>2</sup>) of one core, during frequency 10KHz and AC flux density 10 gauss(1mT)  
 $L$  - Inductance  
 $\mu_e$  - Effective Permeability  
 $\pi$  - 3.14