

MATERIAL TYPE	THICKNESS (mm)	DC MAGNETIC CHARACTERISTICS			
		INITIAL PERMEABILITY ( $\mu_i$ ) At 0.4A/m	MAXIMUM PERMEABILITY ( $\mu_{max}$ )	COERCIVE FORCE (A/m)	MAXIMUM FLUX DENSITY ( $B_{10}$ )
PC (Ni78~81%)	0.07	100,000MIN	300,000MIN	1.0 MAX	0.69 T MIN
	0.1	100,000MIN	300,000MIN	1.0 MAX	0.69 T MIN
	0.15	200,000MIN	400,000MIN	1.0 MAX	0.69 T MIN
	0.2	200,000MIN	400,000MIN	1.0 MAX	0.69 T MIN
	0.35	200,000MIN	400,000MIN	1.0 MAX	0.69 T MIN
PB (Ni47~49%)	0.35	10,000MIN	100,000MIN	4.8MAX	1.45MIN

## HEAT TREATMENT

1. ATMOSPHERE : H<sub>2</sub> GAS (DEW POINT: -40°C ~ -60°C)
2. TYPE : BATCH FURNACE
3. TREATMENT CONDITION

ALLOY	TEMPERATURE	TIME	COOLING DETAILS
PC	1100°C	4Hr	1°C/MIN BETWEEN 600°C~300°C
PB	1120°C	4Hr	COOL TO 300°C

## THICKNESS, BURR, TOLERANCE

SPEC	THICKNESS(mm)			BURR
	0.15	0.2	0.35	
TOLERANCE	+0 -0.01	+0 -0.01	+0 -0.02	MAX 0.02 -

● TURNS:

$$N = \frac{E_{rms} \times 10^8}{4.44 \times f \times A \times B}$$

N= Turns required  
 E= RMS voltage applied to N  
 F= Frequency of E,Hz  
 A= CORE area ,Cm<sup>2</sup>

● INDUCTANCE:

$$L = \frac{0.4\pi N^2 A \mu}{\ell \times 10^8}$$

L= Inductance, Henries  
 N= number of turns on winding  
 A= Net core area ,Cm<sup>2</sup>  
 $\mu$ = CORE Permeability  
 $\ell$  = Magnetic path length , Cm

● MAGNETIC FORCE :

$$H = \frac{0.4\pi NI}{\ell}$$

H= Magnetizing force - Oersted  
 N= number of turns  
 I = Peak current , Amperes  
 $\ell$  = Magnetic path length , Cm

## MAGNETIC DESIGN FORMULAE

B<sub>max</sub> in Calculated using  $\ell$  (path length in Cm) and A(Cross Sectional area for a square stack in square centimeters) and E<sub>rms</sub> = 1.0 Volt at frequency 60 Hertz. N is the number of turns of the electrical winding.

H is calculated in oersted per milliamperes of D.C.

The inductance (L) is calculated for a square stack, N is the number of turns.  $\mu$  ac is the permeability of the lamination size, grade, and thickness.

K<sub>1</sub> is the stacking factor given formulae.