GLOSSARY OF TERMS

SYMBOL	UNIT	DEFINITION
H	OERSTED	**MAGNETIC FIELD STRENGTH (MAGNETIZING FORCE)** The externally applied magnetizing force that induces magnetic flux in a magnetic material.
Hs	OERSTED	**SATURATION MAGNETIZATION FORCE** The value of magnetizing force (H) required to achieve saturation.
Hc	OERSTED	**COERCIVE FORCE** The magnetizing force required to reduce the magnetic induction in a magnetic structure from Br to zero.
B	GAUSS	**MAGNETIC FLUX DENSITY (MAGNETIC INDUCTION)** The flux per unit area induced by a field strength (H).
Bs	GAUSS	**SATURATION FLUX DENSITY** The value of magnetic flux density at saturation. It is material's maximum magnetic induction possible.
Br	GAUSS	**RESIDUAL INDUCTION (REMANENECE)** The magnetic induction (B) remaining in a magnetized material after the magnetizing force (H) has been reduced to zero.
μ	—	**PERMEABILITY** The measure of a materials ability to conduct magnetic flux relative to air (where air is assumed to have a permeability of one (1). The ratio of the flux (B) in a material that results from a known magnetizing force (H) divided by that same known magnetizing force (H) ($\mu = B/H$).
μ_i	—	**INITIAL PERMEABILITY** The relative permeability at very low magnetic field strenghts (H).
μ_e	—	**EFFECTIVE PERMEABILITY** The relative permeability of a magnetic structure including the effect of air gaps in the magnetic path length.
μ_m	—	**MAXIMUM PERMEABILITY** The maximum value of permeability observed on a magnetic material as its normal magetization curve is traversed.
L	HENRY	**INDUCTANCE (INDUCTOR)** Electrical circuit property that opposes any change in current because of a magnetic field.
AL	nH/N2 or mH/1000 TURNS	**INDUCTANCE INDEX** Inductance per unit turn.
Q	—	**Q FACTOR** A measure of the losses in a material at very low levels of magnetizing force. High Q means low losses; low Q means high losses.
TAN $\delta/\mu i$	—	**LOSS FACTOR** Figure of merrit of a material. Eddy current and residual losses per unit of permeability (1/UO).
T.C.	%/°C or PPM/°C	**TEMPERATURE COEFFICIENT** The effect of temperature on magnetic characteristics, such as μ, B, H, etc. always expressed over a specified temperature range.
Tc	°C	**CURIE TEMPERATURE** The temperature at which a ferromagnetic material becomes paramagnetic. The temperature at which a material's initial permeability becomes equal to the permeability of air which is assumed to be one (1).
Le	cm	**EFFECTIVE MAGNETIC PATH LENGTH** Normalized distance of the path that the magnetic flux takes through the core.
Ae	cm^2	**EFFECTIVE CROSS SECTIONAL AREA** Normalized core area perpendicular to the magnetic line of flux.

GLOSSARY OF TERMS (continued)

SYMBOL	UNIT	DEFINITION
Ve	cm^3	**EFFECTIVE CORE VOLUME** Effective volume of the magnetic core material (may be less than the physical volume of the core).
Wa	cm^2	**CORE WINDOW AREA** Area available for windings.
WaAe	cm^4	**POWER HANDLING CAPABILITY INDEX** The product of a core's effective cross sectional area and its window area. Also known as area product (Ap).
—	—	**SATURATION** A magnetic material is saturated when increases in magnetizing force (H) no longer appreciably increase the magnetic induction (B).
—	mw/cm^3	**CORE LOSS** A measure of the efficiency of a material at relatively high levels of magnetizing force (H). Power dissipated in the material (analagous to I^2R loss in a resistor).
—	—	**HYSTERESIS CURVE** A curve showing the relationship between a magnetizing force (H) and the resultant magnetic induction (B).
—	—	**TRANSFORMER** A device that transforms electric energy from one circuit to another circuit by electromagnetic induction. The transformed electric energy is at the same frequency but often at different voltage and current values. Transformers are often used to step up or down voltage or current, match impedances or isolate one circuit from another.
—	—	**CHOKE COIL (FILTER)** Inductor placed in a circuit to "choke out" unwanted frequencies. Often used to allow direct current to pass while opposing pulsating or alternating current.
thd	decibels	**TOTAL HARMONIC DISTORTION** The ratio of output power at the fundamental frequency to the output power of all harmonics

Prefix	Symbol	Factor
yocto	y	10^{-24}
zepto	z	10^{-21}
atto	a	10^{-18}
femto	f	10^{-15}
pico	p	10^{-12}
nono	n	10^{-9}
micro	μ	10^{-6}
milll	m	10^{-3}
centi	c	10^{-2}
deci	d	10^{-1}
deca	da	10^{1}
hecto	h	10^{2}
kilo	k	10^{3}
mega	M	10^{6}
giga	G	10^{9}
tera	T	10^{12}
peta	P	10^{15}
exa	E	10^{18}
zetta	Z	10^{21}
yotta	Y	10^{24}