

# Impeder Cores for High Frequency Welding

## IPH Series

Conformity to RoHS Directive

### IMPEDERS FOR HIGH FREQUENCY WELDING

An impeder core is an essential accessory for the welding of tubes and pipes using high frequency waveguide heating. The characteristics and durability of the impeder core have a significant effect on the efficiency and stability of the welding process. Thanks to advances in technology and experience gained from manufacturing with IP1 (TDK's previous impeder material), the new IPH material provides high efficiency, energy savings, and long lifetimes.

### APPLICATIONS

Pipe welding

### FEATURES

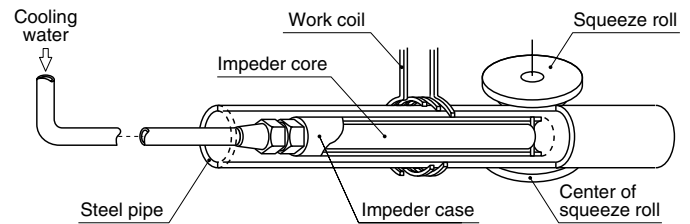
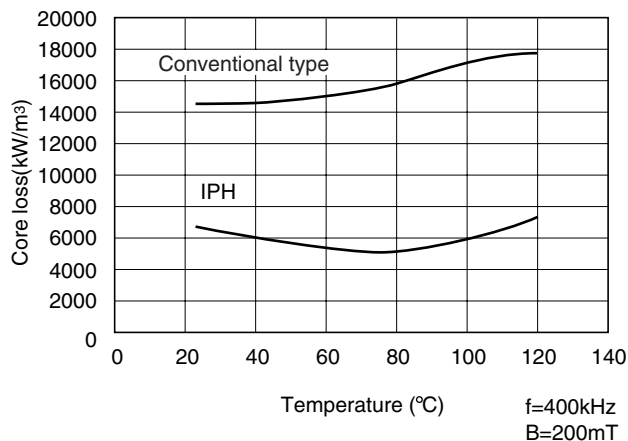
IPH has a much lower reluctance than IP1 (60% lower according to our measurements). The result is that internal heating, which reduces the saturation magnetic flux density, can be suppressed, and the welding process is very efficient.

### PIPE WELDING USING AN IMPEDER CORE

The impeder core concentrates the magnetic flux generated by the work coil into the area of the pipe joint. Consequently, use of an impeder core massively increases the efficiency of the welding process.

### IMPEDER CORES

Core loss vs. Temperature

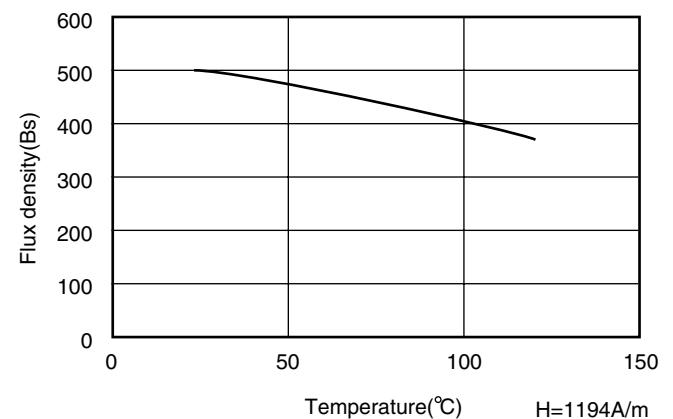


### CHARACTERISTICS OF THE MATERIAL IPH

Initial permeability ( $\mu$ i)	1800±25%	(H=0.24A/m, f=100kHz, at23°C)
Saturation magnetic flux density (Bs)	$\geq 490$ mT	(H=1194A/m, at23°C)
Core loss (Pcv)	$\leq 10000$ kW/m <sup>3</sup>	(f=400kHz, B=200mT, at100°C)
Curie temperature (Tc)	>200°C	
Density (d)	$4.8 \times 10^3$ kg/m <sup>3</sup>	
Resistivity ( $\rho$ )	$3.0 \Omega \cdot m$	

\*Measurements based on a toroidal core

Saturation magnetic flux density vs. Temperature



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

• All specifications are subject to change without notice.