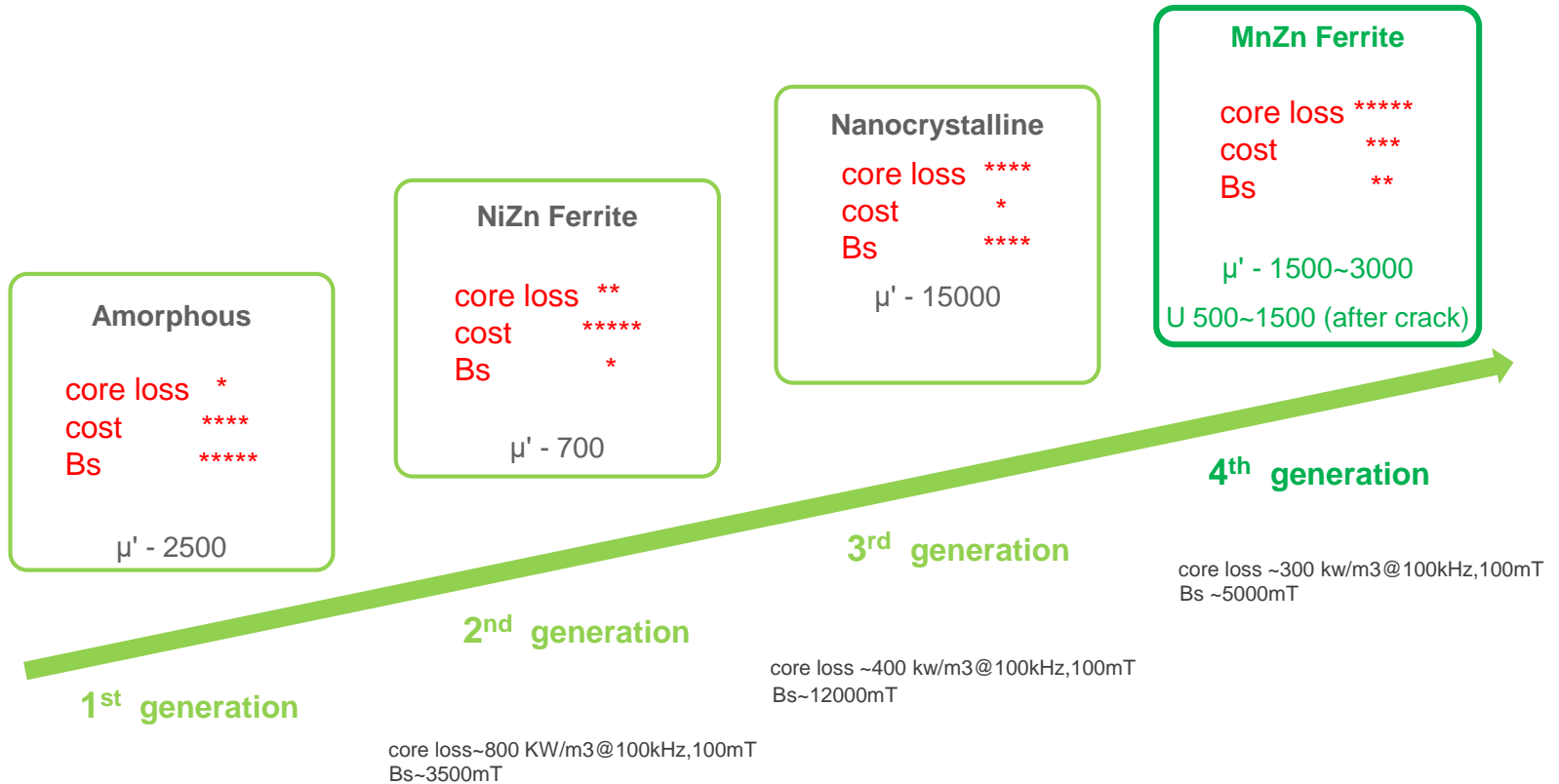




Technical support data

Market Trend



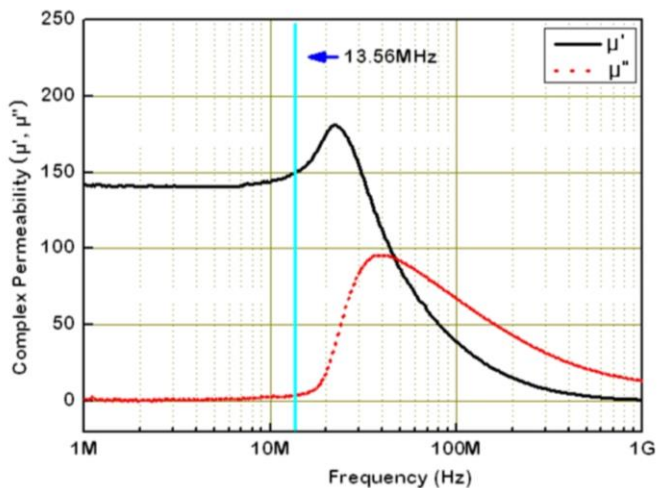
**The core loss are extremely sensitive to metal sheet's thickness and cracking condition

Specification(NiZn) N1-FS-80-10

Specification

Standard size	125 * 125 mm
Ferrite thickness	80 um
PET & Adhesive thickness	PET- 10 um / Adhesive – 10 um
μ' @13.56MHz	150
μ'' @13.56MHz	5

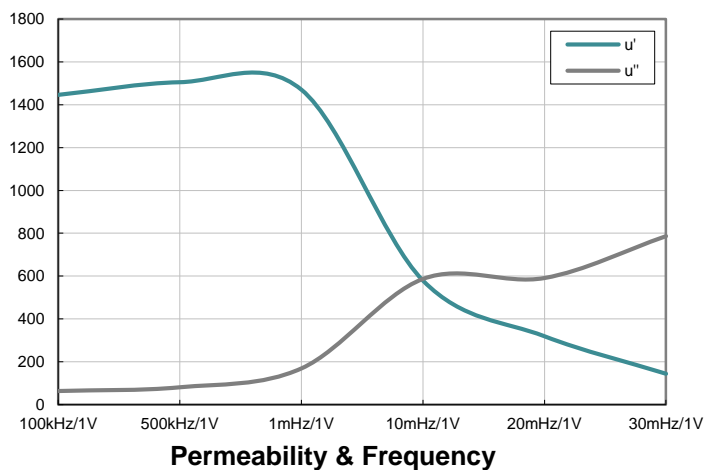
Permeability & Frequency



Specification(MnZn) M5-FS series

Specification

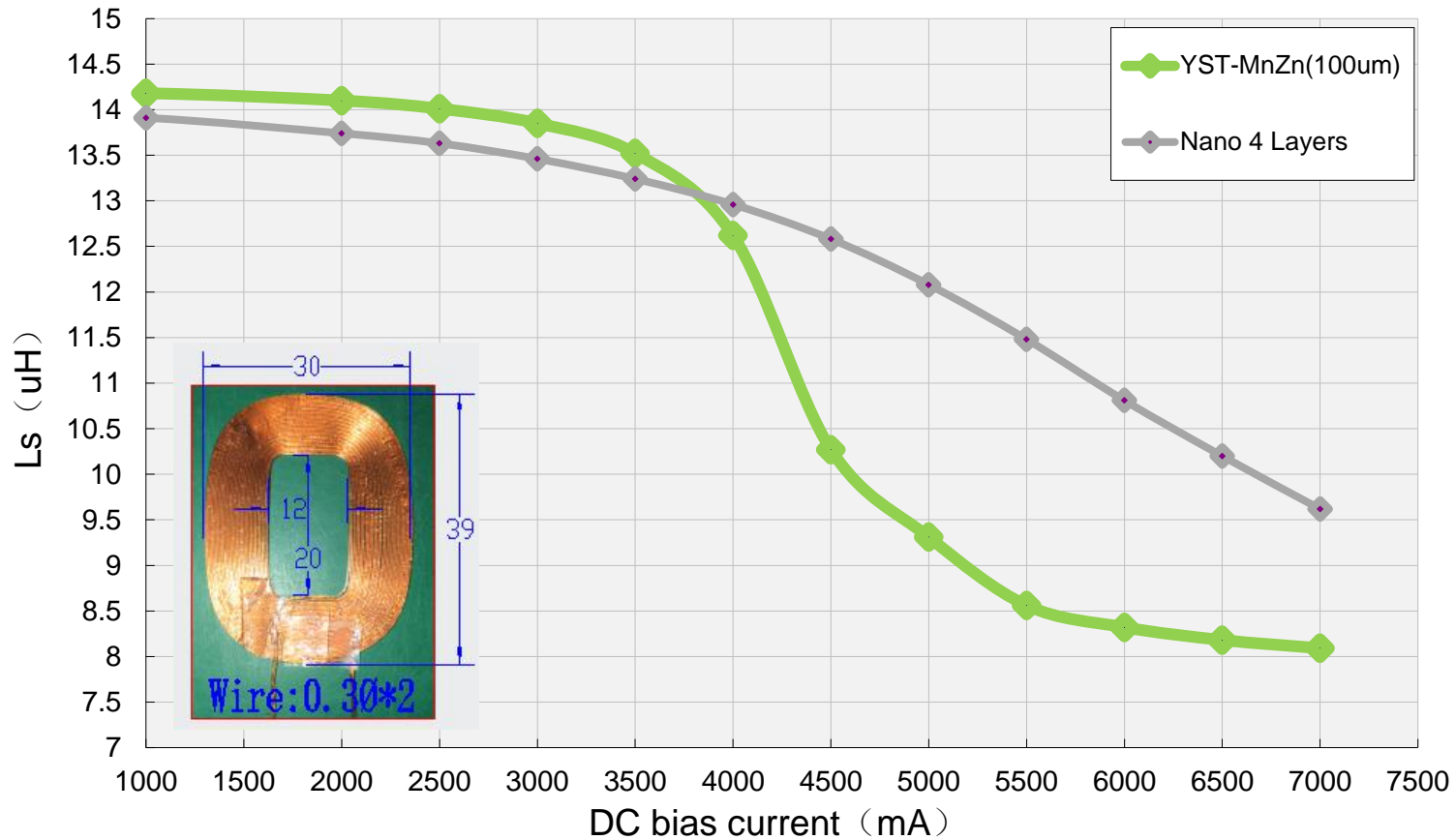
Standard size	125 * 125 mm
Ferrite thickness	80~110 um
Black PET & Adhesive thickness	Black PET – 5um / Adhesive – 5 um
μ' @100kHz	1400
μ'' @100kHz	30~60
Bs(mT)	480
$\rho(\Omega m)$	10
Tc(°C)	> 190
Density(kg/m ³)	4.8 * 10 ³



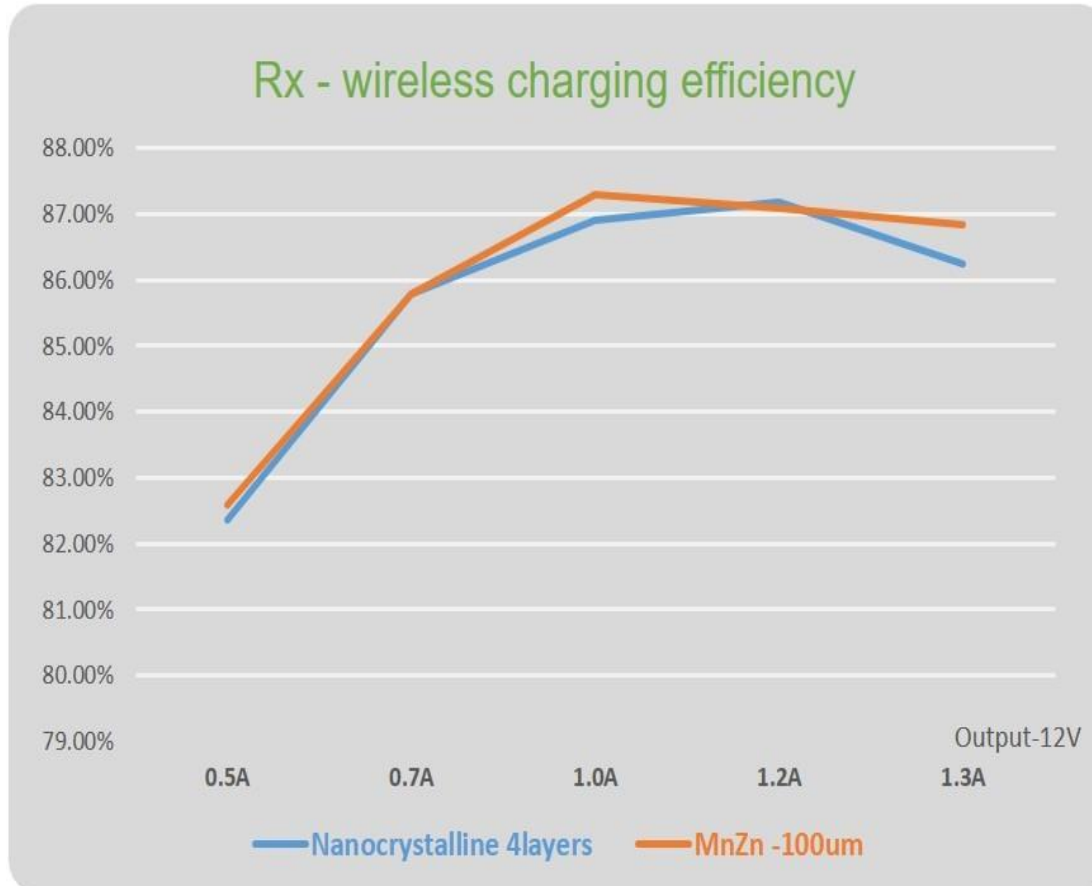
Property comparison by materials

Properties	Test Condition	Nano	MnZn
Initial Permeability (μ_i)	100KHz	15,000	3,000
Effective Permeability (μ_e)	100KHz (after crack)	1,500	~ 1,500
Core Loss (kW/m ³)	100KHz/100mT	220	60
	100kHz/200mT	1,000	500
	100kHz/300mT	2200	1600

Ls comparison (MnZn vs Nano 4layers)



WPC charging efficiency comparison



	Nano 4layers	MnZn (100um)
Ls@100kHz (uH)	8.00	8.18
Rs@100kHz (Ohm)	0.240	0.217
Q@100kHz	20.95	23.63
0.5A in 12V output	82.37%	82.58%
0.7A in 12V output	85.78%	85.78%
1.0A in 12V output	86.91%	87.29%
1.2A in 12V output	87.18%	87.10%
1.3A in 12V output	86.24%	86.83%

** Tested by YST

NFC performance

Sheet	Reader Mode			
	Type 1 – Topaz	Type2 – Ultralight	Type2 – Ultralight C	Type 4 Desfire
	20mm이상	30mm이상	10mm이상	15mm이상
Nano 5 Layer	42	45	18	21
Mn-Zn 100mm	49	47	22	26



MST performance

Material	MST X-Y Cognitive rate%
Nano 5 Layers	65.0%
MnZn ferrite 100um	75.2%

Strong points by materials

	NiZn	Nano	MnZn
core loss	high	low	low
charging efficiency	low	high	high
temperature rising	high	low	low
material cost	low	high	low
processing cost	low	high	low
MST performance	low	high	high
NFC performance	low	high	high



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