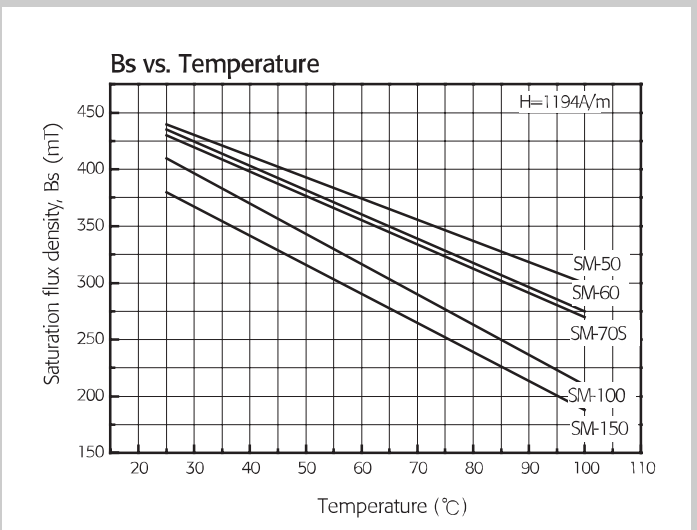
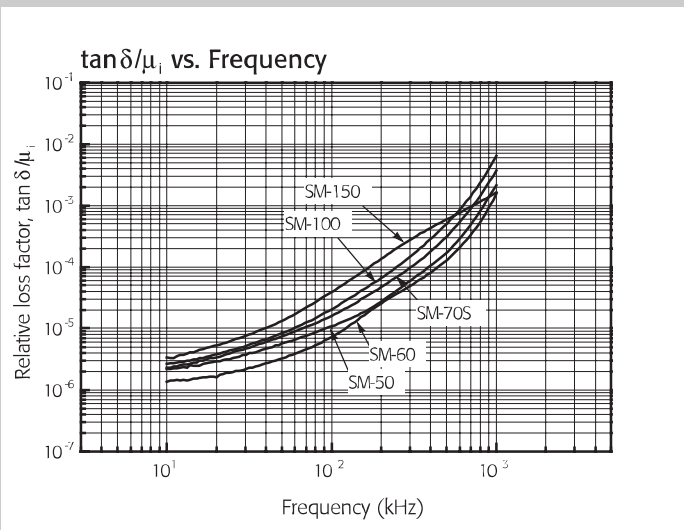
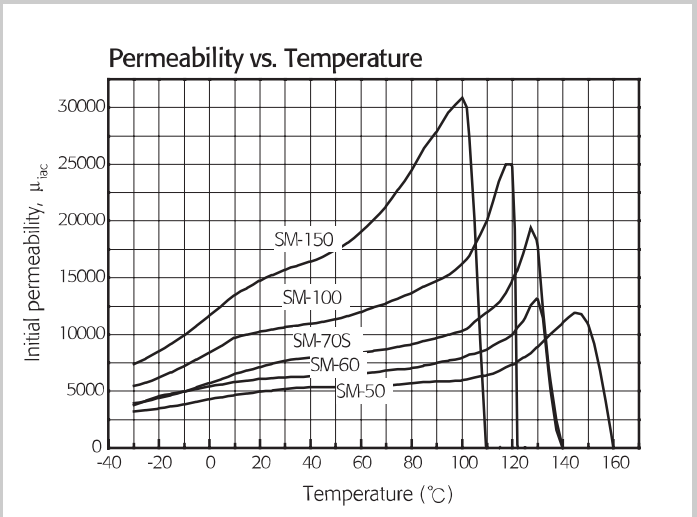
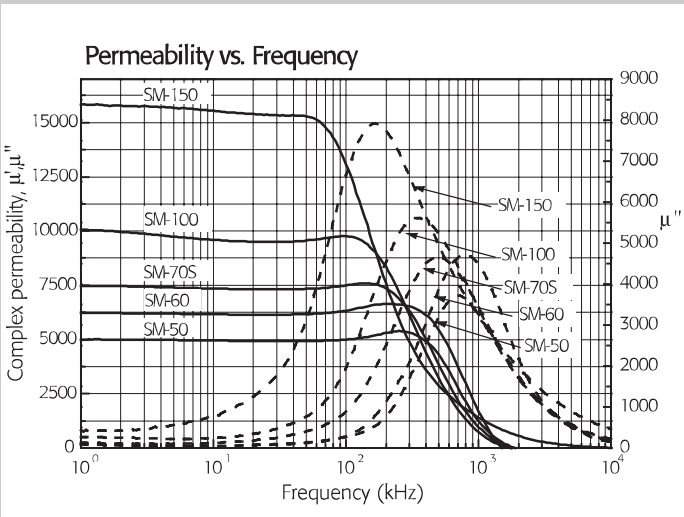


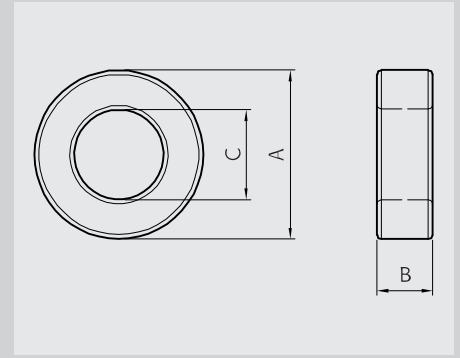
High Permeability Materials

Materials			SM-50	SM-60	SM-70S	SM-100	SM-150
Initial permeability	μ_{iac}		5000±25%	6000±25%	7500±25%	10000±30%	15000±30%
Relative loss factor	$\tan \delta / \mu_{iac}$	$\times 10^{-6}$	< 10(f:100kHz)	< 10(f:100kHz)	< 20(f:100kHz)	< 3(f:10kHz)	< 5(f:10kHz)
Saturation flux density (1194A/m)	Bs	mT	440	430	430	410	360
Remanence	Br	mT	110	100	100	90	90
Coercivity	Hc	A/m	10	6	6	5	4.5
Relative temp. factor (20~60°C)	$\alpha_{\mu r}$	$\times 10^{-6}/^{\circ}\text{C}$	-0.15~1.0	-0.1~1.0	-0.1~1.0	-0.15~2.0	-0.5~2.0
Curie temperature	Tc	°C	> 150	> 130	> 130	> 120	> 100
Density	d	kg/m ³	4.85 × 10 ³	4.90 × 10 ³	4.90 × 10 ³	4.90 × 10 ³	4.90 × 10 ³
Resistivity	ρ	$\Omega \cdot \text{m}$	1	1	0.3	0.2	0.15

Note: 1) Typical values
 2) The values were obtained with toroidal cores(30×8-20H) at room temperature unless indicated otherwise.



OR CORES



Dimensions in mm

Part No.	A	B	C
OR19×11-13H	19.00 ±0.30	11.00 ±0.20	13.00 ±0.30
OR20×7-10H	20.00 ±0.40	7.00 ±0.30	10.00 ±0.30
OR20×7.25-10H	20.00 ±0.40	7.25 ±0.30	10.00 ±0.30
OR20×8-10H	20.00 ±0.40	8.00 ±0.30	10.00 ±0.30
OR20×10-10H	20.00 ±0.40	10.00 ±0.30	10.00 ±0.30
OR22×8-14H	22.00 ±0.40	8.00 ±0.35	14.00 ±0.35
OR22.1×6.35-13.7H	22.10 ±0.40	6.35 ±0.25	13.70 ±0.30
OR22.1×8-13.7H	22.10 ±0.40	8.00 ±0.25	13.70 ±0.30
OR22.1×11-13.7H	22.10 ±0.40	11.00 ±0.25	13.70 ±0.30
OR22.1×12.7-13.7H	22.10 ±0.40	12.75 ±0.25	13.70 ±0.30
OR25×6-15H	25.00 ±0.30	6.00 ±0.30	15.00 ±0.30
OR25×10-15H	25.00 ±0.30	10.00 ±0.30	15.00 ±0.30
OR25×12-15H	25.00 ±0.30	12.00 ±0.30	15.00 ±0.30
OR25×12.5-15H	25.00 ±0.30	12.00 ±0.30	15.00 ±0.30
OR25×12.7-15H	25.00 ±0.30	12.70 ±0.30	15.00 ±0.30
OR25×13-15H	25.00 ±0.30	13.00 ±0.30	15.00 ±0.30
OR25×15-15H	25.00 ±0.30	15.00 ±0.30	15.00 ±0.30
OR26×15-16H	26.00 ±0.40	15.00 ±0.30	16.00 ±0.30
OR28×13-16H	28.00 ±0.40	13.00 ±0.30	16.00 ±0.40
OR28×16-16H	28.00 ±0.40	16.00 ±0.30	16.00 ±0.40
OR29×7.5-19H	29.00 ±0.75	7.50 ±0.55	19.00 ±0.75
OR29×12.5-19HU	29.00 ±0.50	12.50 ±0.55	19.00 ±0.75
OR29×15-19H	29.00 ±0.50	15.00 ±0.55	19.00 ±0.75
OR29×15-19HU	29.00 ±0.50	15.00 ±0.55	19.00 ±0.75
OR29×15.2-19H	29.00 ±0.75	15.20 ±0.55	19.00 ±0.75
OR29×16-19H	29.00 ±0.75	16.00 ±0.55	19.00 ±0.75
OR31×13-19H	31.00 $\begin{smallmatrix} +0.50 \\ -0.70 \end{smallmatrix}$	13.00 ±0.40	19.00 ±0.50
OR31×17-19H	31.00 $\begin{smallmatrix} +0.50 \\ -0.70 \end{smallmatrix}$	17.00 ±0.40	19.00 ±0.50

Core Set Parameters

C1(mm ⁻¹)	Le(mm)	Ae(mm ²)	Ve(mm ³)	Aw(mm ²)	W(g)
1.510	49.1	32.6	1600	132.7	8.3
1.290	43.6	33.6	1465	78.5	7.6
1.250	43.6	34.8	1517	78.5	7.9
1.130	43.6	38.4	1674	78.5	8.7
0.910	43.6	48.1	2092	78.5	10.9
1.740	54.7	31.5	1720	153.9	8.9
2.070	54.2	26.2	1417	147.3	7.4
1.640	54.2	33.0	1785	147.3	9.3
1.190	54.2	45.3	2454	147.3	13
1.030	54.2	52.5	2845	147.3	15
2.050	60.2	29.4	1767	176.6	9
1.230	60.2	48.9	2944	176.6	15
1.030	60.2	58.7	3533	176.6	18
0.980	60.2	61.2	3681	176.6	19
0.970	60.2	62.1	3739	176.6	19
0.950	60.2	63.6	3828	176.6	20
0.820	60.2	73.4	4417	176.6	23
0.860	63.5	73.5	4666	201.0	24
0.860	65.6	76.0	4988	201.0	26
0.700	65.6	93.5	6139	201.0	32
1.980	73.2	37.0	2704	283.4	14
1.190	73.2	61.6	4507	283.4	22
0.990	73.2	73.9	5409	283.4	28
0.990	73.2	73.9	5409	283.4	28
0.980	73.2	74.9	5481	283.4	29
0.930	73.2	78.8	5769	283.4	30
0.990	75.5	76.5	5772	283.4	30
0.760	75.5	100.0	7550	283.4	39

Note : 1) Core loss

- Unit : Watt max.
- Measuring conditions
 PL-7, PL-11 : 100 kHz, 200 mT, at 100°C
 PL-9 : 100 kHz, 200 mT, at 80°C

2) AL value

- Unit : nH/N²
- Measuring conditions : 1 kHz, 0.1 V, 10Ts, 23°C
- Tolerance: ±25% (SM-100 : ±30%)

3) Coating

- Toroid cores can be coated with epoxy or parylene.
- Isolation voltage : epoxy - DC 1000 V min., parylene - DC 750 V min.

Part No.	Electrical Characteristics											Core loss		
	AL value											PL-7	PL-9	PL-11
	PL-7	PL-9	PL-11	SM-8T	SM-23T	SM-43T	SM-50	SM-60	SM-70S	SM-100				
OR19×11-13H	2000	2500	2100	670	1900	3600	4200	5000	6200	8300	0.80	0.72	0.72	
OR20×7-10H	2300	2900	2400	780	2200	4200	4900	5800	7300	9700	0.73	0.66	0.66	
OR20×7.25-10H	2400	3000	2500	800	2300	4300	5000	6000	7500	10100	0.76	0.68	0.68	
OR20×8-10H	2700	3300	2800	890	2600	4800	5600	6700	8300	11100	0.84	0.75	0.75	
OR20×10-10H	3300	4200	3500	1110	3200	5900	6900	8300	10400	13800	1.05	0.94	0.94	
OR22×8-14H	1700	2200	1800	580	1700	3100	3600	4300	5400	7200	0.86	0.77	0.77	
OR22.1×6.35-13.7H	1500	1800	1500	490	1400	2600	3000	3600	4600	6100	0.71	0.64	0.64	
OR22.1×8-13.7H	1800	2300	1900	610	1800	3300	3800	4600	5700	7700	0.89	0.80	0.80	
OR22.1×11-13.7H	2500	3200	2600	850	2400	4500	5300	6300	7900	10600	1.23	1.11	1.11	
OR22.1×12.7-13.7H	2900	3700	3100	980	2800	5200	6100	7300	9200	12200	1.42	1.28	1.28	
OR25×6-15H	1500	1800	1500	490	1400	2600	3100	3700	4600	6100	0.88	0.80	0.80	
OR25×10-15H	2500	3100	2600	820	2400	4400	5100	6100	7700	10200	1.47	1.33	1.33	
OR25×12-15H	2900	3700	3100	980	2800	5200	6100	7300	9200	12200	1.77	1.59	1.59	
OR25×12.5-15H	3100	3800	3200	1030	2900	5500	6400	7700	9000	12800	1.84	1.66	1.66	
OR25×12.7-15H	3100	3900	3200	1040	3000	5600	6500	7800	9700	13000	1.87	1.68	1.68	
OR25×13-15H	3200	4000	3300	1060	3100	5700	6600	7900	9900	13200	1.91	1.72	1.72	
OR25×15-15H	3700	4600	3800	1230	3500	6600	7700	9200	11500	15300	2.21	1.99	1.99	
OR26×15-16H	3500	4400	3700	1170	3400	6300	7300	8800	11000	14600	2.33	2.10	2.10	
OR28×13-16H	3500	4400	3700	1170	3300	6300	7300	8800	11000	14600	2.49	2.25	2.25	
OR28×16-16H	4300	5400	4500	1440	4100	7700	9000	10800	13500	18000	3.07	2.76	2.76	
OR29×7.5-19H	1500	1900	1600	510	1500	2700	3200	3800	4800	6300	1.35	1.22	1.22	
OR29×12.5-19HU	2500	3200	2600	850	2400	4500	5300	6300	7900	10600	2.30	2.07	2.07	
OR29×15-19H	3000	3800	3200	1020	2900	5500	6300	7600	9500	12700	2.70	2.43	2.43	
OR29×15-19HU	3000	3800	3200	1020	2900	5500	6300	7600	9500	12700	2.76	2.49	2.49	
OR29×15.2-19H	3100	3900	3200	1030	3000	5500	6400	7700	9600	12800	2.74	2.47	2.47	
OR29×16-19H	3200	4100	3400	1080	3100	5800	6800	8100	10100	13500	2.88	2.60	2.60	
OR31×13-19H	3000	3800	3200	1020	2900	5500	6300	7600	9500	12700	2.89	2.60	2.60	
OR31×17-19H	4000	5000	4100	1320	3800	7100	8300	9900	12400	16500	3.85	3.47	3.47	