

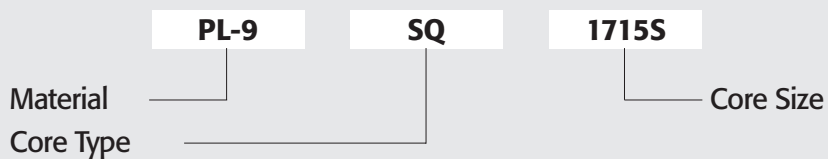
SQ, SQE, UU CORES

SQ17~SQ40

SQE20~SQE35

UU09~UU25

Ordering Code System



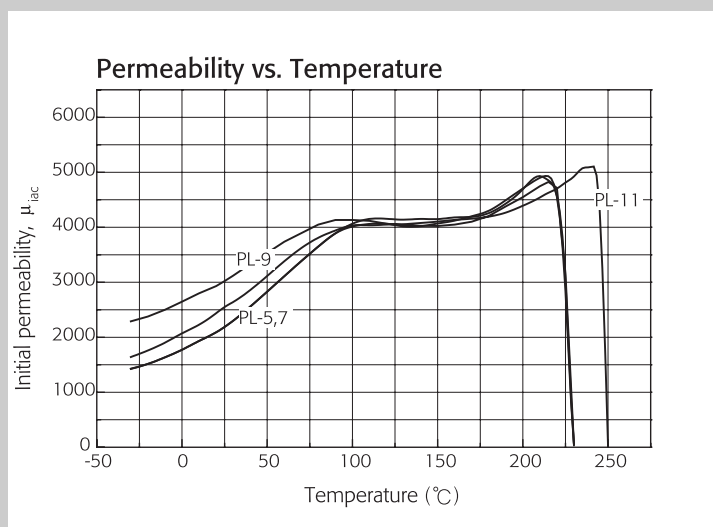
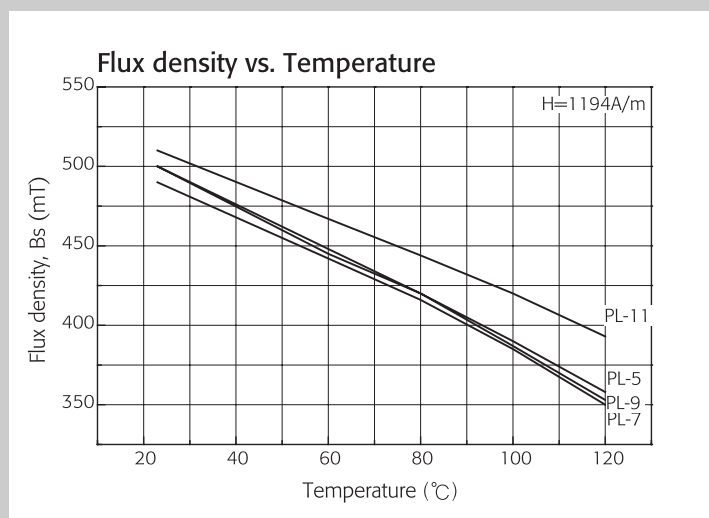
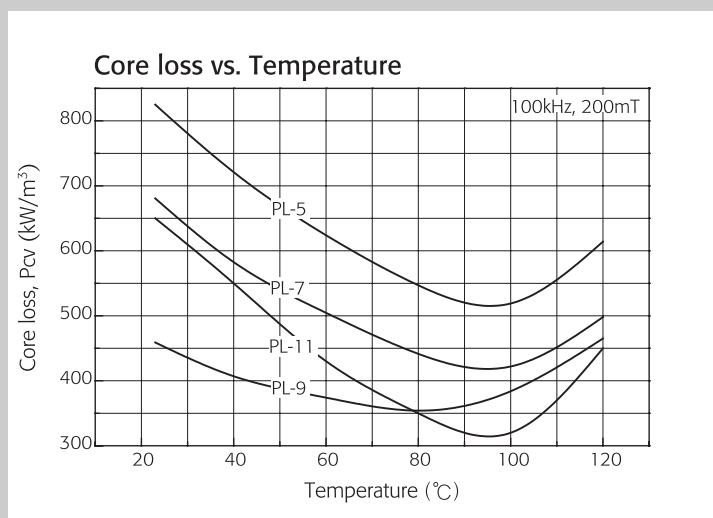
MATERIAL CHARACTERISTICS

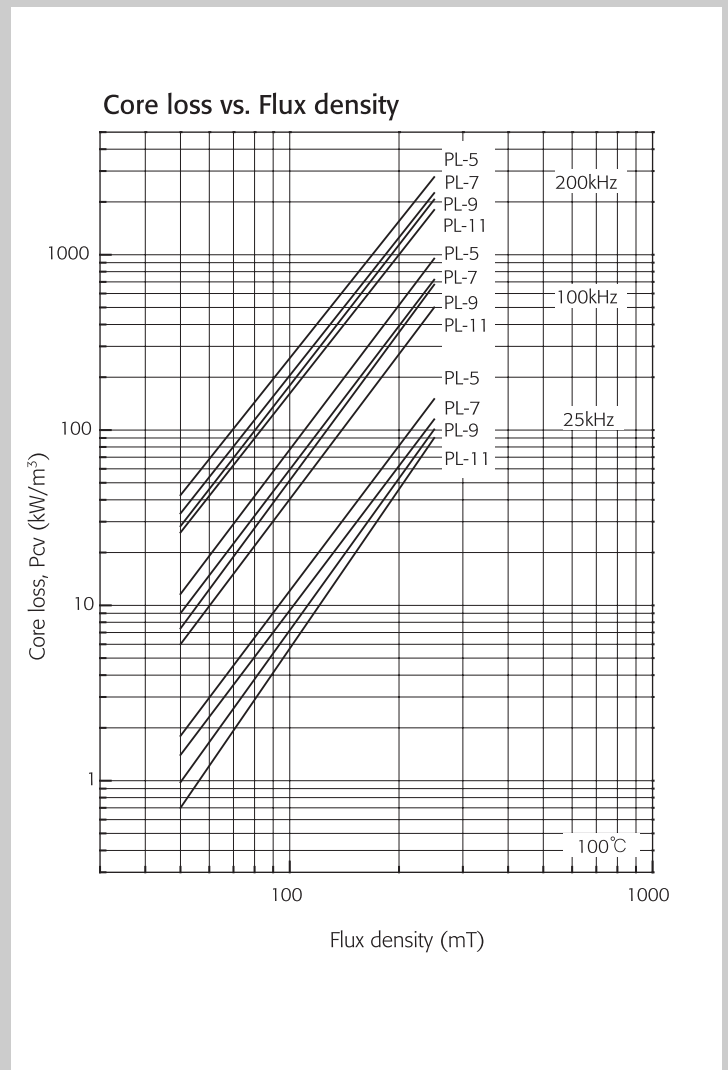
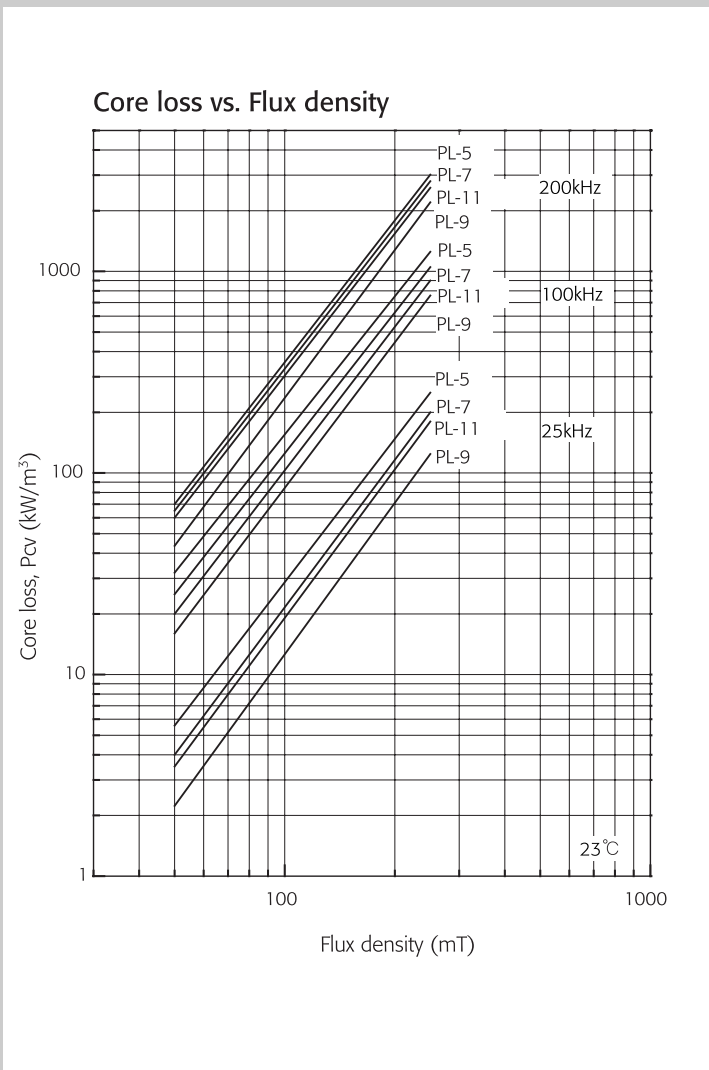
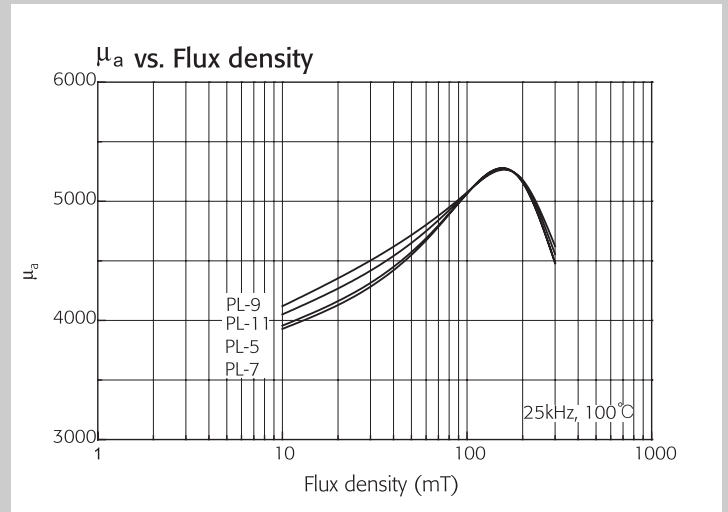
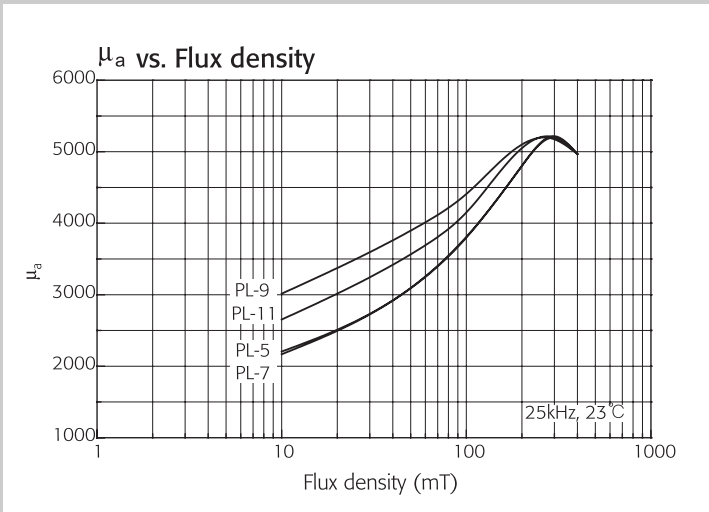
Power Materials

Materials			PL-5	PL-7	PL-9	PL-11	
Initial permeability	μ_{iac}		$2400 \pm 25\%$	$2400 \pm 25\%$	$3000 \pm 25\%$	$2500 \pm 25\%$	
Core loss (100kHz, 200mT)	P_{cv}	kW/m^3	23°C	800	650	450	650
			80°C	550	450	350	350
			100°C	500	410	390	320
Saturation flux density (1194A/m)	B_s	mT	23°C	500	490	500	510
			100°C	390	380	380	420
Remanence	B_r	mT	23°C	180	150	150	130
Coercivity	H_c	A/m	23°C	15	12	10	10
Curie temperature	T_c	°C	> 220	> 220	> 220	> 220	
Density	d	kg/m^3	4.85×10^3	4.85×10^3	4.85×10^3	4.85×10^3	
Resistivity	ρ	$\Omega \cdot \text{m}$	6	5	7	5	

Note: 1) Typical values

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

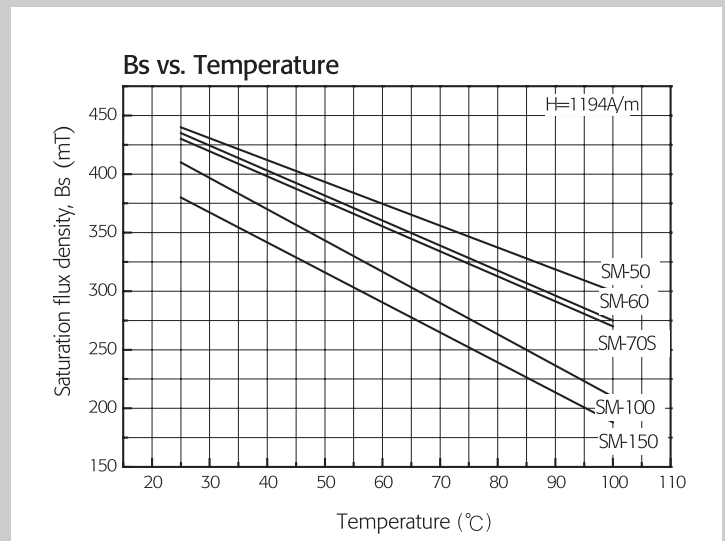
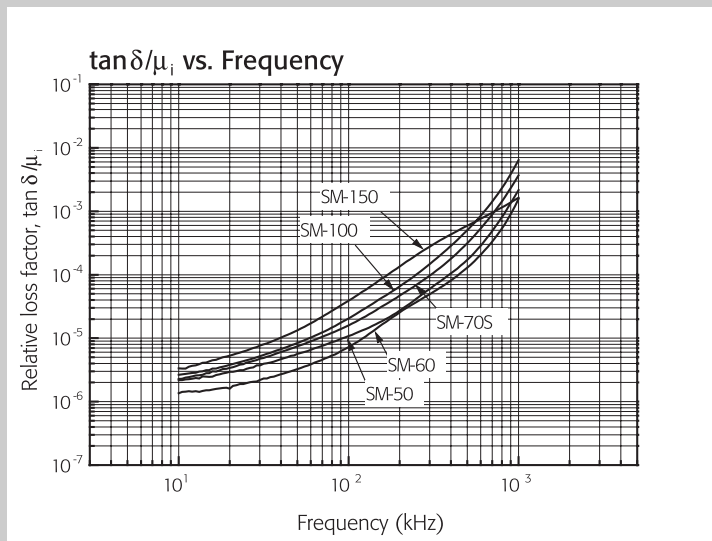
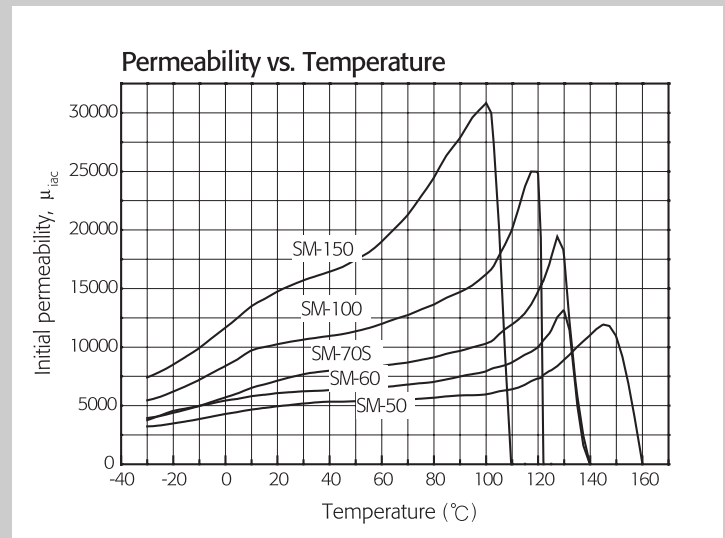
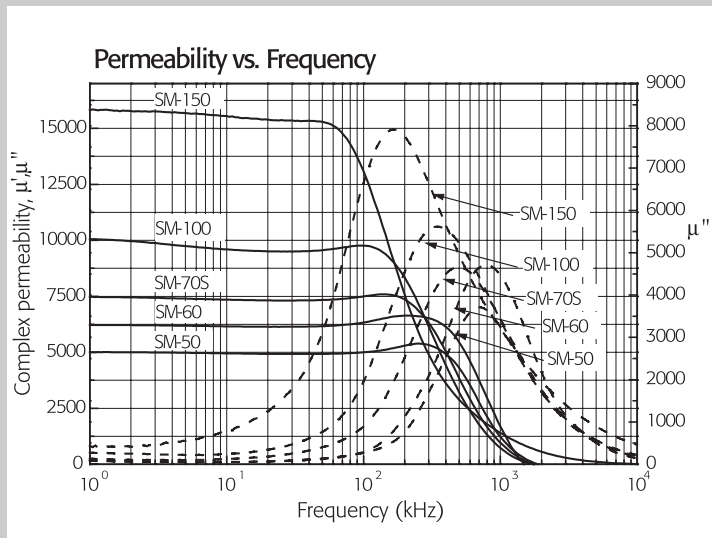




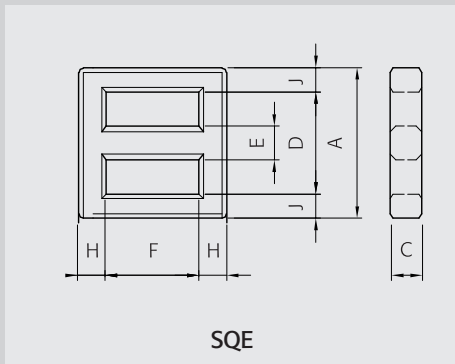
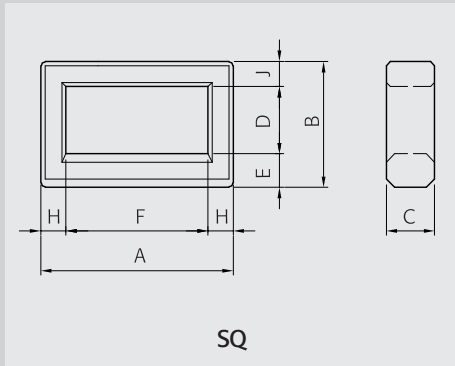
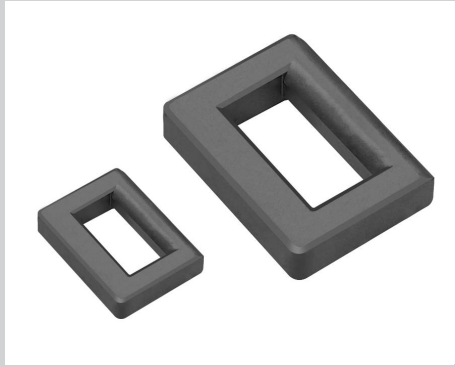
High Permeability Materials

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.



SQ, SQE CORES



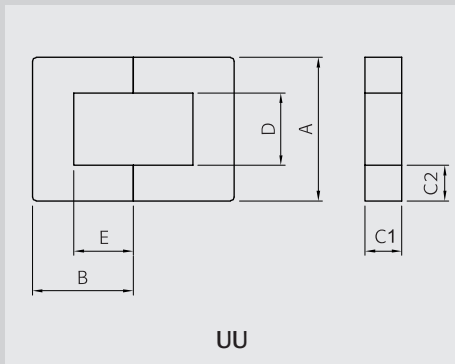
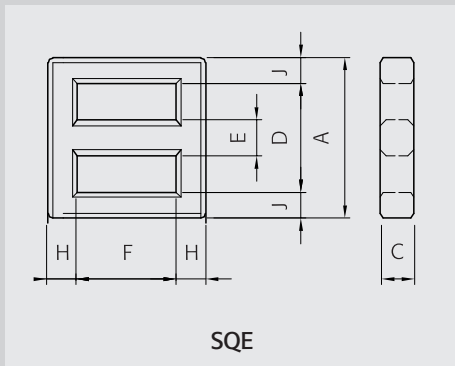
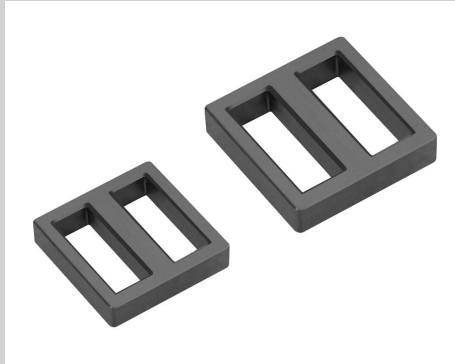
Part No.		SQ1715S	SQ19.5×13.8	SQ2014S	SQ2115S	
Type		SQ	SQ	SQ	SQ	
Dimensions in mm	A	17.60 ±0.20	19.50 ±0.30	20.60 ±0.30	21.50 ±0.30	
	B	15.00 ±0.20	14.20 ±0.60	14.10 ±0.25	14.90 ±0.25	
	C	3.60 ±0.20	5.00 ±0.20	4.60 ±0.20	3.70 ±0.15	
	D	4.55 ±0.20	6.80 min.	7.25 min.	6.65 min.	
	E	3.75 ±0.15	4.00 ±0.20	4.20 ±0.20	4.30 ±0.15	
	F		12.90 min.	15.70 min.	15.40 min.	
	H	3.00 ±0.15	3.20 ±0.20	2.30 ±0.15	2.90 ±0.15	
	J		3.20 ±0.20	2.40 ±0.15	3.70 ±0.15	
Core Set Parameters	C1(mm ³)	3.220	3.030	4.410	4.350	
	Le(mm)	45.8	50.6	53.1	55.1	
	Ae(mm ²)	14.2	16.7	12.0	12.6	
	Ve(mm ³)	651	846	639	698	
	Ac(mm ²)					
	Aw(mm ²)	52.8	91.7	120.0	108.0	
	W(g/set)	3.2	4.3	3.7	3.6	
Electrical Characteristics ¹⁾	AL value	SM-50	1950	2050	1400	1430
		SM-60	2340	2490	1710	1730
		SM-70S	2930	3050	2100	2150
		SM-100	3900	4100	2800	2870

Note : 1) AL value

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

	SQ2116S	SQ2215S	SQ2618S	SQ4030S	SQE2020S	SQE2215S	SQE2222S	SQE2424S	SQE2626S	
	SQ	SQ	SQ	SQ	SQE	SQE	SQE	SQE	SQE	
A	21.50 ±0.20	21.50 ±0.30	25.80 ±0.40	40.70 ±0.40	20.10 ±0.40	21.50 ±0.30	23.50 ±0.30	24.20 ±0.50	26.00 $\begin{smallmatrix} +0.40 \\ -0.20 \end{smallmatrix}$	
B	15.80 ±0.25	14.90 ±0.25	17.70 ±0.30	30.80 ±0.40	20.10 ±0.40	14.90 ±0.20	22.00 ±0.30	24.20 ±0.30	26.00 $\begin{smallmatrix} +0.40 \\ -0.20 \end{smallmatrix}$	
C	4.60 $\begin{smallmatrix} +0 \\ -0.20 \end{smallmatrix}$	4.50 ±0.20	4.40 ±0.20	8.70 ±0.30	4.40 ±0.20	4.50 ±0.20	3.80 ±0.20	4.00 ±0.30	4.50 $\begin{smallmatrix} +0.10 \\ -0.20 \end{smallmatrix}$	
D	7.00 ±0.20	7.60 min.	9.60 min.	13.10 min.	15.70 min.	7.60 min.	19.40 ±0.20	19.00 min.	21.00 $\begin{smallmatrix} +0.30 \\ -0.20 \end{smallmatrix}$	
E	4.40 ±0.20	4.20 ±0.20	4.40 ±0.20	8.70 ±0.30	4.00 ±0.20	4.20 ±0.20	3.80 ±0.20	4.00 ±0.30	4.50 ±0.20	
F	15.30 ±0.20	15.90 min.	18.70 min.	26.60 min.	15.70 min.	15.90 min.	17.60 ±0.20	19.00 min.	21.00 $\begin{smallmatrix} +0.30 \\ -0.20 \end{smallmatrix}$	
H	3.10 ±0.15	2.65 ±0.15	3.30 ±0.20	6.90 ±0.20	2.00 ±0.20	2.65 ±0.15	2.20 ±0.15	2.40 ±0.15	2.50 ±0.15	
J		2.80 ±0.20	3.40 ±0.20	8.60 ±0.25	2.00 ±0.20	2.80	2.05 ±0.15	2.40 ±0.15	2.50 ±0.15	
CI(mm ³)	2.780	4.190	4.250	1.557	2.930	4.160	3.700	3.460	3.120	
Le(mm)	55.0	56.2	81.0	104.0	50.5	56.1	57.2	60.8	66.0	
Ae(mm ²)	19.8	13.4	19.1	67.1	17.2	13.5	15.5	17.5	21.1	
Ve(mm ³)	1088	754	1545	7010	871	757	884	1060	1395	
Ac(mm ²)					17.6	18.9	14.4	16.0	20.3	
AW(mm ²)	107.1	127.0	179.5	363.0	97.4	31.0	144.0	149.0	173.3	
W(g/set)	4.8	4.1	5.2	36	4.3	4.2	4.3	5.4	6.8	
Al value	SM-50	2260	1450	1480	3950	2150	1510	1700	1800	2010
	SM-60	2710	1800	1770	4840	2570	1810	2040	2180	2420
	SM-70S	3390	2200	2220	5800	3200	2270	2550	2700	3020
	SM-100	4520	2900	2960	7900	4300	3020	3400	3600	4030

SQE, UU CORES



Part No.		SQE2828S	SQE2930S	SQE3535N	UU0913S	
Type		SQE	SQE	SQE	UU	
Dimensions in mm	A	28.45 ±0.55	29.00 ±0.40	35.30 ±0.60	8.50 ±0.15	
	B	28.45 ±0.55	30.00 ±0.40	35.30 ±0.60	6.35 ±0.10	
	C (C1)	5.00 ±0.30	5.00 ±0.30	7.50 ±0.30	3.45 ^{+0.10} _{-0.15}	
	C2				2.28 ref.	
	D	22.00 min.	22.60 min.	26.80 min.	3.95 ±0.15	
	E	5.00 ±0.20	5.00 ±0.25	7.50 ±0.30	4.10 ±0.10	
	F	22.20 min.	23.60 min.	26.80 min.		
	H	2.90 ±0.15	3.00 ±0.20	4.00 ±0.20		
	J	2.90 ±0.15	4.00 ±0.20	4.00 ±0.20		
Core Set Parameters	C1(mm ³)	2.670	2.700	1.494	4.050	
	Le(mm)	71.1	74.3	86.6	31.4	
	Ae(mm ²)	26.6	27.5	57.9	7.8	
	Ve(mm ²)	1890	2050	5020	243	
	Ac(mm ²)	25.0	25.0	56.2		
	Aw(mm ²)	199.0	216.0	270.0	32.3	
	W(g/set)	9.6	10	25	1.2	
Electrical Characteristics ⁽¹⁾⁽²⁾	AL value	PL-7			560	
		PL-9			650	
		PL-11			580	
		SM-50	2350	2350	4200	900
		SM-60	2820	2790	5050	1080
		SM-70S	3600	3500	6300	1110
		SM-100	4700	4650	8400	1620
	Core loss	PL-7				0.13
		PL-9				0.12
		PL-11				0.12

Note : 1) Core loss

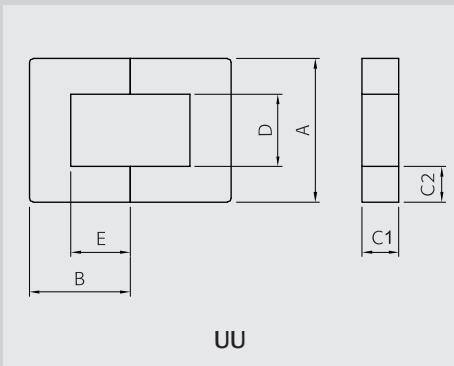
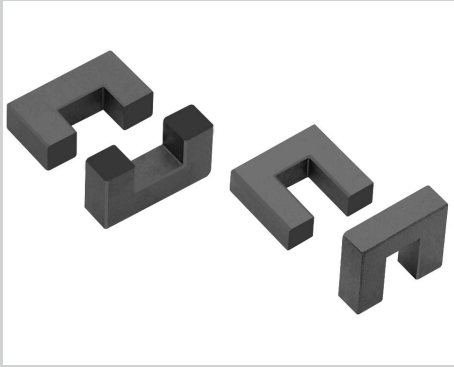
- Unit : Watt max.
- Measuring conditions
- PL-7, PL-11 : 100 kHz, 200 mT, at 100°C
- PL-9 : 100 kHz, 200 mT, at 80°C

2) AL value

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

	UU1014S	UU1015S	UU1116S	UU1320S	UU1411S	UU1420S	UU1522S	UU1523N	UU1620S	
	UU	UU	UU	UU	UU	UU	UU	UU	UU	
A	9.80 ±0.20	10.15 ±0.20	10.50 ±0.30	13.50 ±0.30	14.00 $^{+0}_{-0.50}$	14.00 $^{+0}_{-0.50}$	15.20 ±0.30	15.20 ±0.30	16.00 ±0.30	
B	7.10 ±0.10	7.40 ±0.20	7.90 ±0.20	9.90 $^{+0}_{-0.30}$	5.50 $^{+0.10}_{-0}$	9.55 ±0.20	11.20 ±0.25	11.40 ±0.20	10.00 ±0.20	
C1	2.70 ±0.20	2.90 $^{+0.10}_{-0.15}$	5.00 ±0.30	5.00 $^{+0}_{-0.40}$	8.00 $^{+0}_{-0.50}$	8.00 $^{+0}_{-0.50}$	6.70 $^{+0}_{-0.50}$	6.40 $^{+0}_{-0.20}$	6.00 ±0.15	
C2	2.80 ±0.10	2.90 ±0.10	2.50 ±0.20	3.50 $^{+0}_{-0.25}$	4.00 $^{+0}_{-0.50}$	4.00 $^{+0}_{-0.50}$	5.00 ref.	5.00 ±0.20	4.50 ref.	
D	4.20 ±0.20	4.15 min.	6.50 ±0.30	6.50 $^{+0.50}_{-0}$	6.25 min.	5.60 min.	5.20 ±0.30	5.20 ±0.30	6.70 min.	
E	4.20 ±0.20	4.20 $^{+0.35}_{-0}$	5.40 ±0.20	6.10 $^{+0.30}_{-0}$	1.80 $^{+0.10}_{-0}$	5.60 min.	5.70 $^{+0.70}_{-0}$	6.40 ±0.20	6.00 ±0.15	
F										
H										
J										
C1(mm ³)	4.460	4.190	3.240	3.010	1.100	1.630	1.551	1.616	1.996	
Le(mm)	34.1	35.5	40.5	49.2	31.6	47.5	50.5	51.7	51.2	
Ae(mm ²)	7.7	8.5	12.4	16.3	28.7	29.1	32.5	31.9	25.6	
Ve(mm ³)	261	300	505	803	907	1380	1640	1650	1310	
Ac(mm ²)										
Aw(mm ²)	35.2	38.0	59.4	84.3	23.2	67.3	62.9	66.5	84.0	
W(g/set)	1.3	1.5	2.5	4.0	4.4	6.7	8.5	8.6	6.7	
AL value	PL-7	500	515	720	800	2000	1300	1400	1360	1100
	PL-9	560	600	830	950	2500	1700	1620	1600	1270
	PL-11	520	540	750	830	2100	1400	1500	1400	1100
	SM-50	1010	830	1250	1400	3800	2600	2700	2600	2150
	SM-60	1212	996	1500	1680	4600	3100	3240	3120	2580
	SM-70S	1180	1020	1550	1750	5700	3900	3500	3400	2770
	SM-100	1460	1500	2250	2350	7600	5100	4570	4450	3600
Core loss	PL-7	0.14	0.15	0.26	0.40	0.46	0.70	0.83	0.83	0.66
	PL-9	0.11	0.13	0.21	0.33	0.42	0.63	0.68	0.68	0.55
	PL-11	0.11	0.13	0.21	0.33	0.42	0.63	0.68	0.68	0.55

UU CORES



Part No.		UU1622S	UU1733S	UU2027S	UU2036S
Type		UU	UU	UU	UU
Dimensions in mm	A	16.00 ±0.30	17.00 ±0.30	20.50 ±0.30	20.00 ±0.30
	B	11.00 ±0.20	16.60 ±0.20	13.50 $^{+0.50}_{-0}$	18.10 ±0.20
	C1	6.00 ±0.15	6.00 ±0.10	11.00 ±0.25	6.00 ±0.20
	C2	4.50 ref.	4.50 ref.	5.00 ±0.15	6.00 ref.
	D	6.70 min.	8.00 ±0.20	10.50 ±0.30	8.00 ±0.25
E	7.00 ±0.15	12.00 ±0.20	8.50 $^{+0.50}_{-0}$	12.10 ±0.20	

Core Set Parameters		UU1622S	UU1733S	UU2027S	UU2036S
C1(mm ³)		2.140	2.910	1.270	2.310
Le(mm)		55.2	78.3	71.0	83.2
Ae(mm ²)		25.7	26.9	55.8	36.0
Ve(mm ³)		1420	2100	3962	2990
Aw(mm ²)		98.0	192.0	178.5	193.0
W(g/set)		7.3	10	21	15

Electrical Characteristics ⁽¹⁾⁽²⁾		AL value	PL-7	UU1622S	UU1733S	UU2027S	UU2036S
			PL-9	1200	880	2060	1160
Core loss	PL-11	PL-11	1100	800	1800	1000	
		SM-50	2100	1600	3650	2100	
		SM-60	2520	1920	4380	2520	
		SM-70S	2700	2150	5475	2750	
		SM-100	3500	2600	7300	3300	
		PL-7	0.72	1.06	2.02	1.50	
		PL-9	0.59	0.87	1.82	1.23	
PL-11	0.59	0.87	1.82	1.23			

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, 100Ts, at 23°C
- Tolerance: ±25% (SM-100 Mirror-grind : ±30%)

	UU2132S	UU2323S	UU2528S	UU2537S
	UU	UU	UU	UU
A	20.80 ±0.60	23.00 ±0.50	25.00 ±0.40	24.50 ±0.70
B	15.80 $\begin{smallmatrix} +0.40 \\ -0.30 \end{smallmatrix}$	11.40 ±0.20	14.00 ±0.20	18.40 ±0.50
C1	7.70 $\begin{smallmatrix} +0 \\ -0.50 \end{smallmatrix}$	6.40 ±0.20	7.00 ±0.30	7.30 ±0.30
C2	7.25 ref.	5.00 ±0.20	7.00 ±0.20	7.30 ref.
D	6.00 $\begin{smallmatrix} +0.60 \\ -0 \end{smallmatrix}$	13.00 ±0.30	11.00 ±0.40	9.90 ±0.30
E	8.00 $\begin{smallmatrix} +0.60 \\ -0 \end{smallmatrix}$	6.40 ±0.20	7.00 ±0.30	10.85 ±0.25

C1(mm ⁻¹)	1.270	1.366	1.469	1.510
Le(mm)	68.6	43.9	72.0	84.4
Ae(mm ²)	54.0	32.1	49.0	55.8
Ve(mm ³)	3700	1411	3520	4709
AW(mm ²)	104.0	166.4	154.0	214.8
W(g/set)	19	166	18	26

AL value	PL-7	1760	1600	1530	1500
	PL-9	2060	2000	1800	1900
	PL-11	1800	1700	1600	1600
	SM-50	3650	3400	3150	3100
	SM-60	4380	4100	3780	3200
	SM-70S	4700	5100	4200	3700
	SM-100	5880	6800	5100	3800
Core loss	PL-7	2.23	0.72	1.77	2.40
	PL-9	1.52	0.65	1.45	2.17
	PL-11	1.52	0.65	1.45	2.17