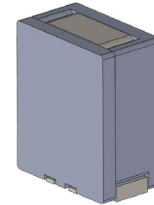
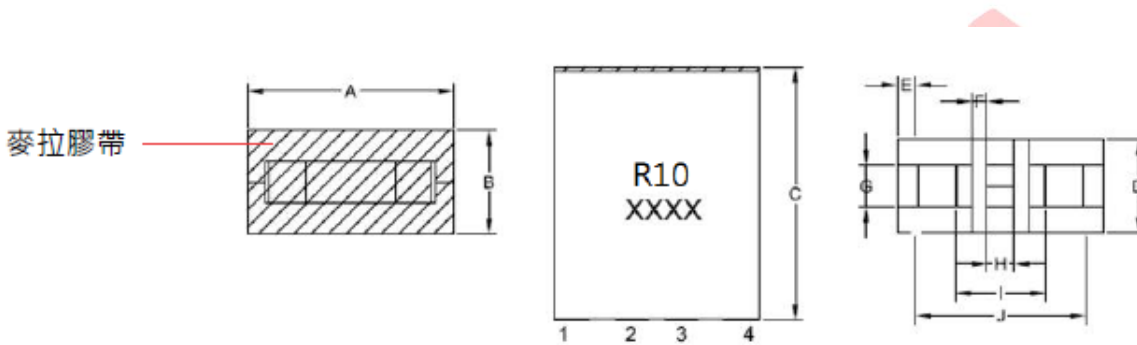


TLVR Power Inductor



<b>APPLICATIONS</b>	VR 14 power supply system Fast multi-phase trans inductor voltage regulator					
<b>PRODUCT IDENTIFICATION</b>	<b>FRPE</b> (1)	<b>100512</b> (2)	<b>A</b> (3)	- <b>R15</b> (4)	<b>L</b> (5)	(1) PRODUCT NAME (2) DIMENSION (3) TYPE CODE (4) INDUCTOR CODE (5) INDUCTOR TOLERANCE CODE

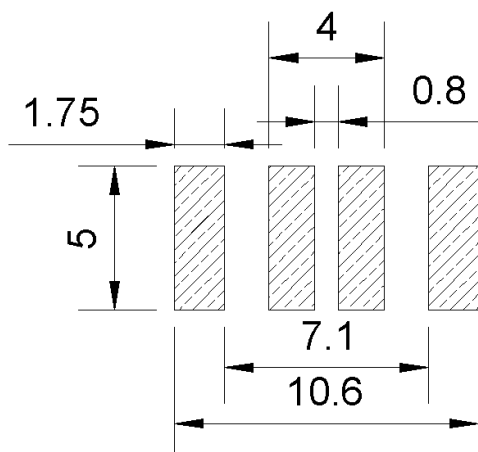
**CONFIGURATIONS & DIMENSIONS** (unit in mm)



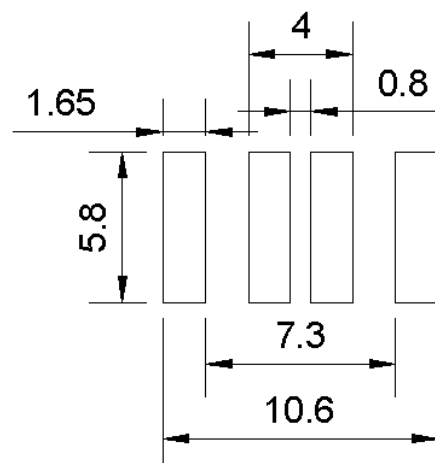
Type	A/mm	B/mm	C/mm	D/mm	E/mm
FRPE100512A	10.0max	5.0max	12.0max	4.5±0.3	0.9±0.3
	F/mm	G/mm	H/mm	I/mm	J/mm
	0.73	2.0	1.3	4.4	7.8

**Recommended Soldering Condition** (unit in mm)

**Suggested PWB Layout**



**Suggested Stencil**



TLVR Power Inductor

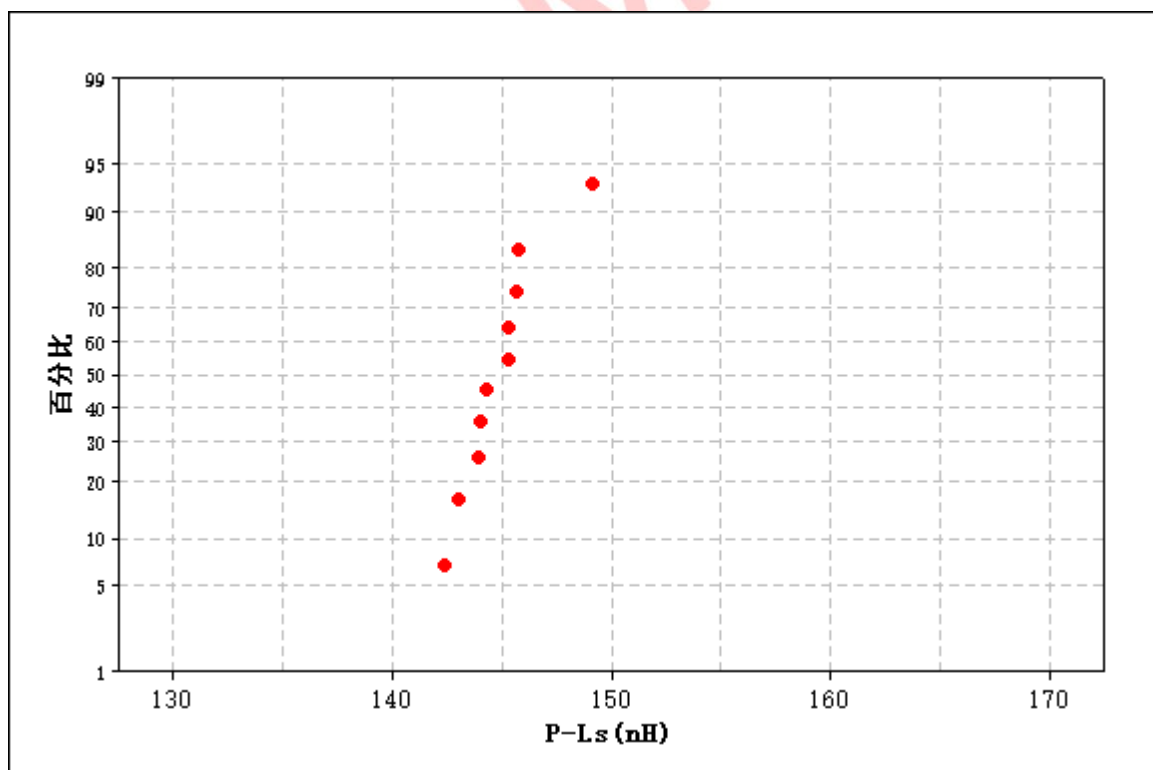
Part Number	P-Ls	RDC(P)	RDC(S)	P-I RMS (Typ.)	S-I RMS (Typ.)
FRPE100512A-R15L	150nH± 15%	0.15 m Ω± 10%	0.56 m Ω± 10%	70 A	36 A
	P-I SAT (Typ.)	P-I SAT (Typ.)	P-I SAT (Typ.)	L@ P-I SAT Min	
	25°C	100°C	125°C		
	78A	73A	68A	108nH	

ELECTRICAL CHARACTERISTICS FOR FRPE 100512A-R10L SERIES

Operating Temperature Range : -40°C to + 125 °C (Including self-temperature rise)

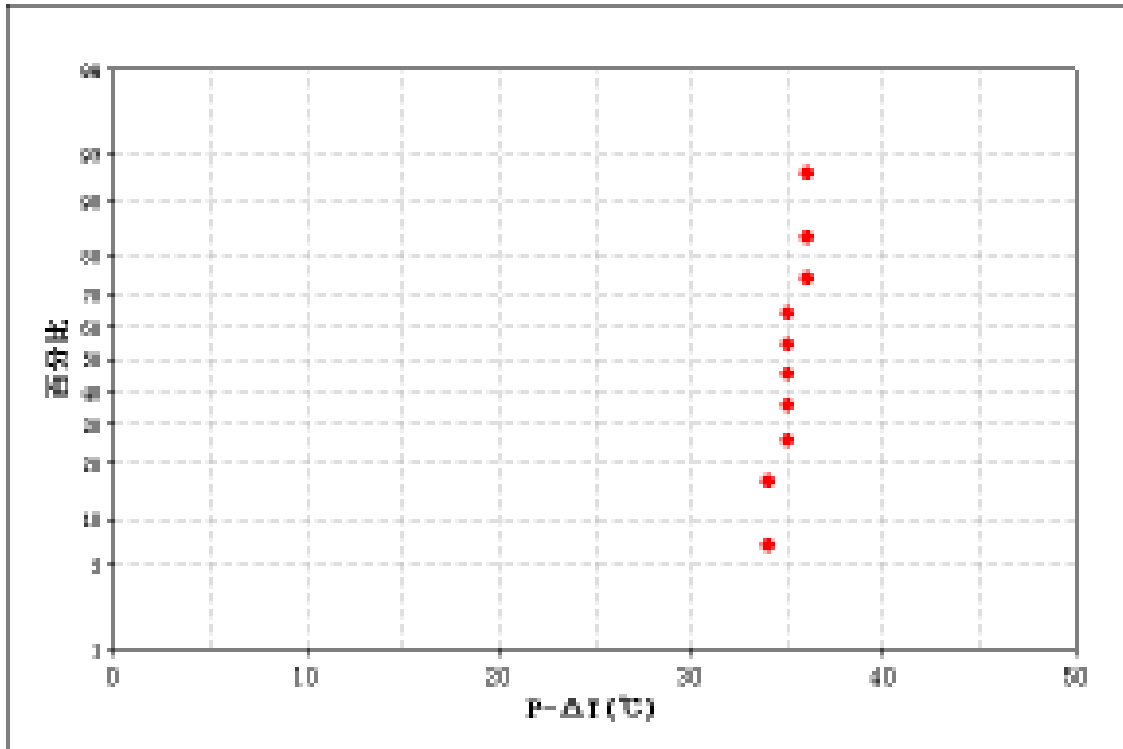
Storage Temperature Range : Store this product under the condition of -40°C to 85°C, 20% to 75 %RH and use within 6 months.

Test Data (Ls 、 Irms 、 RDC 、 Isat)



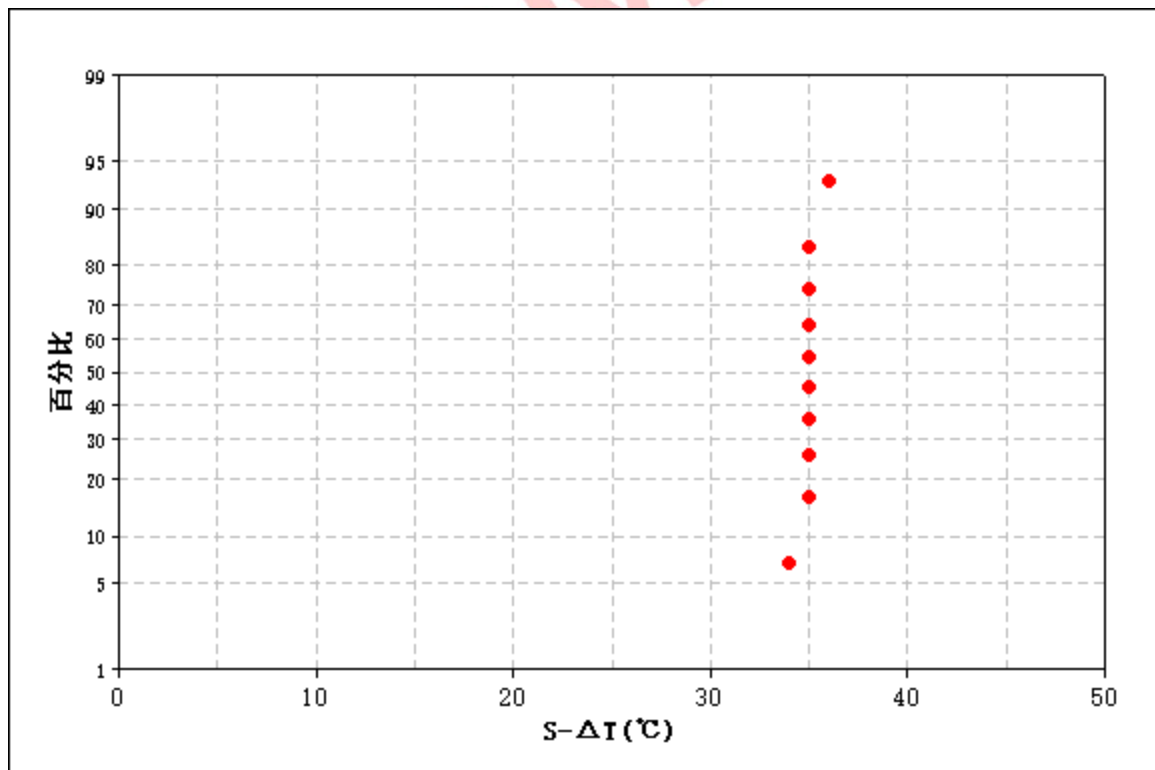
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-Ls(nH)	145.3	143.9	144.3	143.0	145.8	142.4	145.3	149.1	145.7	144

Note : 150nH±15%@100kHz,1.0V



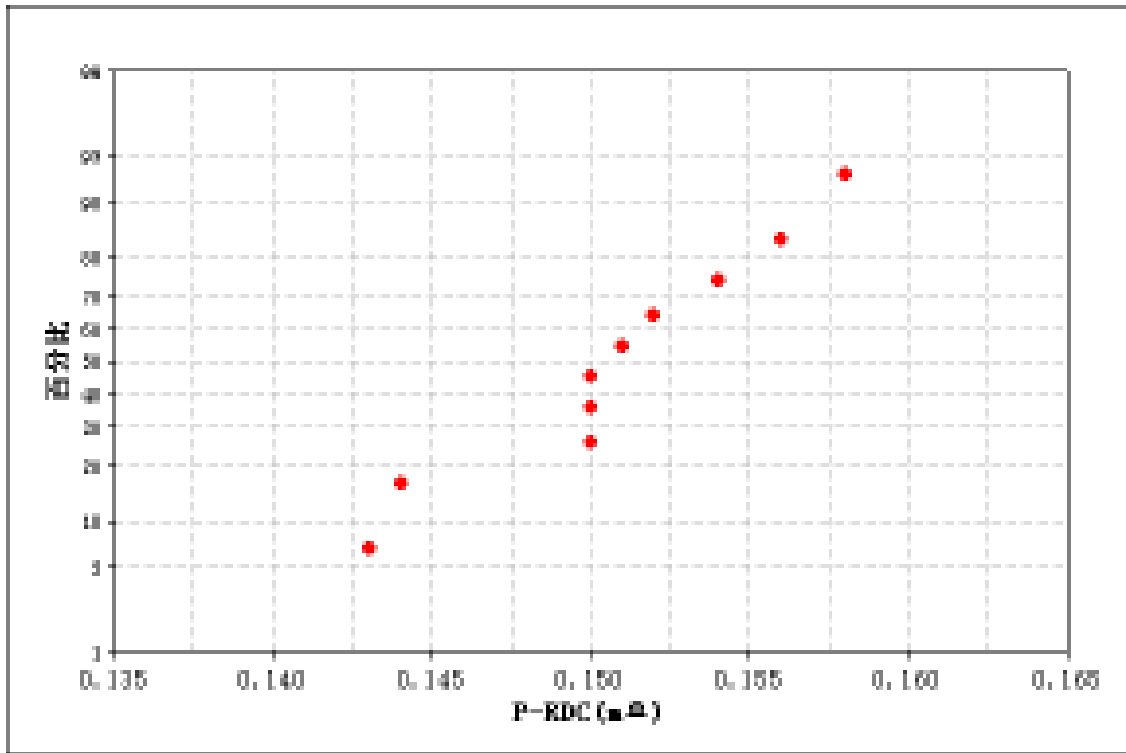
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-ΔT(°C)	35	35	36	35	36	36	34	35	35	34

Note :  $\Delta$  T40 °C@ P-IRMS-70A



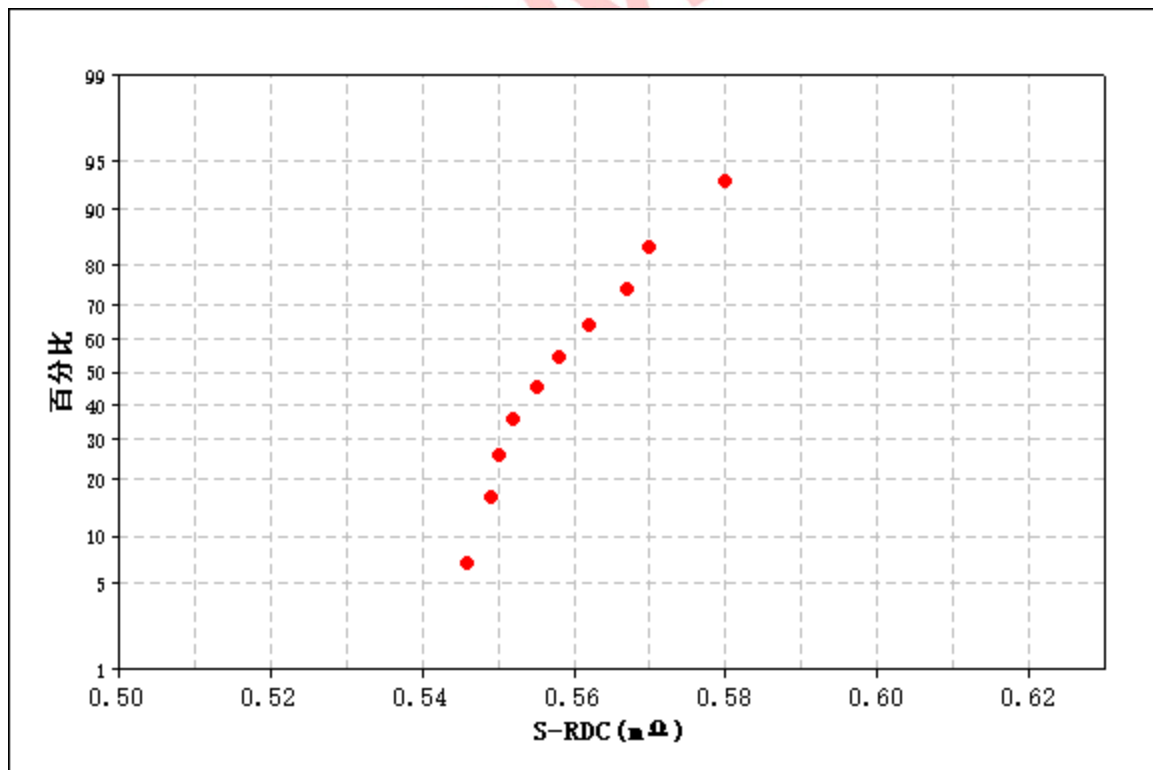
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
S-ΔT(°C)	36	35	36	34	33	35	35	36	34	34

Note :  $\Delta$ T 40°C@ S-IRMS-36A



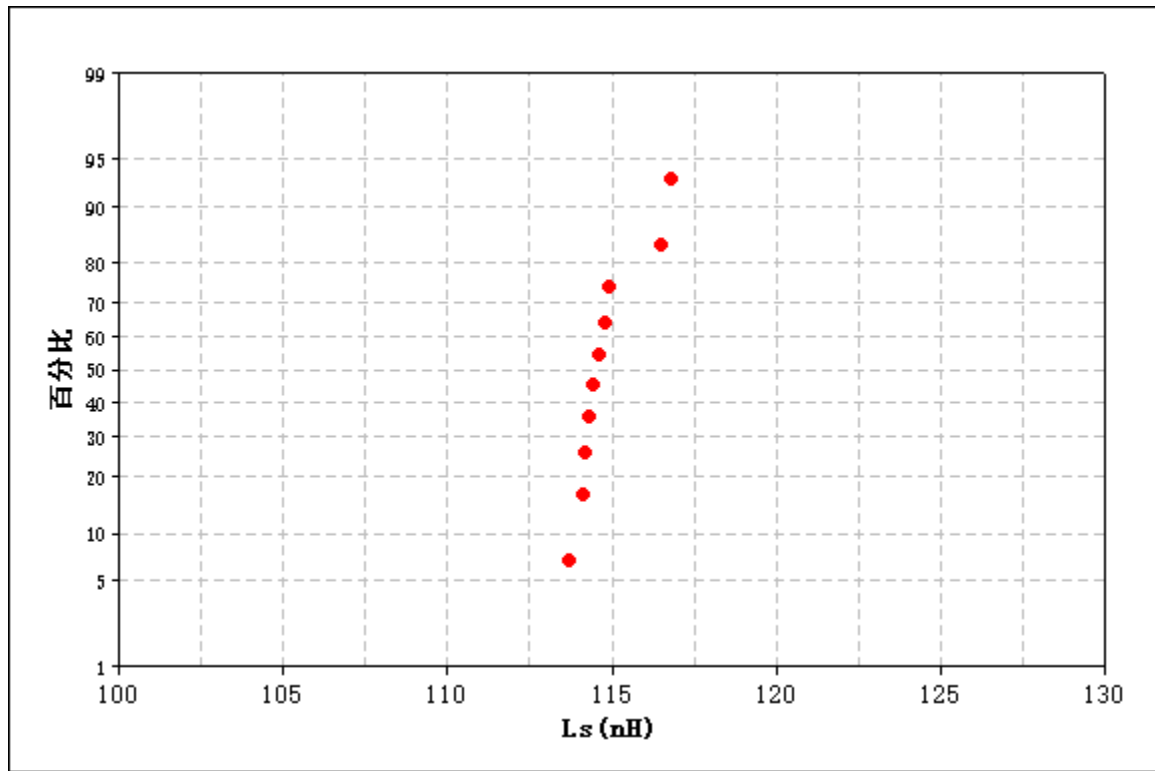
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-RDC(mΩ)	0.152	0.158	0.150	0.156	0.154	0.144	0.150	0.151	0.150	0.143

Note : DC Resistance(RDC)@25°C-0.15mΩ±10%



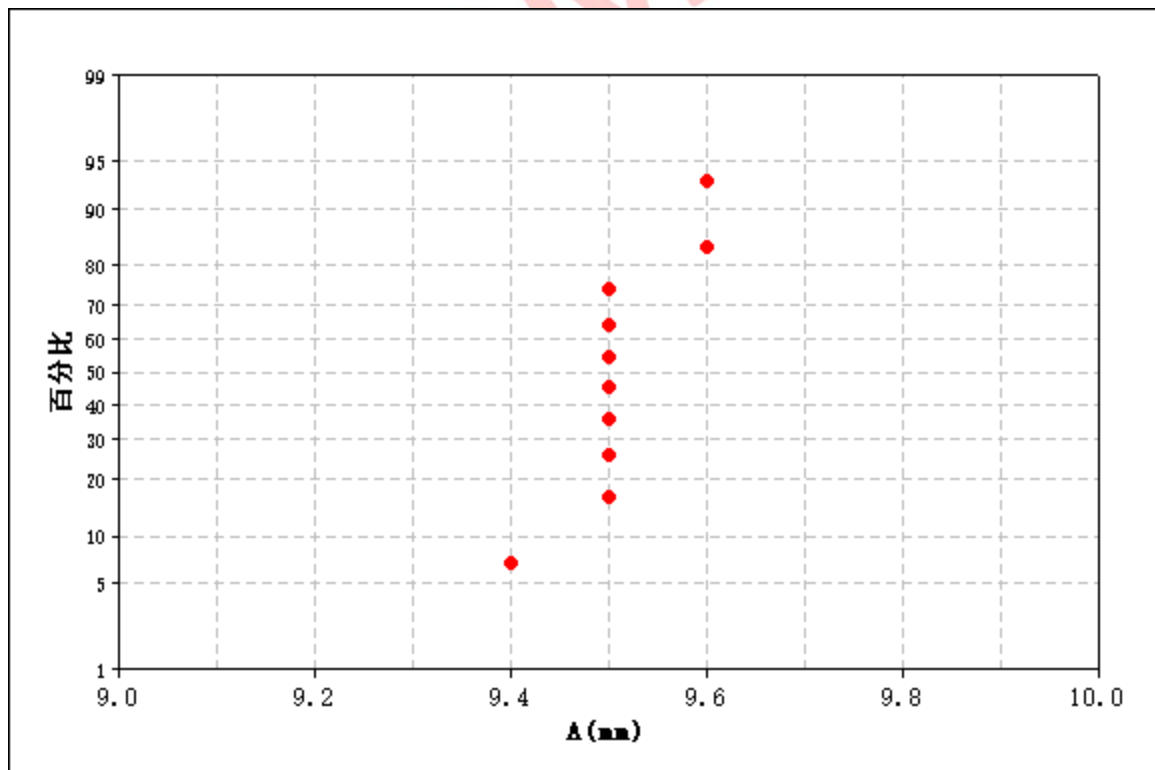
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
S-RDC(mΩ)	0.546	0.555	0.570	0.550	0.549	0.558	0.580	0.552	0.567	0.562

Note : DC Resistance(RDC)@25°C-0.56mΩ±10%



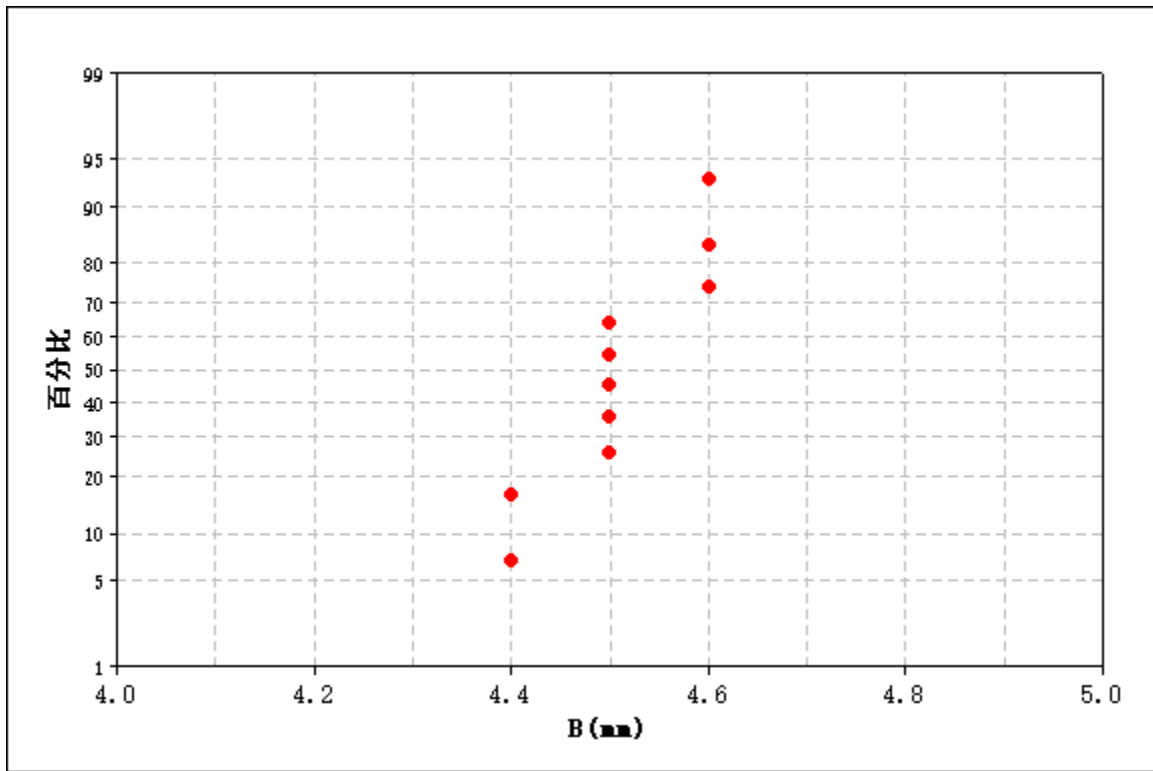
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
Ls (nH)	114.8	116.5	113.7	114.6	114.2	114.4	114.1	114.3	116.8	114.9

Note : Saturation Current for Inductance drop 2.0% @78 A( Typ.)



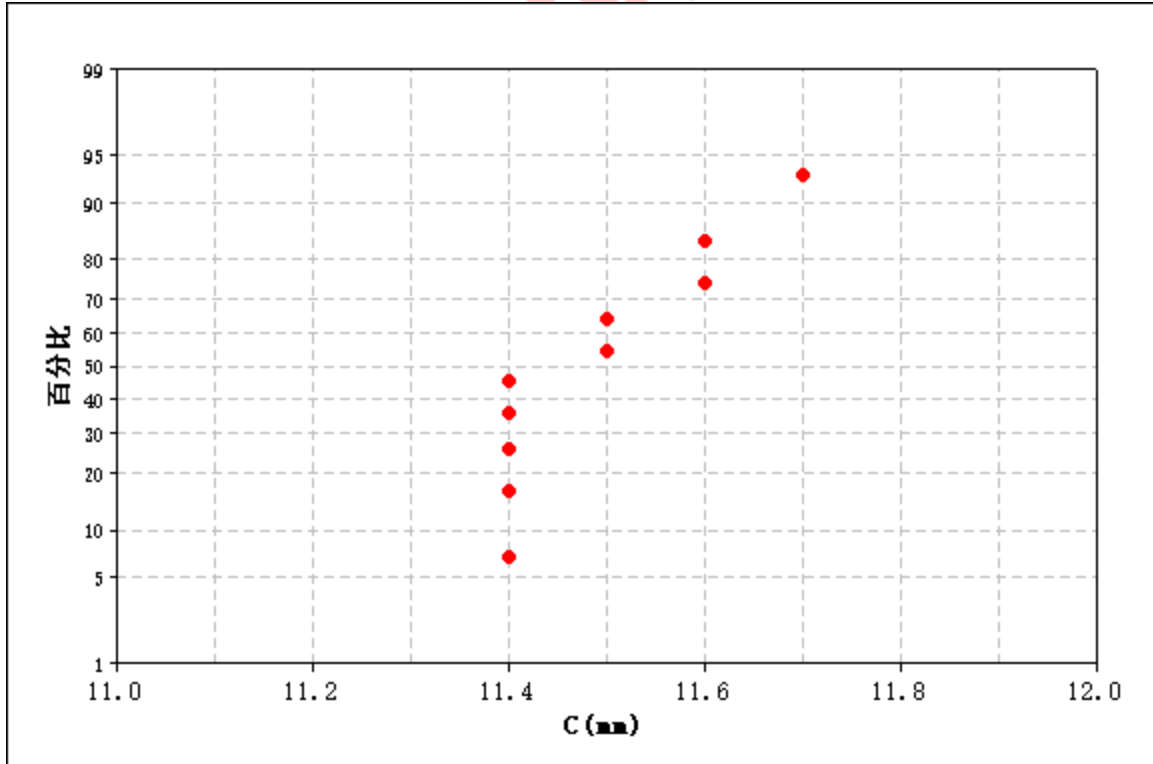
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
A (mm)	9.6	9.5	9.5	9.6	9.5	9.5	9.5	9.5	9.5	9.4

Note : Dimensions A @10.0mm(max)



	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
B (mm)	4.6	4.6	4.5	4.6	4.6	4.7	4.6	4.6	4.6	4.7

Note : Dimensions B @ 5.0mm(max)



	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
C (mm)	11.6	11.5	11.6	11.4	11.4	11.7	11.4	11.4	11.4	11.5

Note : Dimensions C @ 12.0mm(max)

## Reliability and Test Conditions

Test	Specifications	Test Conditions
Solder-ability	More than 90% of the terminal electrode should be covered with solder.	Preheat temperature : $150\pm 10^{\circ}\text{C}$ Preheat time: 1 min. Solder temperature : $235 \pm 5^{\circ}\text{C}$ Soldering time : $4 \pm 1$ sec
Resistance to soldering heat	1. No mechanical damage. 2. Samples shall satisfy electrical specification after test.	Preheat temperature : $150\pm 10^{\circ}\text{C}$ Preheat time: 1 min. Solder temperature : $260\pm 5^{\circ}\text{C}$ Soldering time : $10\pm 0.5$ sec
Temperature cycle	No mechanical damage.	Step1. $30\pm 5$ minutes at $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , Step2. $30\pm 5$ minutes at $+125^{\circ}\text{C}\pm 2^{\circ}\text{C}$ , Total 5 continuous cycles Measurement to be made after keeping at room temperature for $24\pm 2$ hours
High temperature	No mechanical damage.	Temperature : $125^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Test duration : $1000\pm 12$ hours Measurement to be made after keeping at room temperature for $24\pm 2$ hours
Low temperature	No mechanical damage.	Temperature : $-40^{\circ}\text{C}\pm 2^{\circ}\text{C}$ Test duration : $500\pm 12$ hours Measurement to be made after keeping at room temperature for $24\pm 2$ hours
Humidity	No mechanical damage.	Humidity : $85\pm 3\%$ R.H. Temperature : $85\pm 2^{\circ}\text{C}$ Test duration : $1000\pm 12$ hours. Measurement to be made after keeping at room temperature for $24\pm 2$ hours