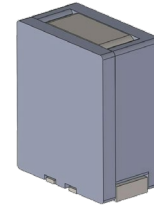
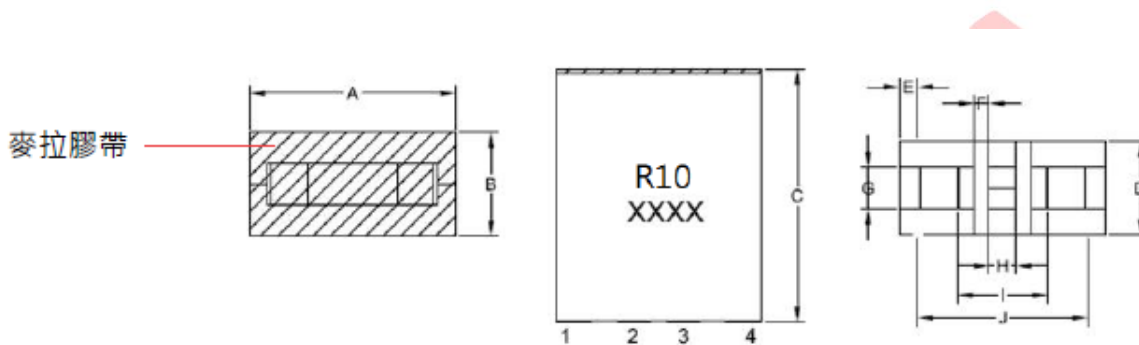


TLVR Power Inductor



APPLICATIONS	VR 14 power supply system Fast multi-phase trans inductor voltage regulator						
PRODUCT IDENTIFICATION	<u>FRPE</u> (1)	<u>100512</u> (2)	<u>A</u> (3)	-	<u>R10</u> (4)	<u>L</u> (5)	(1) PRODUCT NAME (2) DIMENSION (3) TYPE CODE (4) INDUCTOR CODE (5) INDUCTOR TOLERANCE CODE

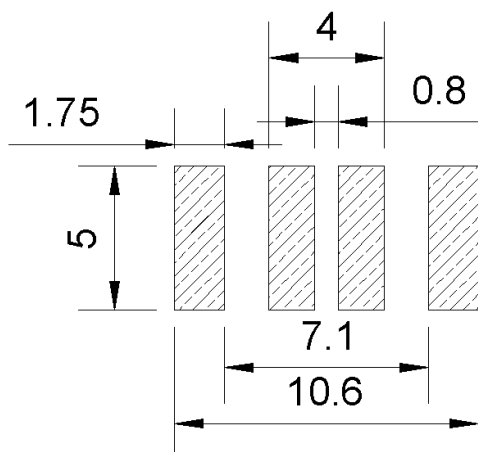
CONFIGURATIONS & DIMENSIONS (unit in mm)



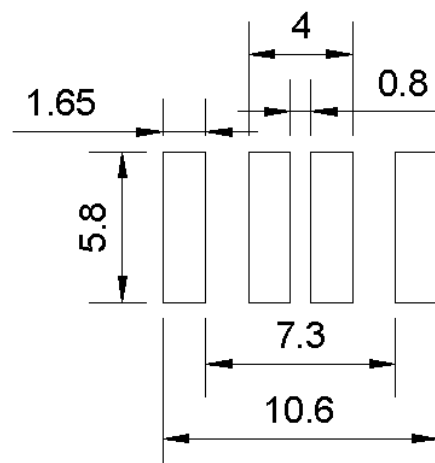
Type	A/mm	B/mm	C/mm	D/mm	E/mm
FRPE100512A	10.0max	5.0max	12.0max	4.5±0.3	0.9±0.3
	F/mm	G/mm	H/mm	I/mm	J/mm
	0.73	2.0	1.3	4.4	7.8

Recommended Soldering Condition (unit in mm)

Suggested PWB Layout



Suggested Stencil



TLVR Power Inductor

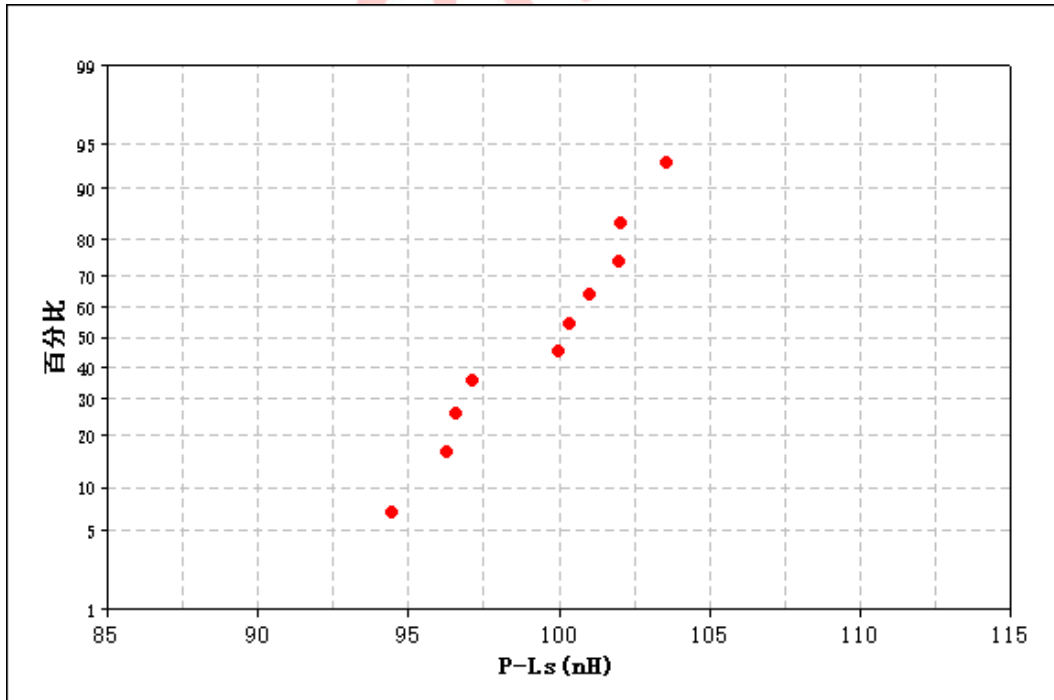
ELECTRICAL CHARACTERISTICS FOR FRPE 100512A-R10L SERIES

Part Number	P-Ls	RDC(P)	RDC(S)	P- I RMS (Typ.)	S - I RMS (Typ.)
FREI100512A-R10L	100nH± 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		
	90A	77A	72A	72nH	

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

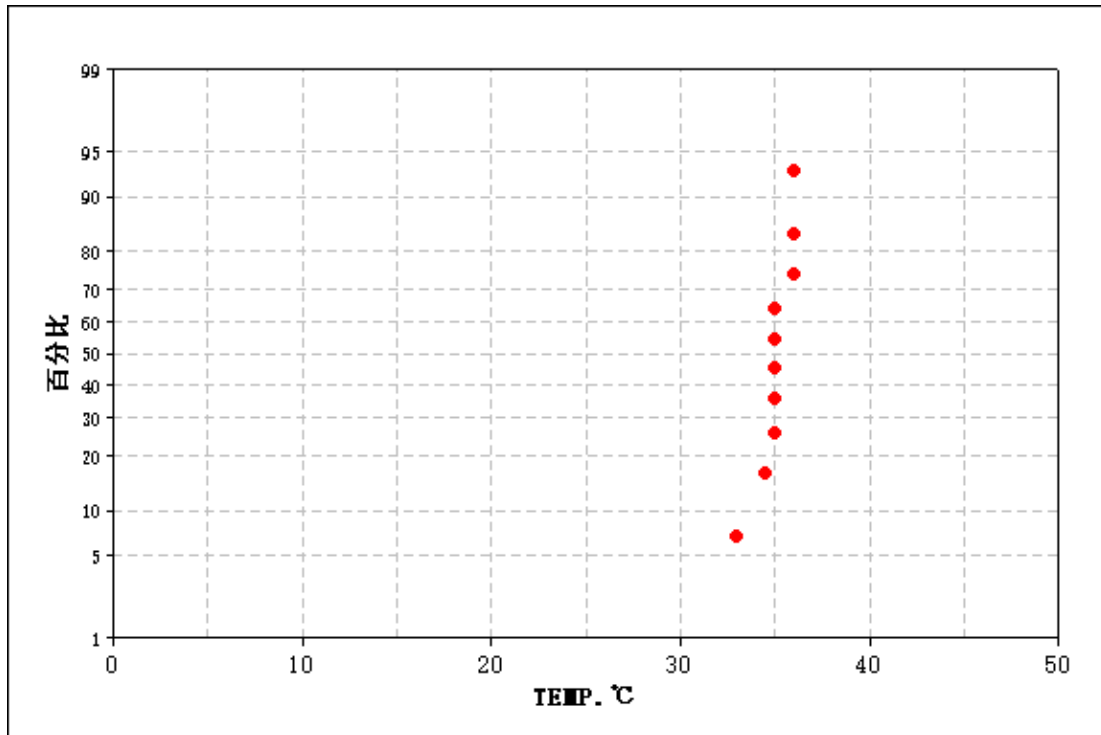
Storage Temperature Range : Store this product under the condition of -40°C to 85°C, 20% to 75 %RH and use within 6 months.

Test Data (Ls 、 Irms 、 RDC 、 Isat)



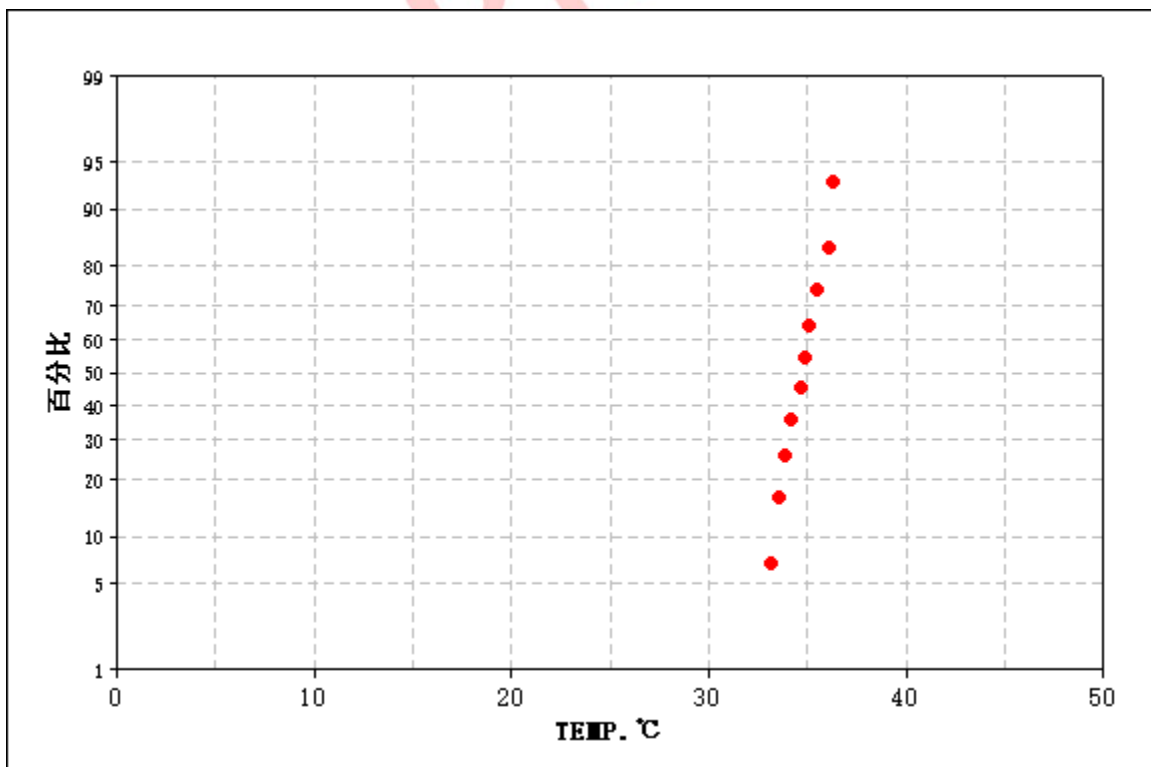
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-Ls(nH)	102	97	100	104	100	94	101	96	97	102

Note : 100nH±15%@100kHz,1.0V



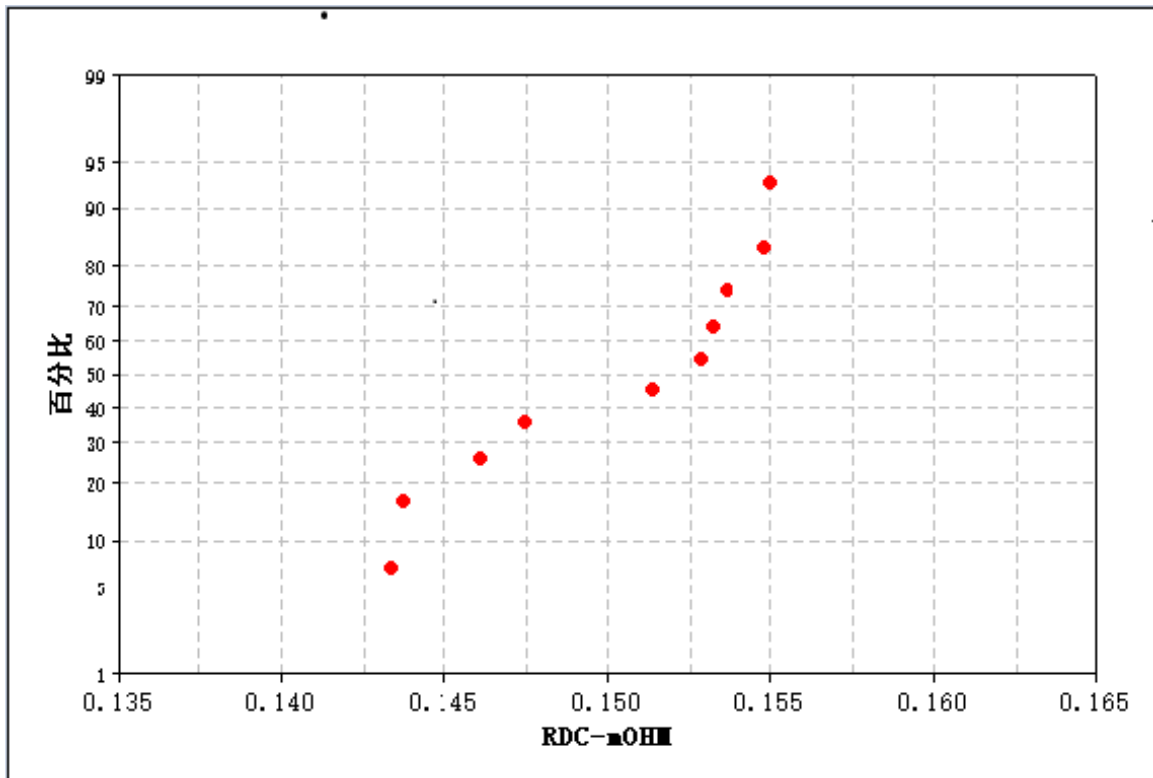
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-ΔT(°C)	34	35	36	35	35	33	35	36	36	35

Note : Δ T40 °C@ P-IRMS-70A



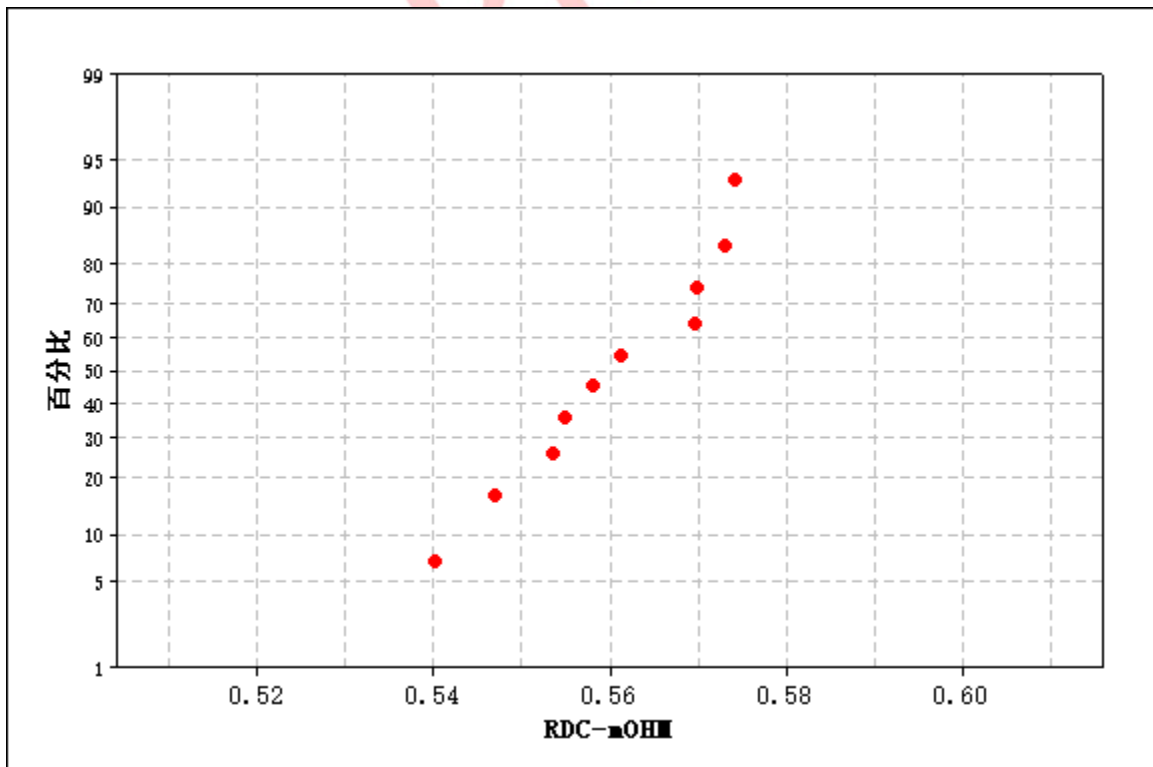
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
S-ΔT(°C)	36	35	36	34	33	33	35	36	34	34

Note : ΔT 40°C@ S-IRMS-36A



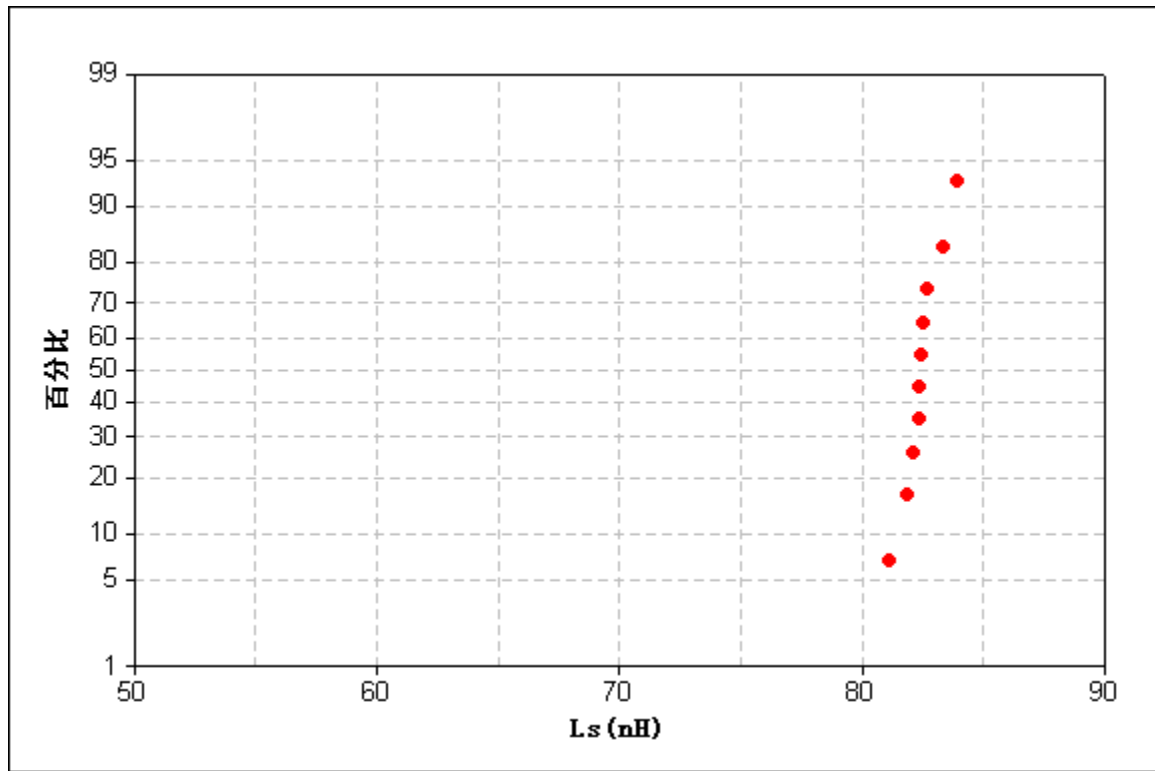
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
P-RDC(mΩ)	0.153	0.146	0.151	0.154	0.155	0.147	0.144	0.143	0.155	0.153

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



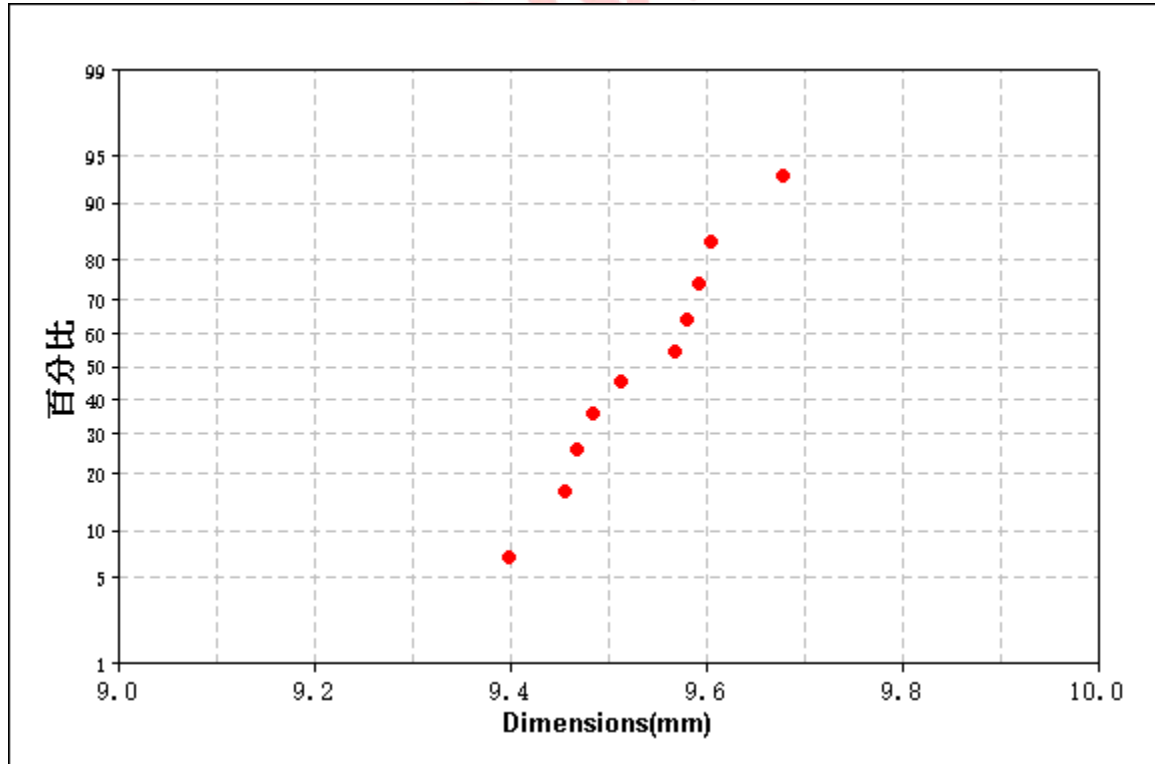
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
S-RDC(mΩ)	0.155	0.573	0.57	0.54	0.57	0.558	0.561	0.574	0.547	0.553

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



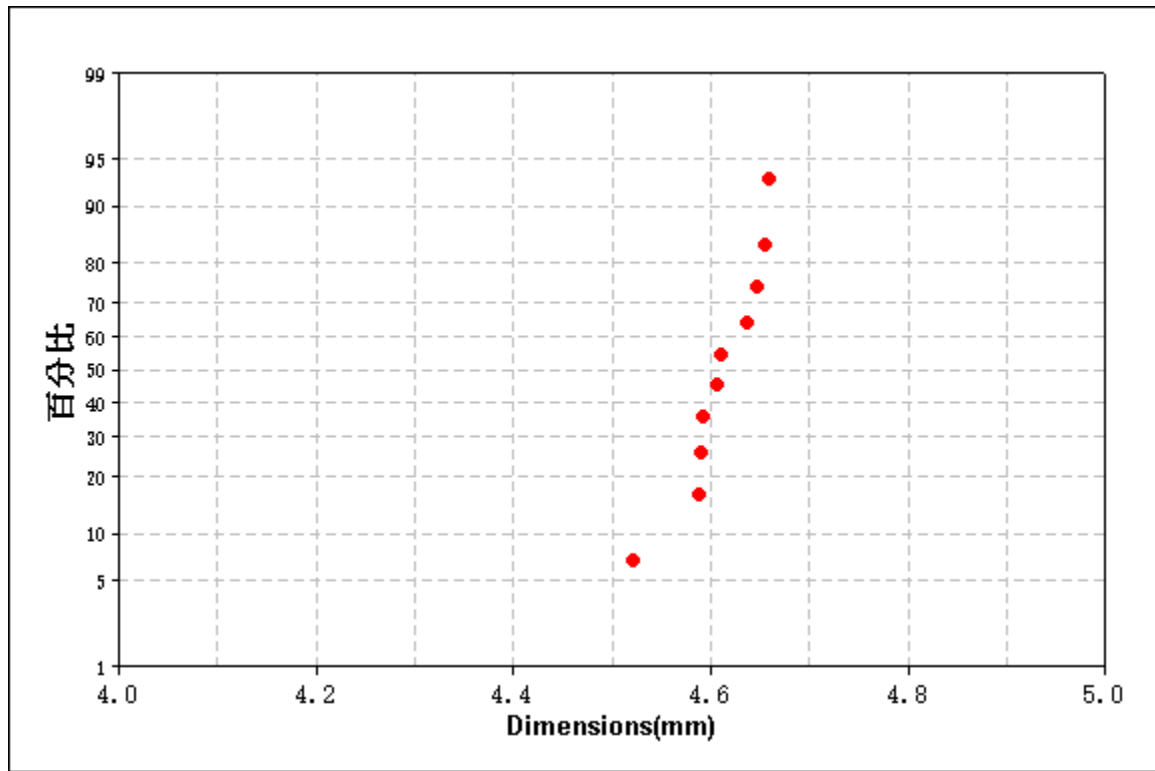
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
Ls (nH)	81.1	82.7	82.1	83.9	81.8	82.5	82.3	82.4	82.3	83.3

Note : Saturation Current for Inductance drop 2 0% @90 A(Typ.)



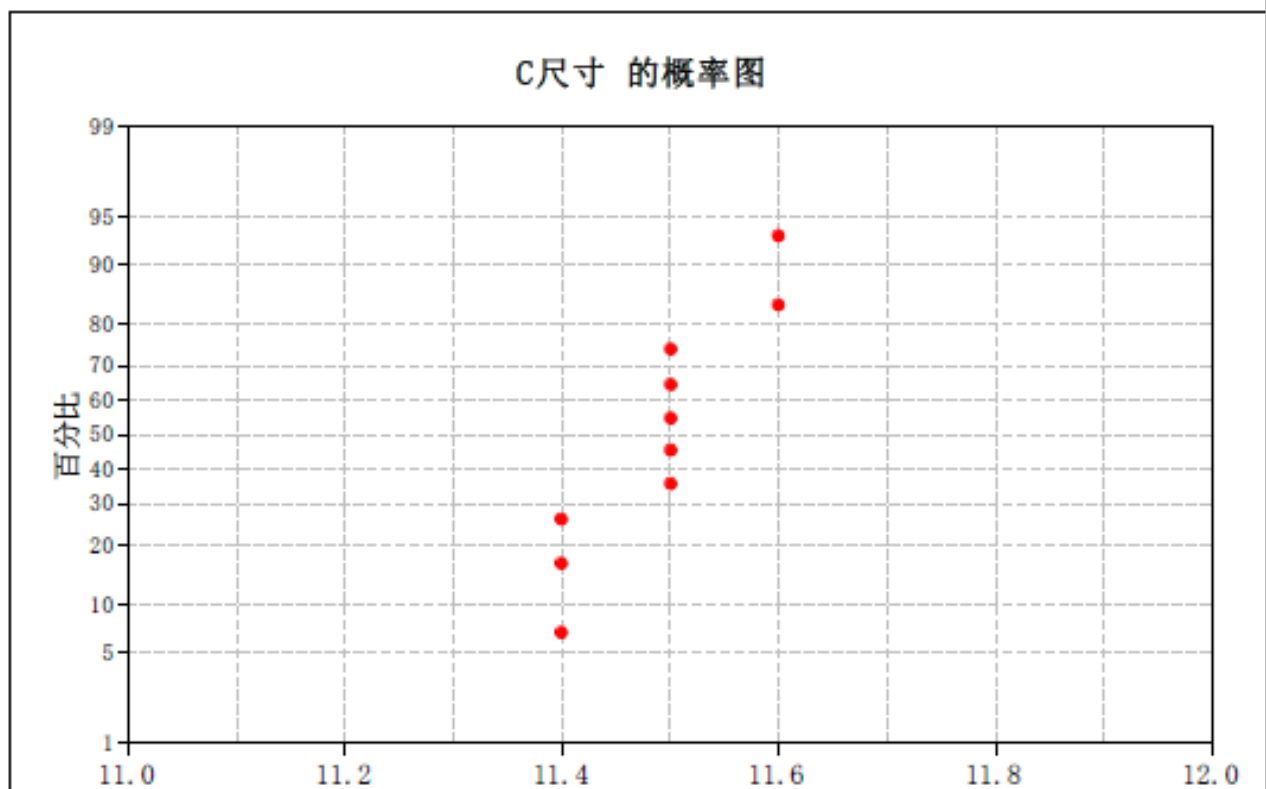
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	No.8	No.9	No.10
A (mm)	9.6	9.6	9.5	9.5	9.6	9.5	9.6	9.7	9.5	9.4

Note : DimensionsA@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

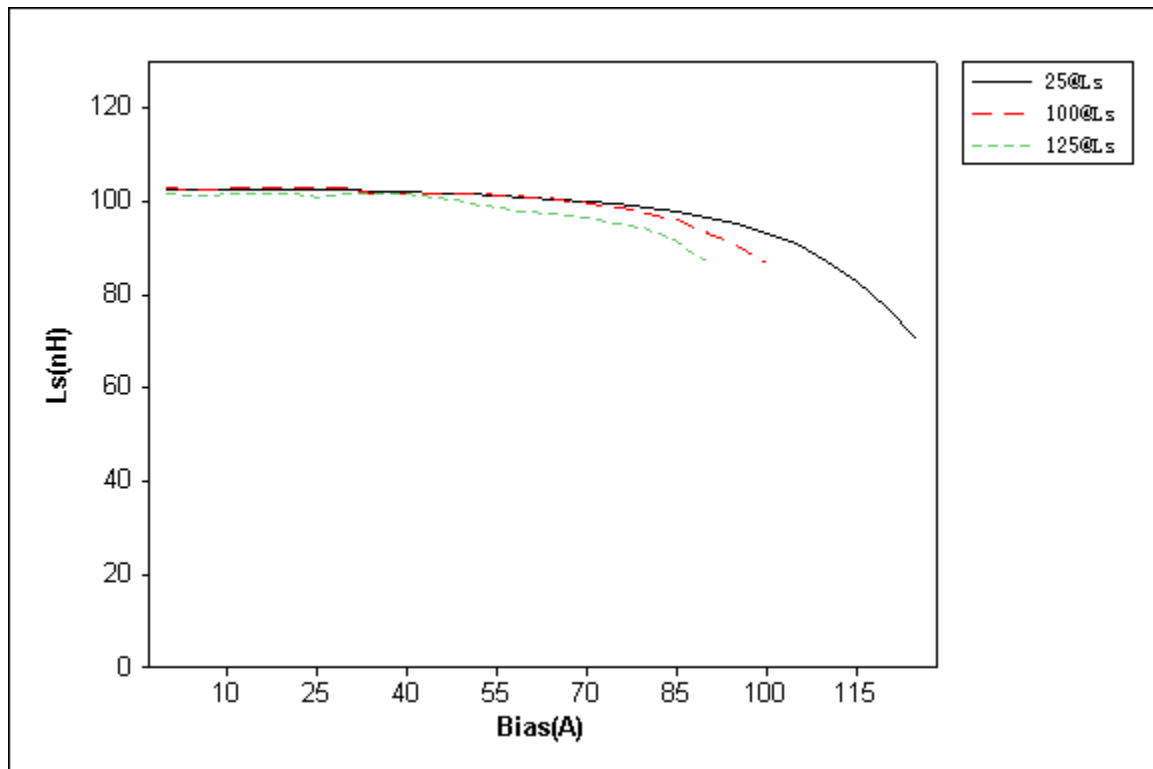
Note : Dimensions B @ 5.0mm(max)



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

Note : Dimensions C @ 12.0mm(max)

Typical Electrical Curve



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 ± 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 ± 0.5 sec
Temperature cycle	No mechanical damage.	Step1. 30 ± 5 minutes at $-40^{\circ}\text{C} \pm 2^{\circ}\text{C}$, Step2. 30 ± 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 ± 2 hours
High temperature	No mechanical damage.	Temperature : $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Test duration : 1000 ± 12 hours

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		Measurement to be made after keeping at room temperature for 24±2 hours
Low temperature	No mechanical damage.	Temperature : -40°C±2°C Test duration : 500±12 hours Measurement to be made after keeping at room temperature for 24±2 hours
Humidity	No mechanical damage.	Humidity : 85±3% R.H. Temperature : 85±2°C Test duration : 1000±12 hours. Measurement to be made after keeping at room temperature for 24±2 hours

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