

CUSTOMER APPROVAL SHEET

CUSTOMER :

CUSTOMER'S DWG NO :

CUSTOMER'S ITEM :

OUR DWG No :

OUR ITEM : ESQ Series

QUANTITY : PCS

DATE : 20181217

SPECIFICATION

	“ ✓ ”	CUSTOMER'S SIGNATURE	NOTE
FULL APPROVAL			
CONDITIONAL APPROVED			
REJECTED			

DRAWN BY	CHECKED BY	APPROVED BY

Head office

聯磁企業股份有限公司

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DIP Common Mode Choke \ ESQ Series

Features

1. Low DC resistance, the distribution of capacitance is minimum.
2. Closed magnetic circuit, small magnetic leakage, the effect of EMI achieved the expectation.

Application

1. AC/DC adaptors.
2. Switching Power Supplies.
3. LED lights.
4. Monitor and Display Units.

Product Identification



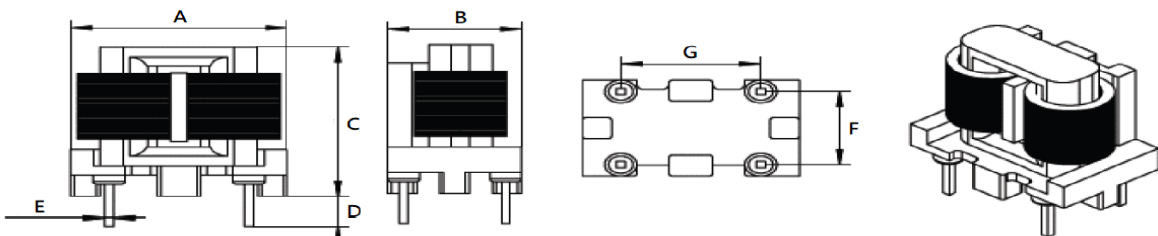
Series name	Dimensions Code	Coating		Internal code
ESQ	1212	C	Green	1R5=1.5A
	1515			110=11A
	1918			S=Stand
	2418			L=Lying
	2820			

Inductance		Tolerance	
1R0	1 μ H	K	10%
100	10 μ H	M	20%
110	100 μ H	N	30%

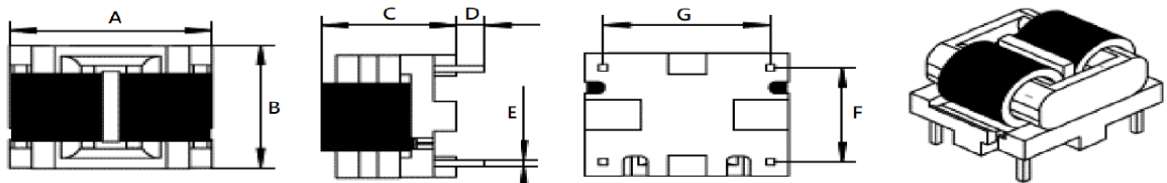
Material	
E10	10,000 ui
E12	12,000 ui

Shape and Dimension (ESQ1212)

1. Stand



2. Lying



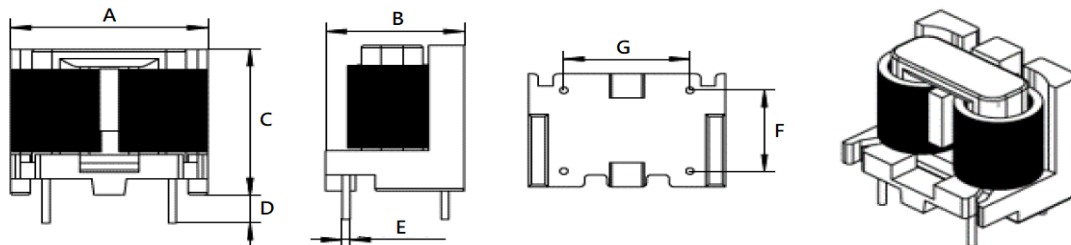
Dimensions(mm)

Part No.	A	B	C	D	E	F	G
ESQ1212C□□□S	18.0 Max.	11 Max.	17 Max.	3.5 ± 0.5	0.7 ± 0.5	8.0 ± 0.5	11.0 ± 0.5
ESQ1212C□□□L	18.5 Max.	14 Max.	12 Max.	3.5 ± 0.5	0.7 ± 0.5	10.0 ± 0.5	13.0 ± 0.5

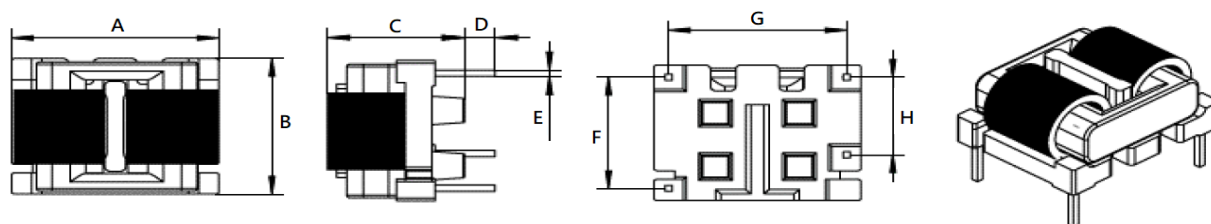
DIP Common Mode Choke \ ESQ Series

1. Shape and Dimension (ESQ1515)

1. Stand



2. Lying

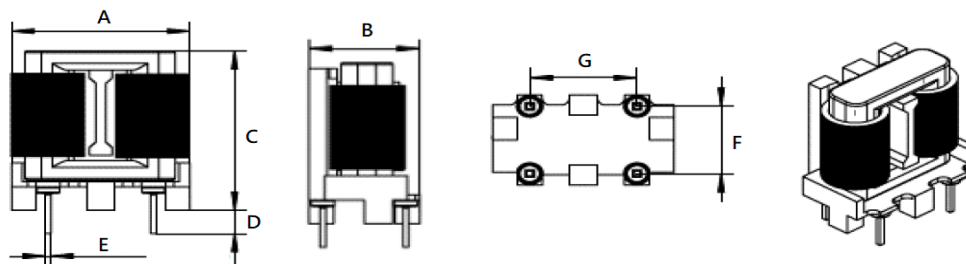


Dimensions(mm)

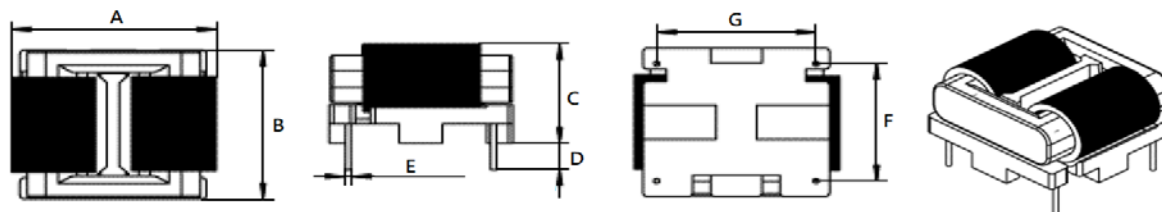
Part No.	A	B	C	D	E	F	G	H
ESQ1515C□□□S	21.0 Max.	14.5 Max.	20.5 Max.	3.5 ± 0.5	0.7 ± 0.5	10.0 ± 0.5	12.8 ± 0.5	-
ESQ1515C□□□L	21.0 Max.	16.5 Max.	14.0 Max.	3.5 ± 0.5	0.7 ± 0.5	12.9 ± 0.5	17.0 ± 0.5	9.0 ± 0.5

1. Shape and Dimension (ESQ1918)

1. Stand



2. Lying



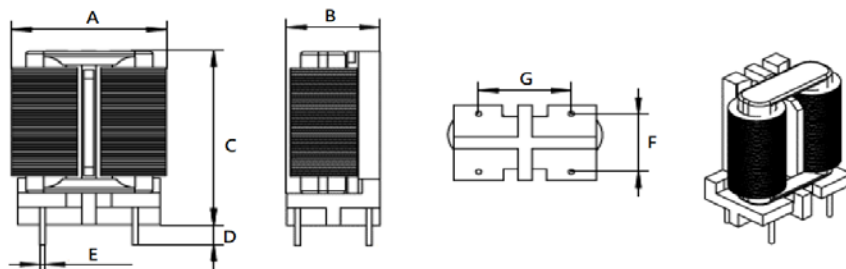
Dimensions(mm)

Part No.	A	B	C	D	E	F	G
ESQ1918C□□□S	23.5 Max.	14 Max.	25.5 Max.	3.5 ± 0.5	0.7 ± 0.1	10.0 ± 0.5	13 ± 0.5
ESQ1918C□□□L	26.0 Max.	23 Max.	16.5 Max.	3.5 ± 0.5	0.6 ± 0.1	15.5 ± 0.5	17 ± 0.5

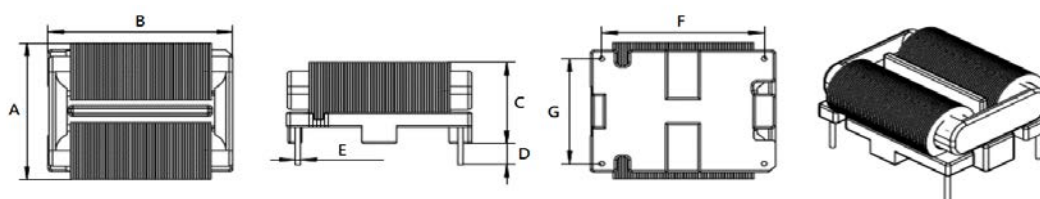
DIP Common Mode Choke \ ESQ Series

1. Shape and Dimension (ESQ2418)

1. Stand



2. Lying

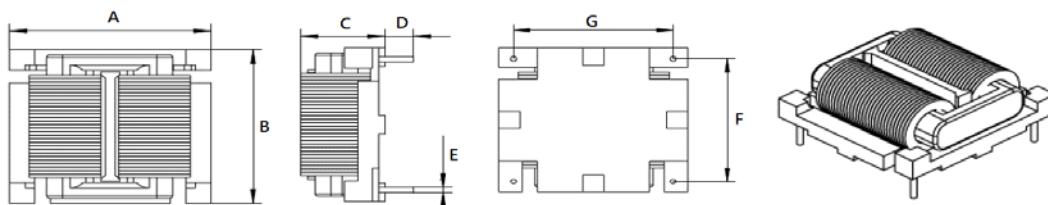


Dimensions(mm)

Part No.	A	B	C	D	E	F	G
ESQ2418C□□□S	24.0 Max.	14 Max.	32.0 Max.	3.5 ± 0.5	0.8 ± 0.1	10.0 ± 0.5	13 ± 0.5
ESQ2418C□□□L	26.0 Max.	26 Max.	15.5 Max.	3.5 ± 0.5	0.7 ± 0.1	21.5 ± 0.5	17 ± 0.5

1. Shape and Dimension (ESQ2820)

1. Lying

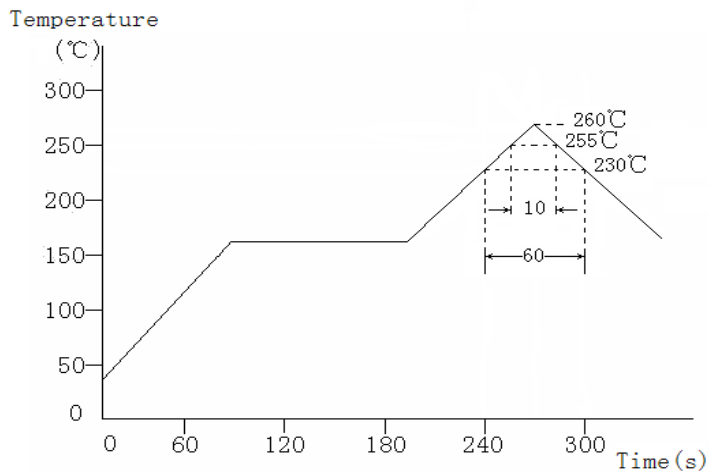


Dimensions(mm)

Part No.	A	B	C	D	E	F	G
ESQ2820C□□□L	32.5 Max.	30.5 Max.	15 Max.	3.5 ± 0.5	1.0 ± 0.1	27 ± 0.5	25.5 ± 0.5

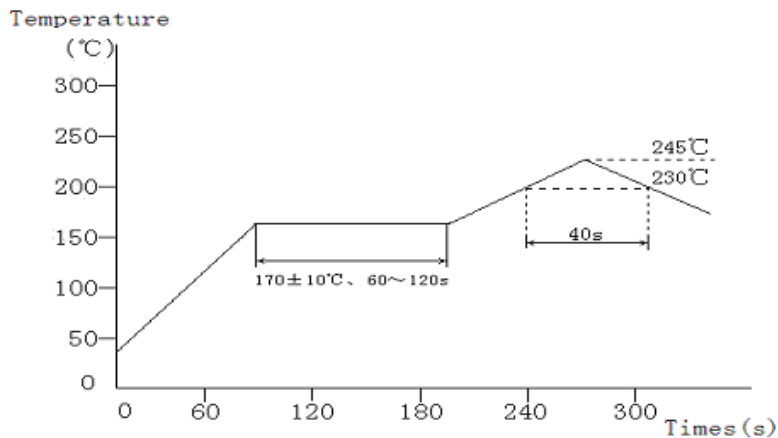
DIP Common Mode Choke \ ESQ Series

4. Reflow Soldering Heat Endurance



1. No mechanical and electrical defects are found after testing based on the above profile and keeping under the conditions of room temperature and humidity for 2 hours.
2. Twice reflow test is acceptable with the test interval remaining 1 hour under the normal conditions.
3. The reflow test profile may vary with the testing instruments.

4. Recommended Reflow Conditions



The recommended reflow profile is based on the testing instruments used. Solder ability will depend on the testing equipments, reflow conditions, testing method, etc. So it is necessary to make a confirmation of them when the reflow conditions are set up.

DIP Common Mode Choke \ ESQ Series

Electrical Characteristics (ESQ1212C TYPE)

Part No.	Inductance (mH)	DCR (mΩ)	Rated Current (A)	Wire (mm)	Turns (TS)	Test Frequency
ESQ1212C1R5□-123-E12	12.0 (-30%/+50%)	250	1.5	0.13*1.0	46	1 KHz
ESQ1212C1R5□-103-E12	10.0 (-30%/+50%)	180	1.5	0.15*1.0	40	1 KHz
ESQ1212C2R0□-702-E12	7.0 (-30%/+50%)	100	2.0	0.20*1.0	31	1 KHz

Electrical Characteristics (ESQ1515C TYPE)

Part No.	Inductance (mH)	DCR (mΩ)	Rated Current (A)	Wire (mm)	Turns (TS)	Test Frequency
ESQ1515C1R0□-183-E12	18.5 (Min)	350	1.0	0.10*1.0	68	1 KHz
ESQ1515C1R0□-353-E12	35 (Min)	380	1.0	0.10*1.0	68	1 KHz
ESQ1515C1R5□-103-E12	10 (Min)	210	1.5	0.15*1.0	50	1 KHz
ESQ1515C1R5□-103-E12	10.5 (-30%/+50%)	180	1.5	0.20*1.0	31	100 KHz
ESQ1515C1R5□-203-E12	20 (-30%/+50%)	250	1.5	0.13*1.0	56	1 KHz
ESQ1515C1R5□-283-E12	28 (Min)	250	1.5	0.13*1.0	56	1 KHz
ESQ1515C4R0□-562-E10	5.6 (Min)	110	2.0	0.20*1.0	40	1 KHz
ESQ1515C2R0□-802-E10	8.0 (-30%/+50%)	110	2.0	0.20*1.0	40	1 KHz
ESQ1515C2R0□-143-E12	14 (-30%/+50%)	130	2.0	0.20*1.0	39	10 KHz
ESQ1515C2R0□-153-E12	15 (-30%/+50%)	120	2.0	0.20*1.0	39	1 KHz
ESQ1515C2R5□-103-E12	10 (-30%/+50%)	130	2.5	0.25*1.0	32	10 KHz
ESQ1515C3R0□-422-E10	4.2 (Min)	80	3.0	0.25*1.2	35	1 KHz
ESQ1515C4R0□-502-E12	5.0 (-30%/+50%)	55	4.0	0.30*1.2	30	100 KHz
ESQ1515C5R0□-232-E10	2.3 (Min)	30	5.0	0.40*1.2	22	1 KHz
ESQ1515C5R0□-472-E12	4.7 (Min)	30	5.0	0.40*1.2	22	1 KHz

DIP Common Mode Choke \ ESQ Series
Electrical Characteristics (ESQ1918C TYPE)

Part No.	Inductance (mH)	DCR (mΩ)	Rated Current (A)	Wire (mm)	Turns (TS)	Test Frequency
ESQ1918C1R5□-153-E10	15 (Min)	220	1.5	0.15*1.0	58	1 KHz
ESQ1918C1R5□-173-E10	17 (-30%/+50%)	200	1.5	0.15*1.0	60	100 KHz
ESQ1918C1R5□-203-E10	20 (Min)	300	1.5	0.13*1.0	68	10 KHz
ESQ1918C1R5□-203-E12	20 (Min)	200	1.5	0.15*1.0	62	1 KHz
ESQ1918C2R0□-113N-E10	11 (±30%)	180	2.0	0.15*1.0	48	100 KHz
ESQ1918C2R0□-113-E10	11 (-30%/+50%)	155	2.0	0.20*1.0	50	100 KHz
ESQ1918C3R0□-952-E10	9.5 (-30%/+50%)	100	3.0	0.25*1.2	42	100 KHz
ESQ1918C3R0□-103-E10	10 (Min)	100	3.0	0.20*1.5	50	1 KHz
ESQ1918C4R0□-402-E10	4.0 (Min)	70	3.5	0.30*1.2	37	100 KHz
ESQ1918C4R0□-502-E10	5.0 (-30%/+50%)	50	4.0	0.35*1.2	30	10 KHz
ESQ1918C5R0□-502-E10	5.0 (-30%/+50%)	50	5.0	0.40*1.2	29	1 KHz
ESQ1918C6R0□-402-E12	4.0 (-30%/+50%)	30	6.0	0.40*1.5	27	100 KHz

Electrical Characteristics (ESQ2418C TYPE)

Part No.	Inductance (mH)	DCR (mΩ)	Rated Current (A)	Wire (mm)	Turns (TS)	Test Frequency
ESQ2418C2R0□-303-E12	30 (Min)	250	2.0	0.20*1.0	75	1 KHz
ESQ2418C2R0□-403-E12	40 (-30%/+50%)	260	2.0	0.20*1.0	75	1 KHz
ESQ2418C2R5□-293-E12	29 (-30%/+50%)	175	2.5	0.20*1.0	63	1 KHz
ESQ2418C3R5□-802-E10	8.0 (Min)	100	3.5	0.30*1.2	48	100 KHz
ESQ2418C4R0□-802-E10	8.0 (Min)	85	4.0	0.30*1.5	48	100 KHz
ESQ2418C4R5□-123-E12	12 (-30%/+50%)	80	4.5	0.35*1.2	47	1 KHz
ESQ2418C5R0□-902-E12	9.0 (-30%/+50%)	60	5.0	0.40*1.2	40	1 KHz
ESQ2418C6R0□-602-E10	6.0 (-30%/+50%)	50	6.0	0.40*1.5	40	100 KHz

DIP Common Mode Choke \ ESQ Series**Electrical Characteristics (ESQ2820C TYPE)**

Part No.	Inductance (mH)	DCR (mΩ)	Rated Current (A)	Wire (mm)	Turns (TS)	Test Frequency
ESQ2820C110L-602-E12	6.0 (-30%/+50%)	25	11	0.60*1.9	29	1 KHz

NOTE

1. Insulation resistance (MΩ) : 100 @500V_{DC} (Min.)
2. Hi-Pot (N1=N2) : 1800 V 2 Sec, 2mA, @AC 50Hz

DIP Common Mode Choke \ ESQ Series

Reliability and Test Conditions(可靠性測試條件)

Environmental test

ITEM	Test Method/Conditions	Required Characteristics
DRY HEAT	105+/-5°C 96 +/-2HOURS	1. NO ANY ABNORMALITY 2. $ \Delta L /L \leq 10\%$ 3. OTHER ELECTRICAL CHARACTERISTICS MUST ACCORD WITH THE SPECIFICATION
COLD	-20+/-3°C 96 +/-2HOURS	
DAMP HEAT	55+/-2°C, 90-95% RH 96 +/-2HOURS.	
THERMAL SHOCK	EXPOSED 10 CYCLE. EACH CONSISTING OF 30 MINUTES AT -20+/-2°C, 30MINUTES AT 80+/-2°C	
HUMIDITY CYCLING	-10°C~+60°C, 80~96%RH FOR 240HOURS (10 CYCLES)	
HIGH TEMPERATURE STORAGE	80±2°C, 48±2 HOURS, TEST AFTER 1 HOUR AT ROOM TEMPERATURE	
LOW TEMPERATURE STORAGE	-20±2°C, 48±2 HOURS, TEST AFTER 1 HOUR AT ROOM TEMPERATURE	

Mechanical test

ITEM	Test Method/Conditions	Required Characteristics
TERMINAL STRENGTH	TENSILE TESTS CARRIED OUT ACCORDING TO TABLE 1	NO PIN BE SHEDED AND MOVED CLEARLY
VIBRATION	1.5mm AMPLITUDE TOTAL EXCURSION 10-55-10Hz TRAVERSED IN 1 MINUTE. X.Y.Z. AXIS FOR 2 HOURS.	SHALL NOT BE ANY ABNORMALITY, ELECTRICAL CHARACTERISTICS MUST ACCORD WITH THE SPECIFICATION
RESISTANCE TO SOLDERING HEAT	DIPPED IN 260°C +/-5°C MOLTEN SOLDER FOR 10+/-1s.	NO ANY ABNORMALITY.
SOLDERBILITY	DIPPED IN 245°C +/-2°C MOLTEN SOLDER FOR 2+/-0.5s 95%MIN.	95%MIN SHALL BE SMOOTH AND BRIGHT.