

ESQC Series



These miniature chip inductors, ESQC Series, wound on a special ferrite core and are excellent to be used as choke coil in DC power supply circuits.

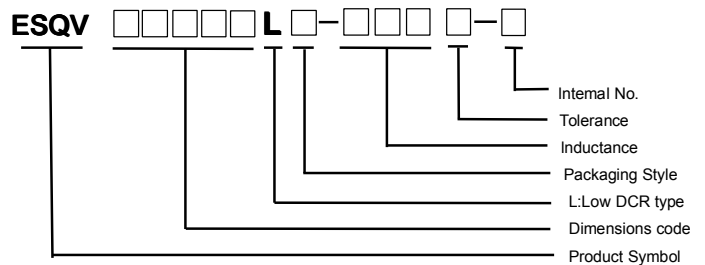
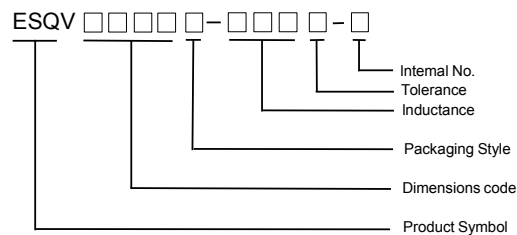
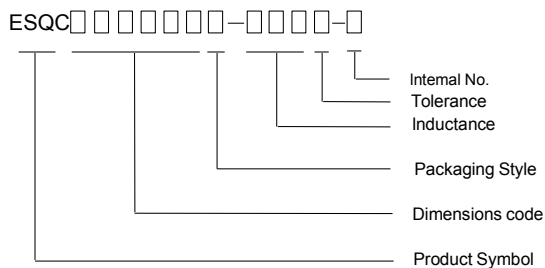
Features

- RoHS compliant
- Low DC resistance, high current capacity, and high impedance characteristics.
- Excellent solder heat resistance. Both flow and reflow soldering methods can be employed.
- Available in 4 sizes.

Applications

- Personal computers.
- Disk Drives and computer peripherals.
- Pagers, Cordless phone.
- DC power supply circuit

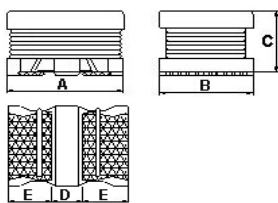
Product Identification



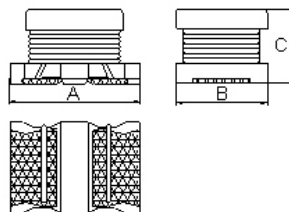
- Packaging: T : Tape and Reel
- ESQC__LT: Low DCR Type

Shapes and Dimensions

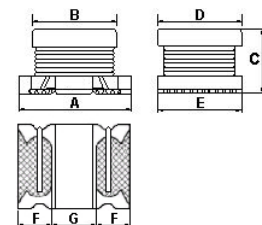
ESQC201609



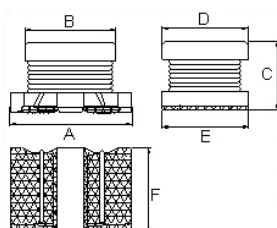
ESQC321618.ESQC322520.ESQC322520LT



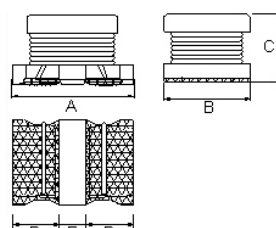
ESQC322517 ESQC322517HP



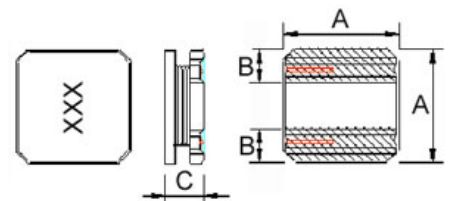
ESQC453226



ESQC575047



ESQC3010



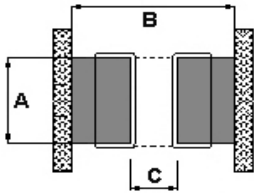
SMD Wire Wound Ferrite Chip Inductors - ESQC Series

Dimensions in mm

TYPE	A	B	C	D	E	F	G
ESQC201609	2.0 ± 0.2	1.6 ± 0.2	0.95 ± 0.05	0.8 ± 0.2	0.6 ± 0.2	-	-
ESQC3010	3.0 ± 0.2	0.875 ± 0.2	1.1 Max				
ESQC321618	3.2 ± 0.3	1.6 ± 0.2	1.8 ± 0.2	-	-	-	-
ESQC322517	3.2 ± 0.3	2.5 ± 0.2	1.55 ± 0.15	2.5 ± 0.2	2.5 ± 0.2	0.9 ± 0.3	1.3 ± 0.2
ESQC322517HP	3.2 ± 0.3	2.5 ± 0.2	1.55 ± 0.15	2.5 ± 0.2	2.5 ± 0.2	0.9 ± 0.3	1.3 ± 0.2
ESQC322520	3.2 ± 0.3	2.5 ± 0.2	2.0 ± 0.2	-	-	-	-
ESQC322520LT	3.2 ± 0.3	2.5 ± 0.2	2.0 ± 0.2	-	-	-	-
ESQC453226	4.5 ± 0.3	3.6 ± 0.2	2.6 ± 0.2	3.2 ± 0.2	3.2 ± 0.2	3.2 ± 0.2	-
ESQC575047	5.7 ± 0.3	5.0 ± 0.3	4.7 ± 0.3	1.3 Min	1.7 Min	-	-

Recommended Pattern

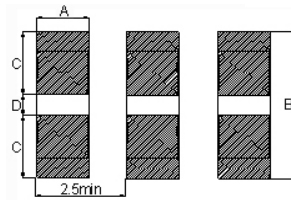
ESQC201609



Dimensions in mm

A	B	C
1.0	2.6	0.8

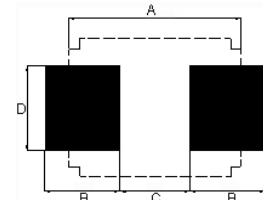
ESQC321618



Dimensions in mm

A	B	C	D
1.5	4.5	1.75	1.0

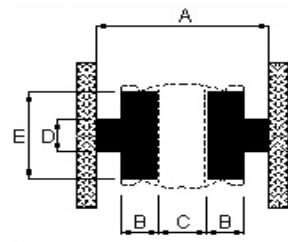
ESQC575047



Dimensions in mm

A	B	C	D
8.0	3.0	2.0	3.5

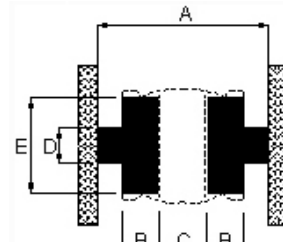
ESQC322517 & 322517HP



Dimensions in mm

TYPE	A	B	C	D	E
ESQC322517	5.5	1.0	1.3	1.0	2.0
ESQC322517HP	5.5	1.0	1.3	1.0	2.0

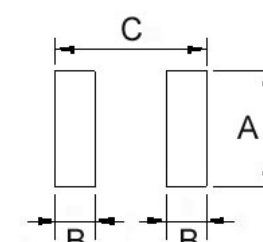
ESQC322520 & ESQC322520LT & 453226



Dimensions in mm

TYPE	A	B	C	D	E
ESQC322520	5.5	1.0	1.3	1.0	2.0
ESQC322520LT	5.5	1.0	1.3	1.0	2.0
ESQC453226	7.5	1.5	1.5	1.5	3.0

ESQC3010



Dimensions in mm

TYPE	A	B	C
ESQC3010	2.7	0.8	3.0

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	D.C. Resistance (Ω±30%)	SRF (MHz) Min	Rated current (mA)
ESQC201609T-1R0□-N	1.0	20	1	0.30	100	485
ESQC201609T-1R5□-N	1.5	20	1	0.40	95	445
ESQC201609T-2R2□-N	2.2	20	1	0.48	70	425
ESQC201609T-3R3□-N	3.3	20	1	0.60	65	375
ESQC201609T-4R7□-N	4.7	20	1	0.80	60	300
ESQC201609T-5R6□-N	5.6	20	1	0.90	60	280
ESQC201609T-6R8□-N	6.8	20	1	1.0	55	255
ESQC201609T-8R2□-N	8.2	20	1	1.1	50	235
ESQC201609T-100□-N	10	10 / 20	1	1.2	48	225
ESQC201609T-120□-N	12	10 / 20	1	1.4	44	210
ESQC201609T-150□-N	15	10 / 20	1	1.6	40	200
ESQC201609T-180□-N	18	10 / 20	1	1.8	35	190
ESQC201609T-220□-N	22	10 / 20	1	2.1	30	185
ESQC201609T-270□-N	27	10 / 20	1	2.5	30	180
ESQC201609T-330□-N	33	10 / 20	1	2.8	28	160
ESQC201609T-390□-N	39	10 / 20	1	4.4	24	125
ESQC201609T-470□-N	47	10 / 20	1	5.1	18	120
ESQC201609T-560□-N	56	10 / 20	1	5.7	17	110
ESQC201609T-680□-N	68	10 / 20	1	6.6	14	100
ESQC201609T-820□-N	82	10 / 20	1	7.5	14	90

- When ordering, please specify tolerance and packaging codes.
- Rated Current: Self temperature rise shall be limited to 40℃ Max. Inductance drop 30% typ.
- Tolerance : K = ±10% , M = ±20%
- Operating temp: - 4 0℃ ~ 1 2 5℃ (Including self - temperature rise)
- Soldering Heat: 260℃ 10 seconds after 150℃ preheat cycle for 4 minutes.
- Test equipment: L: HP4284A.
SRF: HP4287A
DCR: CH502BC

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (KHz)	RDC (Ω) Max	Rated current (A)Typ	Irms (A)
ESQC3010T-1R0□-N	1.0	30	100	0.072	1.70	1.40
ESQC3010T-1R5□-N	1.5	30	100	0.11	1.30	1.30
ESQC3010T-2R2□-N	2.2	20	100	0.18	1.20	0.95
ESQC3010T-3R3□-N	3.3	20	100	0.22	0.96	0.85
ESQC3010T-4R7□-N	4.7	20	100	0.29	0.77	0.68
ESQC3010T-6R8□-N	6.8	20	100	0.38	0.65	0.63
ESQC3010T-100□-N	10	20	100	0.64	0.56	0.50
ESQC3010T-150□-N	15	20	100	0.88	0.48	0.40
ESQC3010T-220□-N	22	20	100	1.55	0.37	0.32
ESQC3010T-330□-N	33	20	100	1.97	0.32	0.28
ESQC3010T-470□-N	47	20	100	2.73	0.27	0.20

- When ordering, please specify tolerance and packaging codes.
- Rated Current: Self temperature rise shall be limited to 35℃ Max. Inductance drops 10% typ.
- Tolerance : M = ±20% , T = ±30%
- Operating temp: - 2 5℃ ~ 1 2 5℃ (Including self - temperature rise)
- I rms: Self temperature rise shall limited to 40℃ Max.
- Test equipment: L: HP 4284A
RDC: CHEN HWA 502
IDC: HP4284A+HP42841A

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	D.C. Resistance (Ω±30%)	SRF (MHz) Min	Rated current (mA)
ESQC322517T-2R2□-N	2.2	20	1	0.097	64	790
ESQC322517T-3R3□-N	3.3	20	1	0.12	50	710
ESQC322517T-6R8□-N	6.8	20	1	0.25	32	540
ESQC322517T-100□-N	10	10,20	1	0.30	26	350
ESQC322517T-220□-N	22	10,20	1	0.71	19	250
ESQC322517T-101□-N	100	10,20	1	3.50	10	100

- When ordering, please specify tolerance and packaging codes
- Rated Current: Inductance drop 10% typ
- Tolerance : K = ±10% , M = ±20%
- Operating temp: - 2 5 °C ~ 1 2 5 °C (Including self - temperature rise)
- Soldering Heat: 260°C 10 seconds after 150°C preheat cycle for 4 minutes
- Test Equipment: L: HP4284A
SRF: HP4287A.
DCR: CH502BC

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	D.C. Resistance (Ω±20%)	SRF (MHz) Min	Rated current (mA)	Irms (mA)
ESQC322517HP-R47□-N	0.47	30	1	0.030	100	3400	2550
ESQC322517HP-1R0□-N	1.0	30	1	0.045	100	2300	2050
ESQC322517HP-1R5□-N	1.5	30	1	0.057	70	1750	1750
ESQC322517HP-2R2□-N	2.2	30	1	0.076	70	1550	1600
ESQC322517HP-3R3□-N	3.3	30	1	0.120	50	1250	1200
ESQC322517HP-4R7□-N	4.7	30	1	0.180	40	1000	1000
ESQC322517HP-6R8□-N	6.8	30	1	0.240	40	850	850
ESQC322517HP-100□-N	10	30	1	0.380	30	750	700
ESQC322517HP-220□-N	22	30	1	0.810	20	500	450

- When ordering, please specify tolerance and packaging codes
- Rated Current: Self temperature rise shall be limited to 40°C Max. Inductance drop 30% typ
- Tolerance : T = ±30%
- Operating temp: - 2 5 °C ~ 1 2 5 °C (Including self - temperature rise)
- Soldering Heat: 260°C 10 seconds after 150°C preheat cycle for 4 minutes
- Test Equipment: L: HP4284A
SRF: HP4291A RF Impedance Analyzer
DCR: CH502BC

Electrical Characteristics

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	D.C. Resistance (Ω±30%)	SRF (MHz) Min	Rated current (mA)
ESQC322520T-1R0□-N	1.0	20	1	0.09	96	1000
ESQC322520T-2R2□-N	2.2	20	1	0.13	64	600
ESQC322520T-4R7□-N	4.7	20	1	0.20	43	450
ESQC322520T-100□-N	10	20	1	0.44	26	300
ESQC322520T-220□-N	22	20 / 10	1	0.71	19	250
ESQC322520T-470□-N	47	20 / 10	1	1.30	15	170
ESQC322520T-101□-N	100	20 / 10	1	3.50	10	100
ESQC322520T-221□-N	220	20 / 10	1	8.40	6.8	70
ESQC322520T-331□-N	330	20 / 10	1	10.0	5.6	60
ESQC322520T-391□-N	390	20 / 10	1	17.0	5.0	60
ESQC322520T-471□-N	470	20 / 10	0.001	19.0	5.0	60
ESQC322520T-561□-N	560	20 / 10	0.001	22.0	5.0	60

- When ordering, please specify tolerance and packaging codes
- Rated Current: Self temperature rise shall be limited to 35℃ Max. Inductance drop 10% typ
- Tolerance : K = ±10% , M = ±20%
- Operating temp: -25℃~125℃ (Including self - temperature rise)
- Soldering Heat: 260℃ 10 seconds after 150℃ preheat cycle for 4 minutes
- Test Equipment: L: HP4192A. LF Impedance Analyzer
SRF: HP4291A RF Impedance Analyzer
DCR: CH502BC

Electrical Characteristics (LOW DCR Type)

Part Number	Inductance (uH)	Tolerance (±%)	Test Frequency (MHz)	D.C. Resistance (Ω±30%)	SRF (MHz) Min	Rated current (mA)
ESQC322520LT-R15□-N	0.15	20	1	0.028	400	1450
ESQC322520LT-R27□-N	0.27	20	1	0.034	250	1250
ESQC322520LT-R47□-N	0.47	20	1	0.042	150	1100
ESQC322520LT-1R0□-N	1.0	20	1	0.060	100	1000
ESQC322520LT-2R2□-N	2.2	20	1	0.097	64	790
ESQC322520LT-4R7□-N	4.7	20	1	0.15	43	650
ESQC322520LT-100□-N	10	20 / 10	1	0.30	26	450

- When ordering, please specify tolerance and packaging codes
- Rated Current: Self temperature rise shall be limited to 35℃ Max. Inductance drop 10% typ
- Tolerance : K = ±10% , M = ±20%
- Operating temp: -25℃~125℃ (Including self - temperature rise)
- Soldering Heat: 260℃ 10 seconds after 150℃ preheat cycle for 4 minutes
- Test Equipment: L: HP4192A. LF Impedance Analyzer
SRF: HP4291A RF Impedance Analyzer
DCR: CH502BC

Electrical Characteristics

Part Number	Inductance (μ H)	Tolerance ($\pm$ %)	Test Frequency (MHz)	D.C. Resistance (Ω) Max	SRF (MHz) Min	Rated current (mA)
ESQC453226T-1R0□-N	1.0	20	1	0.08	100	1080
ESQC453226T-1R5□-N	1.5	20	1	0.09	85	1000
ESQC453226T-2R2□-N	2.2	20	1	0.11	60	900
ESQC453226T-3R3□-N	3.3	20	1	0.13	47	800
ESQC453226T-4R7□-N	4.7	10 / 20	1	0.15	35	750
ESQC453226T-6R8□-N	6.8	10 / 20	1	0.20	30	720
ESQC453226T-100□-N	10	5 / 10	1	0.24	23	650
ESQC453226T-150□-N	15	5 / 10	1	0.32	20	570
ESQC453226T-220□-N	22	5 / 10	1	0.60	15	420
ESQC453226T-330□-N	33	5 / 10	1	1.0	12	310
ESQC453226T-470□-N	47	5 / 10	1	1.1	10	280
ESQC453226T-680□-N	68	5 / 10	1	1.7	8.4	220
ESQC453226T-101□-N	100	5 / 10	1	2.2	6.8	190
ESQC453226T-151□-N	150	5 / 10	1	3.5	5.5	130
ESQC453226T-221□-N	220	5 / 10	1	4.0	4.5	110
ESQC453226T-331□-N	330	5 / 10	1	6.8	3.6	100
ESQC453226T-471□-N	470	5 / 10	0.001	8.5	3.0	90

- When ordering, please specify tolerance and packaging codes
- Rated Current: Self temperature rise shall be limited to 35°C Max. Inductance drop 10% typ
- Tolerance : J = $\pm$ 5% , K = $\pm$ 10% , M = $\pm$ 20%
- Operating temp: -25°C~125°C (Including self - temperature rise)
- Soldering Heat: 260°C 10 seconds after 150°C preheat cycle for 4 minutes
- Test Equipment: L: HP4192A. LF Impedance Analyzer
SRF: HP4291A RF Impedance Analyzer
DCR: CH502BC

Electrical Characteristics

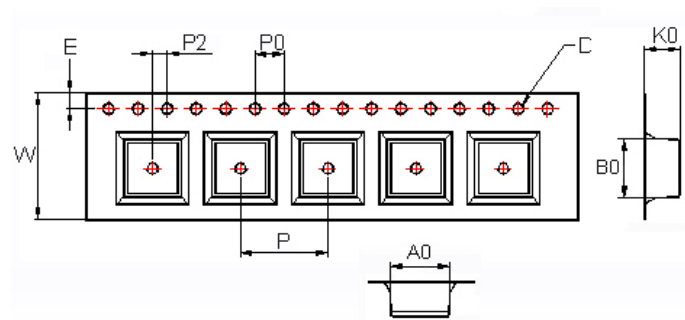
Part Number	Inductance (μH)	Tolerance ($\pm\%$)	Test Frequency (MHz)	D.C. Resistance (Ω) Max	SRF (MHz) Min	Rated current (mA)
ESQC575047T-R12□-N	0.12	20	1	0.0098	450	6000
ESQC575047T-R27□-N	0.27	20	1	0.0140	300	5300
ESQC575047T-R47□-N	0.47	20	1	0.0182	200	4800
ESQC575047T-1R0□-N	1.0	20	1	0.0270	150	4000
ESQC575047T-1R5□-N	1.5	20	1	0.0310	110	3700
ESQC575047T-2R2□-N	2.2	20	1	0.0410	80	3200
ESQC575047T-3R3□-N	3.3	20	1	0.0500	40	2900
ESQC575047T-4R7□-N	4.7	20	1	0.0574	30	2700
ESQC575047T-6R8□-N	6.8	20	1	0.1040	25	2000
ESQC575047T-100□-N	10	10 / 20	1	0.1300	20	1700
ESQC575047T-150□-N	15	10 / 20	1	0.210	17	1400
ESQC575047T-220□-N	22	10 / 20	1	0.266	15	1200
ESQC575047T-330□-N	33	10 / 20	1	0.448	12	900
ESQC575047T-470□-N	47	10 / 20	1	0.560	10	800
ESQC575047T-680□-N	68	10 / 20	1	0.938	7.6	640
ESQC575047T-101□-N	100	10 / 20	0.1	1.204	6.5	560
ESQC575047T-151□-N	150	10 / 20	0.1	2.660	5.0	420
ESQC575047T-221□-N	220	10 / 20	0.1	3.360	4.0	320
ESQC575047T-331□-N	330	10 / 20	0.1	6.160	3.1	270
ESQC575047T-471□-N	470	10 / 20	0.1	7.560	2.4	240
ESQC575047T-681□-N	680	10 / 20	0.1	11.34	1.9	190
ESQC575047T-102□-N	1000	10 / 20	0.01	14.42	1.7	150
ESQC575047T-222□-N	2200	10 / 20	0.01	30.10	1.2	100
ESQC575047T-472□-N	4700	10 / 20	0.01	61.04	0.8	70
ESQC575047T-103□-N	10000	10 / 20	0.01	140.0	0.5	50

- When ordering, please specify tolerance and packaging codes
- Rated Current: Self temperature rise shall be limited to 35°C Max. Inductance drop 10% typ.
- Tolerance : K = $\pm 10\%$, M = $\pm 20\%$
- Operating temp : $-25^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)
- Soldering Heat : 260°C 10 seconds after 150°C preheat cycle for 4 minutes.
- Test equipment: L:HP4192. LF Impedance Analyzer
SRF:HP4291A RF Impedance Analyzer
DCR:CH502BC

Packaging Specifications

Tape Dimensions

FIG 1



Tape Material

Carrier Tape: Polystyrene
Cover Type: Polyethylene

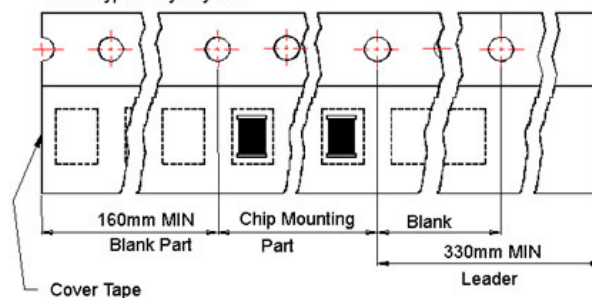
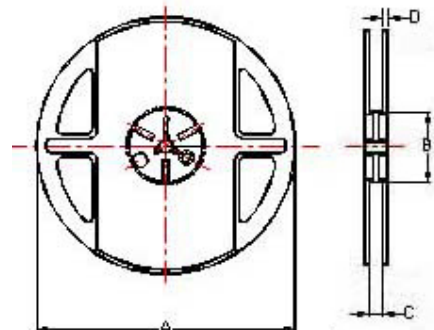
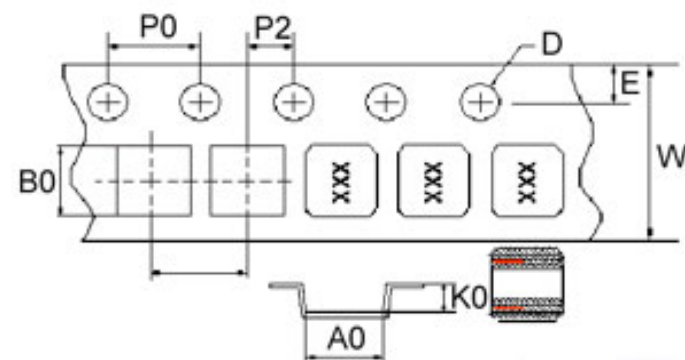


FIG 2

Reel Dimensions



Dimensions in mm

TYPE	FIG	Tape Dimensions									Reel Dimensions				Quantity PCS / REEL
		A0	B0	K0	D	E	W	P	P0	P2	A	B	C	D	
ESQC201609	1	1.9	2.3	1.1	1.55	1.75	8	4	4	2	178	60	9	1.5	3000
ESQC3010	2	3.2	3.2	1.4	1.55	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC321618	1	1.85	3.55	2.05	1.5	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC322517	1	2.85	3.56	1.80	1.55	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC322517HP	1	2.85	3.56	1.80	1.55	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC322520	1	2.90	3.60	2.25	1.5	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC322520LT	1	2.90	3.60	2.25	1.5	1.75	8	4	4	2	178	60	9	1.5	2000
ESQC453226	1	3.60	4.90	3.00	1.5	1.75	12	8	4	2	178	60	13.2	1.5	500
ESQC575047	1	5.4	6.0	5.5	1.5	1.75	16	12	12	2	330	100	17	1.5	1000