Jameco Part Number 644332

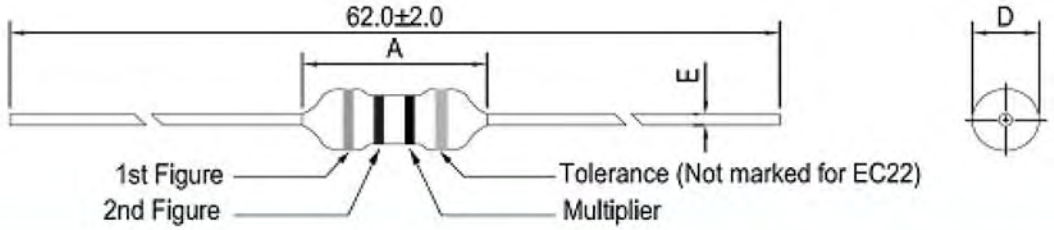
AXIAL LEADED COATED INDUCTORS

EC 22/23/24/36/38/46/0410 TYPE

BS EN ISO 9001:2000 FM 39945

Shape and Size : (Dimensions are in mm)

3L P/N	A	D	E
EC22	4.0max	2.8max	0.50±0.05
EC23	6.35max	2.3max	0.50±0.05
EC24	7.62max	3.0max	0.55±0.05
EC36	10.5max	4.0max	0.65±0.05
EC38	12.7max	4.2max	0.65±0.05
EC46	12.0max	5.0max	0.65±0.05
EC0410	15.0max	5.0max	0.65±0.05



Features :

- Conformal coated inductors .
- Treated with epoxy resin coating makes it high reliability.
- EC22/24/36/46 with special magnetic core structure. contributes to high Q and high SRF.
- EC38 / 0410 for power application.
- EC23 / EC24 / EC36 for inductance below 1.0uH use ceramic core.
- Tape and reel packaging for automatic insertion.

Ordering information :

EC 24 - 560 K - T5A

(1) (2) (3) (4) (5)

(1) Type: **E**poxy **C**oated.

(2) Style: **A**ccording to core size.

(3) Inductance: Example: "**560**" for **56**uH.

(4) Tolerance: "**M**" : ±20% ; "**K**" : ±10% ; "**J**" : ±5% .

(5) Other information: "**T5**, **T2, T5A, TF4, TF5**, **TF6**" represents the Packing Mode, No code: Bulk. "U, F" represents the shape.

Inductance and rated current ranges :

· EC22	0.10uH ~ 1.0mH	700mA ~ 20mA
· EC23	0.047uH ~ 0.82uH	1.2A ~ 260mA
· EC24	0.10uH ~ 1.0mH	700mA ~ 60mA
· EC36	0.10uH ~ 1.0uH	900mA ~ 100mA
· EC38	1.0uH ~ 10.0mH	3.0A ~ 30mA
· EC46	1.2mH ~ 33mH	110mA ~ 20mA
· EC0410	1.0uH ~ 47mH	3.8A ~ 100mA

Characteristics :

- Rated DC Current: It is either the inductance is 10% lower than its initial value in D.C. saturation characteristics or temperature raise becomes △T=20℃ (Ta=20℃), whichever is lower.
- Operating temperature ranges: -20 to 80 ° C.
- Storage temperature ranges: -40 to 80 ° C.
- Dielectric with standing voltage: 250V AC r.m.s.

Test equipments and test setup :

L & Q: HP 4285A with HP42851A (Freq. >75kHz).

L & Q: HP 4284A (Freq.<75kHz).

DCR : Milli-ohm meter.

SRF : HM 9461 L-SRF meter.

- Electrical specifications at 25℃.

Applications:

- Televisions, personal computers.
- Radios, telephones.
- Others various electronic products.

AXIAL LEADED COATED INDUCTORS

EC38 TYPE

BS EN ISO 9001:2000 FM 39945

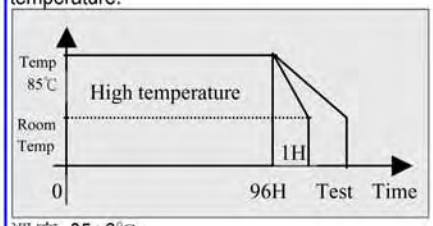
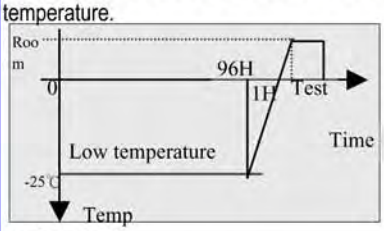
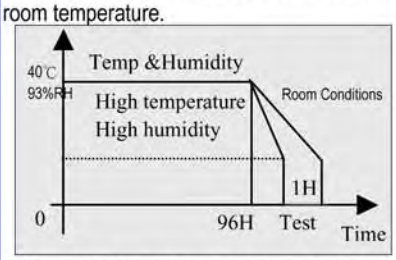
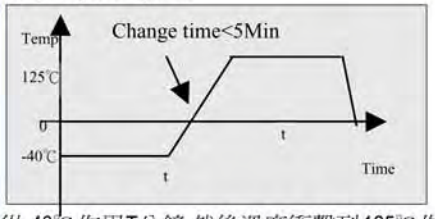
Part No.	L	Test	SRF	DCR	Rated current (mA)		Color code			
			(MHz)	(Ohm)	I sat	I rms				
	uH	Freq.	Ref.	Max.	Max.	Max.	1st	2nd	3rd	4th
EC38 -1R0M	**1.0**	**7.96MHz**	**190**	**0.018**	**3000**	**3300**	**Bn**	**Bk**	**Gd**	**BK**
EC38 -1R2M	1.2	7.96MHz	170	0.019	2700	3200	Bn	R	Gd	BK
EC38 -1R5M	1.5	7.96MHz	160	0.020	2500	3100	Bn	Gn	Gd	BK
EC38 -1R8M	1.8	7.96MHz	150	0.023	2100	2900	Bn	Gy	Gd	BK
EC38 -2R2M	2.2	7.96MHz	130	0.031	2000	2600	R	R	Gd	BK
EC38 -2R7M	2.7	7.96MHz	120	0.033	1900	2500	R	V	Gd	BK
EC38 -3R3M	3.3	7.96MHz	110	0.054	1700	1900	O	O	Gd	BK
EC38 -3R9M	3.9	7.96MHz	100	0.060	1500	1800	O	W	Gd	BK
EC38 -4R7K	4.7	7.96MHz	86	0.068	1400	1700	Y	V	Gd	S
EC38 -5R6K	5.6	7.96MHz	64	0.074	1300	1600	Gn	Be	Gd	S
EC38 -6R8K	6.8	7.96MHz	44	0.080	1200	1600	Be	Gy	Gd	S
EC38 -8R2K	8.2	7.96MHz	32	0.087	1100	1500	Gy	R	Gd	S
EC38 -100K	**10**	**1kHz**	**25**	**0.095**	**970**	**1500**	**Bn**	**Bk**	**Bk**	**S**
EC38 -120K	12	1kHz	17	0.110	880	1400	Bn	R	Bk	S
EC38 -150K	15	1kHz	13	0.150	790	1200	Bn	Gn	Bk	S
EC38 -180K	18	1kHz	10	0.16	710	1100	Bn	Gy	Bk	S
EC38 -220K	22	1kHz	8.40	0.19	640	1000	R	R	Bk	S
EC38 -270K	27	1kHz	8.00	0.22	580	950	R	V	Bk	S
EC38 -330K	33	1kHz	7.60	0.24	530	910	O	O	Bk	S
EC38 -390K	39	1kHz	7.10	0.26	480	880	O	W	Bk	S
EC38 -470K	47	1kHz	6.00	0.35	430	760	Y	V	Bk	S
EC38 -560K	56	1kHz	5.80	0.47	400	650	Gn	Be	Bk	S
EC38 -680K	68	1kHz	4.30	0.53	370	610	Be	Gy	Bk	S
EC38 -820K	82	1kHz	4.10	0.60	330	580	Gy	R	Bk	S
EC38 -101K	**100**	**1kHz**	**3.90**	**0.67**	**300**	**550**	**Bn**	**Bk**	**Bn**	**S**
EC38 -121K	120	1kHz	3.60	0.90	270	470	Bn	R	Bn	S
EC38 -151K	150	1kHz	3.20	1.20	250	410	Bn	Gn	Bn	S
EC38 -181K	180	1kHz	2.80	1.40	220	380	Bn	Gy	Bn	S
EC38 -221K	220	1kHz	2.30	1.90	200	320	R	R	Bn	S
EC38 -271K	270	1kHz	2.10	2.10	180	310	R	V	Bn	S
EC38 -331K	330	1kHz	1.90	2.40	170	290	O	O	Bn	S
EC38 -391K	390	1kHz	1.70	3.00	150	260	O	W	Bn	S
EC38 -471K	470	1kHz	1.40	3.40	140	240	Y	V	Bn	S
EC38 -561K	560	1kHz	1.30	4.70	130	210	Gn	Be	Bn	S
EC38 -681K	680	1kHz	1.20	6.40	110	180	Be	Gy	Bn	S
EC38 -821K	820	1kHz	1.10	7.10	100	170	Gy	R	Bn	S
EC38 -102K	**1000**	**1kHz**	**1.00**	**7.90**	**95**	**160**	**Bn**	**Bk**	**R**	**S**
EC38 -122K	1200	1kHz	0.94	9.00	87	150	Bn	R	R	S
EC38 -152K	1500	1kHz	0.76	12.0	78	130	Bn	Gn	R	S
EC38 -182K	1800	1kHz	0.72	14.0	71	120	Bn	Gy	R	S
EC38 -222K	2200	1kHz	0.64	19.0	64	100	R	R	R	S
EC38 -272K	2700	1kHz	0.56	25.0	58	90	R	V	R	S
EC38 -332K	3300	1kHz	0.53	29.0	52	83	O	O	R	S
EC38 -392K	3900	1kHz	0.48	34.0	48	77	O	W	R	S
EC38 -472K	4700	1kHz	0.45	37.0	44	74	Y	V	R	S
EC38 -562K	5600	1kHz	0.40	50.0	40	63	Gn	Be	R	S
EC38 -682K	6800	1kHz	0.36	58.0	36	59	Be	Gy	R	S
EC38 -822K	8200	1kHz	0.29	68.0	33	54	Gy	R	R	S
EC38 -103K	**10,000**	**1kHz**	**0.27**	**75.0**	**30**	**52**	**Bn**	**Bk**	**O**	**S**

RELIABILITY TEST CONDITIONS
EC,PK,VC,FC,TC(IRON CORE) and other similar types

REV:2.0

EC,PK,VC,FC,TC(IRON CORE) and other similar types

Environmental tests (環境試驗)

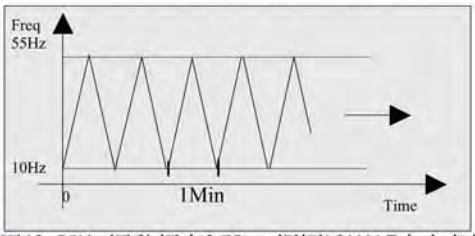
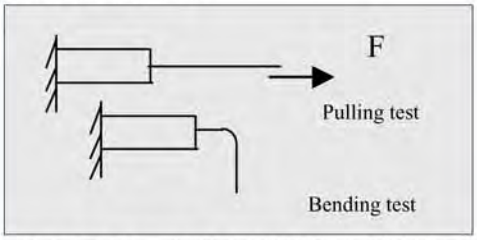
Item (項目)	Required Characteristics (要求)	Test Method / Condition (測試方法)
High temperature Storage test Reference documents: MIL-STD-202G Method 108A 高溫儲存試驗	1.No case deformation or change in appearance. 2.△L/L≦10% 3.△Q/Q≦30% 4.△DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	Temperature: 85±2℃ Time : 96±2 hours Tested not less than 1 hour, nor more than 2 hours at room temperature.  溫度: 85±2℃ 時間: 96±2 小時 樣品在室溫下放置1小時,不超2小時間必須測試.
Low temperature Storage test Reference documents: IEC 68-2-1A 6.1 6.2 低溫儲存試驗	1.No case deformation or change in appearance. 2.△L/L≦10% 3.△Q/Q≦30% 4.△DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	Temperature: -25±2℃ Time : 96±2 hours Tested not less than 1 hour, nor more than 2 hours at room temperature.  溫度: -25±2℃ 時間: 96±2 小時 樣品在室溫下放置1小時,不超2小時間必須測試.
Humidity test Reference documents: MIL-STD-202G Method 103B 濕度測試	1.No case deformation or change in appearance. 2.△L/L≦10% 3.△Q/Q≦30% 4.△DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	1. Dry oven at a temperature of 40° ±5°C for 24 hours. 2. Measurements At the end of this period 3. Exposure:Temperature: 40±2℃ , Humidity: 93±3%RH Time : 96±2 hours 4. Tested while the specimens are still in the chamber 5. Tested not less than 1 hour, nor more than 2 hours at room temperature.  1.樣品必須先在40゜±5゜條件下乾燥24小時 2.乾燥後測試 3.暴露: 溫度:40±2℃ , 溼度: 93±3%RH 時間 : 96±2 hours 4.暴露結束後,在試驗箱中進行測試. 5.樣品在室溫下放置1小時,不超2小時間必須測試.
Thermal shock test Reference documents: MIL-STD-202G Method 107G 熱衝擊測試	1.No case deformation or change in appearance. 2.△L/L≦10% 3.△Q/Q≦30% 4.△DCR/DCR≦10% For T: weight≦28g : 15Min; 28g≦weight≦136g : 30Min 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	First -40℃ forT time, last125℃ T time as 1 cycle. Go through 20 cycles.  從-40℃作用T分鐘,然後溫度衝擊到125℃作用T分鐘,作爲一個循環,共作用20次.

RELIABILITY TEST CONDITIONS
EC,PK,VC,FC,TC(IRON CORE) and other similar types

REV:2.0

EC,PK,VC,FC,TC(IRON CORE) and other similar types

Physical characteristic tests (物理特性試驗)

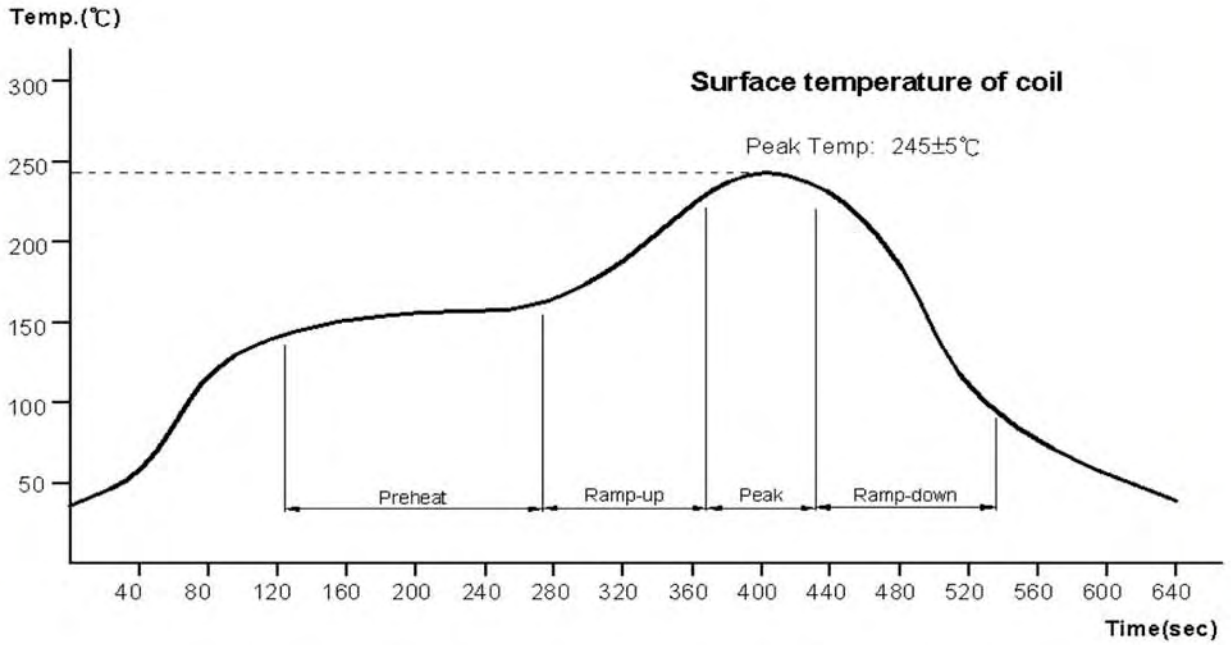
Item (項目)	Required Characteristics (要求)	Test Method / Condition (測試方法)
Solderability test Reference documents: MIL-STD-202G Method 208H IPC J-STD-002B 可焊性測試	Terminals area must have 95% min. solder coverage 端子必須有95%以上著錫	1.Dip pads in flux then dip in solder pot at 245±5℃ for 5 seconds. 2.Solder: Sn(96)/Ag(4) 3.Flux : rosin flux 1.端子浸入助焊劑, 然後浸入245±5℃錫爐中5秒 2.焊料 :Sn(96)/Ag(4) 3.助焊劑: 松香助焊劑
Heat endurance of flow soldering Reference documents: MIL-STD-202G Method 210F 波峰焊耐熱試驗	1.No case deformation or change in appearance. 2. △L/L≦10% 3. △Q/Q≦30% 4. △DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	1.Dip pads in flux then dip in solder pot at 260±5℃ for 10 seconds. 2.Solder: Sn(96)/Ag(4) 3.Flux: rosin flux 1.端子浸入助焊劑, 然後浸入260±5℃錫爐中10秒 2.焊料 :Sn(96)/Ag(4) 3.助焊劑: 松香助焊劑
Vibration test Reference documents: MIL-STD-202G Method 201A 振動測試	1.No case deformation or change in appearance. 2. △L/L≦10% 3. △Q/Q≦30% 4. △DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	Apply frequency 10~55Hz. 0.75mm amplitude in each of perpendicular direction for 2 hours. (total 6 hours)  用10~55Hz 振動頻率0.75mm振幅沿X,Y,Z方向各振動2小時. (共6小時)
Drop test Reference documents: IEC 68-2-32:1990 落下試驗	1.No case deformation or change in appearance. 2. △L/L≦10% 3. △Q/Q≦30% 4. △DCR/DCR≦10% 1.無明顯的外觀缺陷 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	Packaged & Drop down from 1m with 981m/s^2(100G) attitude In 1 angle 1 ridges & 2 surfaces orientations. 將產品包裝後從1米高度自然落下至試驗板上1角1棱2面
Terminal strength Reference documents: MIL-STD-202G Method 211A Test A & C 端子強度試驗	1.Terminal should not come out 2. △L/L≦10% 3. △Q/Q≦30% 4. △DCR/DCR≦10% For: Wire-leaded components - Test A & C For: Others leaded components - Test A 1.端子不會松脫 2.感值變化不超過10% 3.品質因數變化不超過30% 4.直流電阻變化不超過10%	A.Pull Force:0.45kg;the force shall be applied gradually to the terminal and then maintained for 10 seconds. C. Wire-lead bend:0.23kg,The rate of bending shall be approximately 3 seconds per bend in each direction. The load shall be suspended at a point within 1/4 inch from the free end of the terminal.  A.拉力:0.45公斤力,拉力逐漸到最大值維持10秒. C.線腳彎曲:0.23公斤力,每個方向彎曲3次.負載應該加在離端子末端1/4英寸處
Resistance to solvent test Reference documents: IEC 68-2-45:1993 耐溶劑性試驗	No case deformation or change in appearance,or obliteration of marking 無外觀破壞及標記破損	To dip parts into IPA solvent for 5±0.5Min,then drying them at room temp for 5Min,at last ,to brushing making 10 times. 在IPA溶劑中浸泡 5±0.5分鐘,室溫下乾燥5分鐘,然後擦拭10次.

RELIABILITY TEST CONDITIONS

REV:2.0

	Item (項目)	Required Characteristics (要求)	Test Method / Condition (測試方法)
Electrical Characteristic tests (電特性試驗)	Electronic characteristic test of major products 主要產品電特性測試	Refer to catalogue of specific products 參照具體產品目錄頁	Refer to catalogue of specific products 參照具體產品目錄頁書
	Overload test Reference documents: JIS C5311-6.13 過負荷試驗	1.During the test no smoke, no peculiar,smell, no fire 2.The characteristic is normal after test 1.試驗過程中無冒煙,異味,著火等, 2.試驗後產品特性正常.	Apply twice as rated current for 5 minutes. 通兩倍額定電流 5 分鐘

Curve of Heat endurance of Reflow soldering test



A test is made under the conditions mentioned above. And it is left 1 hours in the normal temperature and humidity. After that, no mechanical and electrical defeat should be found out.

The reflow condition is according to the machine used by our company.