



# SYNTECH CORPORATION

## FIXED INDUCTORS

|           |            |
|-----------|------------|
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### 1. FEATURES

- Conformal Coated Inductors.
- Special Magnetic Core Structure Contributes To High Q And Self-Resonant Frequencies (S.R.F.).
- Treated With Epoxy Resin Coating Makes It High Reliability.
- Wide Inductance Range.
- Ideal For Auto Insertion.

### 2. CHARACTERISTICS

#### (1) Currents Rating

Based On Temperature Rise Not To Exceed 20

#### (2) Operating Temperature

-20 To 80

#### (3) Dielectric With Standing Voltage

250 V r.m.s.

#### (4) Moisture & Heat Resist

$L/L \leq 5\%$  ;  $Q/Q \leq 20\%$

#### (5) Test Equipment

L & Q : HP 4285A Precision Q Meter

DCR : Milli-Ohm Meter

SRF : HM9461 L-SRF Meter

| APPROVED | CHECKED | DESIGNED | REMARK      | DOCUMENT NO. |
|----------|---------|----------|-------------|--------------|
| Carol    | May     | Chen     | 8/22 RE:SGS | 0801010118   |

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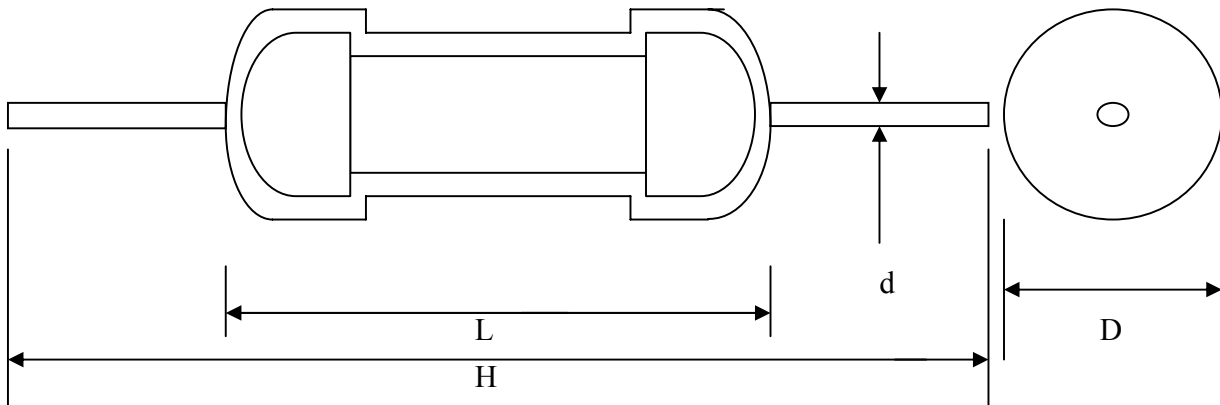


### 4. INDUCTANCE AND RATED CURRENT RANGES

| TYPE               | INDUCTANCE RANGE | RATED DC CURRENT(mA) |
|--------------------|------------------|----------------------|
| <b>EC22 (0204)</b> | 0.1uH ~ 1.0MH    | 700mA ~ 20mA         |
| <b>EC24 (0307)</b> | 0.1uH ~ 1.0MH    | 700mA ~ 60mA         |
| <b>EC36 (0410)</b> | 0.1uH ~ 1.0MH    | 900mA ~ 100mA        |
| <b>EC38 (0412)</b> | 1.0uH ~ 10.0MH   | 3.0A ~ 30mA          |
| <b>EC46 (0510)</b> | 1.2MH ~ 33.0MH   | 110mA ~ 20mA         |

Figure2

### 5. DIMENSIONS



Unit: m/m

| TYPE               | L        | D       | H          | d           |
|--------------------|----------|---------|------------|-------------|
| <b>EC22 (0204)</b> | 4.0 max  | 2.8 max | 62.0 ± 2.0 | 0.50 ± 0.05 |
| <b>EC24 (0307)</b> | 7.6 max  | 3.0 max | 62.0 ± 2.0 | 0.55 ± 0.05 |
| <b>EC36 (0410)</b> | 10.5 max | 4.0 max | 62.0 ± 2.0 | 0.65 ± 0.05 |
| <b>EC38 (0412)</b> | 12.7 max | 4.2 max | 62.0 ± 2.0 | 0.65 ± 0.05 |
| <b>EC46 (0510)</b> | 12.0 max | 5.0 max | 62.0 ± 2.0 | 0.65 ± 0.05 |

Figure2

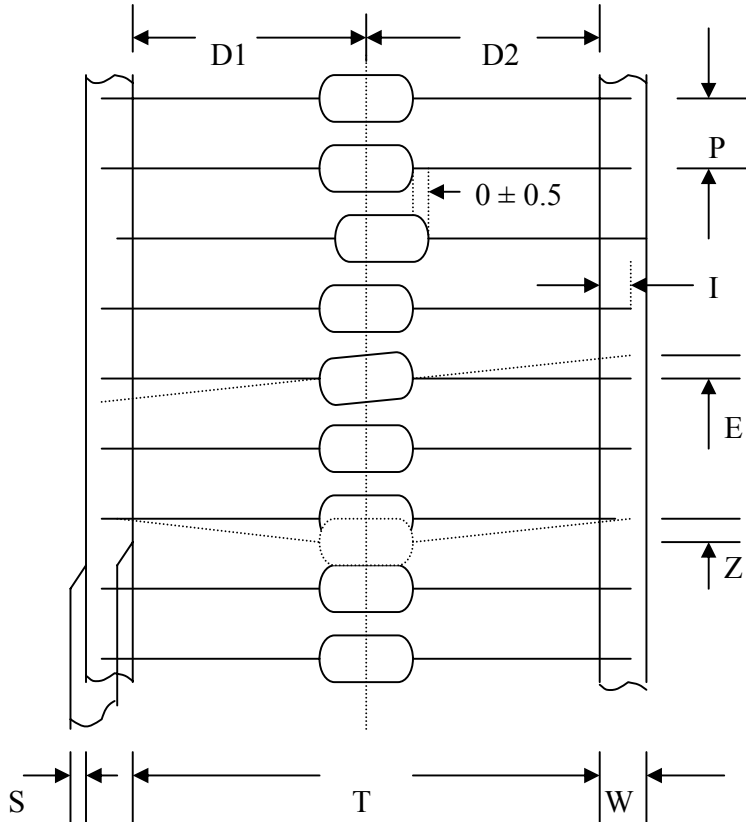


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### TAPE DIMENSION



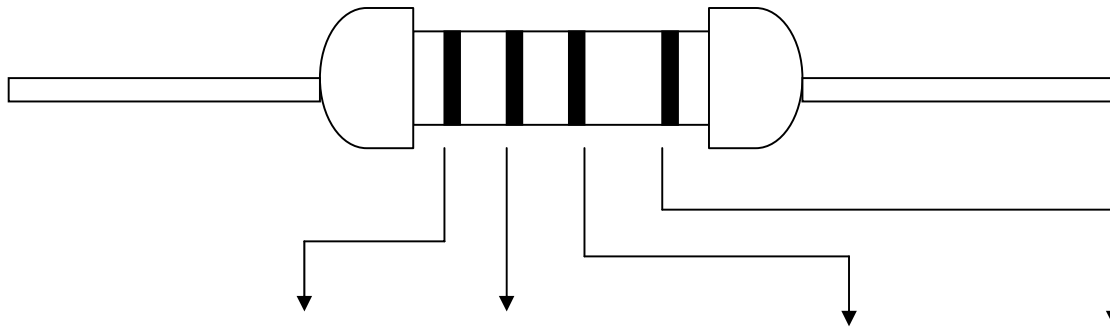
Unit:m/m

| TYPE        | SIZE | T            | P<br>$\pm 0.5$ | W<br>$\pm 0.5$ | D1,D2<br>$\pm 1$ | E<br>Max. | Z<br>Max. | S<br>Max. | I<br>Min. |
|-------------|------|--------------|----------------|----------------|------------------|-----------|-----------|-----------|-----------|
| EC22 (0204) | T-52 | 52 $\pm$ 2.0 | 5              | 6              | 26               | 1         | 1.2       | 1         | 3.2       |
| EC24 (0307) | T-52 | 52 $\pm$ 2.0 | 5              | 6              | 26               | 1         | 1.2       | 1         | 3.2       |
| EC36 (0410) | T-52 | 52 $\pm$ 2.0 | 5              | 6              | 26               | 1         | 1.2       | 1         | 3.2       |
| EC38 (0412) | T-52 | 52 $\pm$ 2.0 | 5              | 6              | 26               | 1         | 1.2       | 1         | 3.2       |
| EC46 (0510) | T-52 | 52 $\pm$ 2.0 | 5              | 6              | 26               | 1         | 1.2       | 1         | 3.2       |

Figure3



### 6. COLOR CODING



| Color  | 1st, 2nd<br>(Significant Figure) |   | 3rd<br>(Multiplier) | 4th<br>(Tolerance) |
|--------|----------------------------------|---|---------------------|--------------------|
| Black  | 0                                | 0 | $10^0$              | M ( ±20% )         |
| Brown  | 1                                | 1 | $10^1$              |                    |
| Red    | 2                                | 2 | $10^2$              |                    |
| Orange | 3                                | 3 | $10^3$              |                    |
| Yellow | 4                                | 4 | $10^4$              |                    |
| Green  | 5                                | 5 | $10^5$              |                    |
| Blue   | 6                                | 6 | $10^6$              |                    |
| Violet | 7                                | 7 | $10^7$              |                    |
| Gray   | 8                                | 8 | $10^8$              |                    |
| White  | 9                                | 9 | $10^9$              |                    |
| Gold   |                                  |   | $10^{-1}$           | J ( ±5% )          |
| Silver |                                  |   | $10^{-2}$           | K ( ±10% )         |

**TOLERANCE : ( NOT MARKED FOR EC22 )**

Figure4



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### EC22 TYPE

| PART NO.  | INDUCTANCE<br>( $\mu$ H) | QUALITY<br>FACTOR<br>(MIN) | TESTING<br>FREQ.<br>(MHz) | S.R.F.<br>(MHz)<br>MIN | DC<br>RESISTANCE<br>( $\Omega$ ) MAX | RATED DC<br>CURRENT<br>(mA) MAX |
|-----------|--------------------------|----------------------------|---------------------------|------------------------|--------------------------------------|---------------------------------|
| EC22-R10M | 0.10                     | 50                         | 25.2                      | 250                    | 0.030                                | 700                             |
| EC22-R12M | 0.12                     | 55                         | 25.2                      | 230                    | 0.035                                | 660                             |
| EC22-R15M | 0.15                     | 55                         | 25.2                      | 200                    | 0.040                                | 620                             |
| EC22-R18M | 0.18                     | 55                         | 25.2                      | 180                    | 0.045                                | 600                             |
| EC22-R22M | 0.22                     | 55                         | 25.2                      | 160                    | 0.050                                | 400                             |
| EC22-E27M | 0.27                     | 50                         | 25.2                      | 150                    | 0.065                                | 380                             |
| EC22-R33M | 0.33                     | 50                         | 25.2                      | 150                    | 0.075                                | 370                             |
| EC22-R39M | 0.39                     | 50                         | 25.2                      | 150                    | 0.080                                | 350                             |
| EC22-R47M | 0.47                     | 60                         | 25.2                      | 150                    | 0.085                                | 330                             |
| EC22-R56M | 0.56                     | 60                         | 25.2                      | 150                    | 0.090                                | 320                             |
| EC22-R68M | 0.68                     | 50                         | 25.2                      | 120                    | 0.10                                 | 310                             |
| EC22-R82M | 0.82                     | 50                         | 25.2                      | 110                    | 0.15                                 | 290                             |
| EC22-1R0K | 1.0                      | 50                         | 25.2                      | 110                    | 0.22                                 | 270                             |
| EC22-1R2K | 1.2                      | 40                         | 7.96                      | 100                    | 0.30                                 | 260                             |
| EC22-1R5K | 1.5                      | 40                         | 7.96                      | 80                     | 0.35                                 | 250                             |
| EC22-1R8K | 1.8                      | 40                         | 7.96                      | 65                     | 0.45                                 | 240                             |
| EC22-2R2K | 2.2                      | 40                         | 7.96                      | 55                     | 0.55                                 | 230                             |
| EC22-2R7K | 2.7                      | 40                         | 7.96                      | 50                     | 0.60                                 | 220                             |
| EC22-3R3K | 3.3                      | 40                         | 7.96                      | 42                     | 0.65                                 | 210                             |
| EC22-3R9K | 3.9                      | 45                         | 7.96                      | 38                     | 0.85                                 | 200                             |
| EC22-4R7K | 4.7                      | 45                         | 7.96                      | 34                     | 1.00                                 | 190                             |
| EC22-5R6K | 5.6                      | 45                         | 7.96                      | 32                     | 1.15                                 | 180                             |
| EC22-6R8K | 6.8                      | 40                         | 7.96                      | 30                     | 1.20                                 | 175                             |
| EC22-8R2K | 8.2                      | 40                         | 7.96                      | 26                     | 1.25                                 | 165                             |
| EC22-100K | 10                       | 40                         | 7.96                      | 24                     | 1.5                                  | 160                             |
| EC22-120K | 12                       | 50                         | 2.52                      | 22                     | 2.2                                  | 150                             |
| EC22-150K | 15                       | 50                         | 2.52                      | 20                     | 2.5                                  | 145                             |
| EC22-180K | 18                       | 50                         | 2.52                      | 18                     | 2.8                                  | 140                             |
| EC22-220K | 22                       | 50                         | 2.52                      | 17                     | 3.0                                  | 130                             |
| EC22-270K | 27                       | 55                         | 2.52                      | 14                     | 3.5                                  | 80                              |
| EC22-330K | 33                       | 55                         | 2.52                      | 14                     | 3.8                                  | 76                              |
| EC22-390K | 39                       | 50                         | 2.52                      | 13                     | 4.2                                  | 74                              |
| EC22-470K | 47                       | 50                         | 2.52                      | 12                     | 5.8                                  | 70                              |
| EC22-560K | 56                       | 50                         | 2.52                      | 11                     | 6.4                                  | 68                              |
| EC22-680K | 68                       | 50                         | 2.52                      | 10                     | 7.2                                  | 64                              |
| EC22-820K | 82                       | 50                         | 2.52                      | 9.5                    | 8.5                                  | 46                              |
| EC22-101K | 100                      | 50                         | 2.52                      | 9.0                    | 11                                   | 44                              |
| EC22-121K | 120                      | 40                         | 0.796                     | 6.5                    | 13                                   | 42                              |
| EC22-151K | 150                      | 40                         | 0.796                     | 6.0                    | 16                                   | 39                              |
| EC22-181K | 180                      | 40                         | 0.796                     | 5.2                    | 18                                   | 37                              |
| EC22-221K | 220                      | 40                         | 0.796                     | 4.5                    | 20                                   | 35                              |



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|-----------|------|----|-------|-----|----|----|
| EC22-271K | 270  | 30 | 0.796 | 3.5 | 29 | 28 |
| EC22-331K | 330  | 30 | 0.796 | 3.0 | 30 | 26 |
| EC22-391K | 390  | 30 | 0.796 | 2.7 | 32 | 25 |
| EC22-471K | 470  | 30 | 0.796 | 2.6 | 35 | 24 |
| EC22-561K | 560  | 30 | 0.796 | 2.5 | 40 | 23 |
| EC22-681K | 680  | 30 | 0.796 | 2.2 | 42 | 22 |
| EC22-821K | 820  | 30 | 0.796 | 2.1 | 46 | 21 |
| EC22-102K | 1000 | 30 | 0.796 | 2.0 | 52 | 20 |



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### EC24 TYPE

| PART NO.  | INDUCTANCE<br>( $\mu$ H) | QUALITY<br>FACTOR<br>(MIN) | TESTING<br>FREQ.<br>(MHz) | S.R.F.<br>(MHz)<br>MIN | DC<br>RESISTANCE<br>( $\Omega$ ) MAX | RATED DC<br>CURRENT<br>(mA) MAX |
|-----------|--------------------------|----------------------------|---------------------------|------------------------|--------------------------------------|---------------------------------|
| EC24-R10K | 0.10                     | 40                         | 25.2                      | 470                    | 0.08                                 | 700                             |
| EC24-R12K | 0.12                     | 40                         | 25.5                      | 450                    | 0.08                                 | 700                             |
| EC24-R15K | 0.15                     | 40                         | 25.2                      | 430                    | 0.09                                 | 700                             |
| EC24-R18K | 0.18                     | 40                         | 25.5                      | 410                    | 0.10                                 | 700                             |
| EC24-R22K | 0.22                     | 40                         | 25.2                      | 380                    | 0.12                                 | 700                             |
| EC24-R27K | 0.27                     | 40                         | 25.5                      | 360                    | 0.15                                 | 680                             |
| EC24-R33K | 0.33                     | 40                         | 25.2                      | 350                    | 0.16                                 | 680                             |
| EC24-R39K | 0.39                     | 40                         | 25.5                      | 320                    | 0.18                                 | 680                             |
| EC24-R47K | 0.47                     | 40                         | 25.2                      | 300                    | 0.26                                 | 650                             |
| EC24-R56K | 0.56                     | 40                         | 25.5                      | 280                    | 0.38                                 | 500                             |
| EC24-R68K | 0.68                     | 40                         | 25.2                      | 250                    | 0.42                                 | 500                             |
| EC24-R82K | 0.82                     | 40                         | 25.5                      | 200                    | 0.55                                 | 450                             |
| EC24-1R0K | 1.0                      | 65                         | 25.2                      | 180                    | 0.12                                 | 700                             |
| EC24-1R2K | 1.2                      | 50                         | 7.96                      | 165                    | 0.18                                 | 740                             |
| EC24-1R5K | 1.5                      | 50                         | 7.96                      | 150                    | 0.20                                 | 700                             |
| EC24-1R8K | 1.8                      | 70                         | 7.96                      | 125                    | 0.23                                 | 655                             |
| EC24-2R2K | 2.2                      | 50                         | 7.96                      | 110                    | 0.25                                 | 630                             |
| EC24-2R7K | 2.7                      | 60                         | 7.96                      | 95                     | 0.28                                 | 595                             |
| EC24-3R3K | 3.3                      | 60                         | 7.96                      | 75                     | 0.30                                 | 575                             |
| EC24-3R9K | 3.9                      | 60                         | 7.96                      | 65                     | 0.32                                 | 555                             |
| EC24-4R7K | 4.7                      | 50                         | 7.96                      | 50                     | 0.35                                 | 530                             |
| EC24-5R6K | 5.6                      | 50                         | 7.96                      | 40                     | 0.40                                 | 500                             |
| EC24-6R8K | 6.8                      | 50                         | 7.96                      | 30                     | 0.45                                 | 470                             |
| EC24-8R2K | 8.2                      | 50                         | 7.96                      | 28                     | 0.55                                 | 425                             |
| EC24-100K | 10                       | 50                         | 7.96                      | 22                     | 0.72                                 | 370                             |
| EC24-120K | 12                       | 50                         | 2.52                      | 20                     | 0.80                                 | 350                             |
| EC24-150K | 15                       | 50                         | 2.52                      | 16                     | 0.88                                 | 335                             |
| EC24-180K | 18                       | 50                         | 2.52                      | 15                     | 1.00                                 | 315                             |
| EC24-220K | 22                       | 60                         | 2.52                      | 13                     | 1.20                                 | 285                             |
| EC24-270K | 27                       | 60                         | 2.52                      | 11                     | 1.35                                 | 270                             |
| EC24-330K | 33                       | 50                         | 2.52                      | 10                     | 1.50                                 | 255                             |
| EC24-390K | 39                       | 50                         | 2.52                      | 9.5                    | 1.70                                 | 240                             |
| EC24-470K | 47                       | 50                         | 2.52                      | 8.5                    | 2.30                                 | 205                             |
| EC24-560K | 56                       | 55                         | 2.52                      | 7.5                    | 2.60                                 | 195                             |
| EC24-680K | 68                       | 55                         | 2.52                      | 6.5                    | 2.90                                 | 185                             |
| EC24-820K | 82                       | 55                         | 2.52                      | 6.0                    | 3.20                                 | 175                             |
| EC24-101K | 100                      | 60                         | 2.52                      | 5.5                    | 3.50                                 | 165                             |
| EC24-121K | 120                      | 75                         | 0.796                     | 5.4                    | 3.80                                 | 160                             |
| EC24-151K | 150                      | 75                         | 0.796                     | 4.75                   | 4.40                                 | 150                             |
| EC24-181K | 180                      | 75                         | 0.796                     | 4.35                   | 5.00                                 | 140                             |
| EC24-221K | 220                      | 75                         | 0.796                     | 4.0                    | 5.70                                 | 130                             |

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|-----------|------|----|-------|------|------|-----|
| EC24-271K | 270  | 70 | 0.796 | 3.7  | 6.50 | 120 |
| EC24-331K | 330  | 70 | 0.796 | 3.4  | 9.50 | 100 |
| EC24-391K | 390  | 70 | 0.796 | 2.8  | 10.5 | 95  |
| EC24-471K | 470  | 70 | 0.796 | 2.55 | 12.5 | 90  |
| EC24-561K | 560  | 70 | 0.796 | 2.35 | 14.5 | 85  |
| EC24-681K | 680  | 70 | 0.796 | 2.0  | 18.0 | 75  |
| EC24-821K | 820  | 60 | 0.796 | 1.6  | 23.7 | 65  |
| EC24-102K | 1000 | 60 | 0.796 | 1.2  | 30.0 | 60  |



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### EC36 TYPE

| PART NO.  | INDUCTANCE<br>( $\mu$ H) | QUALITY<br>FACTOR<br>(MIN) | TESTING<br>FREQ.<br>(MHz) | S.R.F.<br>(MHz)<br>MIN | DC<br>RESISTANCE<br>( $\Omega$ ) MAX | RATED DC<br>CURRENT<br>(mA) MAX |
|-----------|--------------------------|----------------------------|---------------------------|------------------------|--------------------------------------|---------------------------------|
| EC36-R10K | 0.10                     | 50                         | 25.2                      | 470                    | 0.04                                 | 900                             |
| EC36-R12K | 0.12                     | 50                         | 25.5                      | 450                    | 0.06                                 | 900                             |
| EC36-R15K | 0.15                     | 50                         | 25.2                      | 430                    | 0.07                                 | 890                             |
| EC36-R18K | 0.18                     | 50                         | 25.5                      | 410                    | 0.07                                 | 890                             |
| EC36-R22K | 0.22                     | 50                         | 25.2                      | 380                    | 0.08                                 | 880                             |
| EC36-E27K | 0.27                     | 50                         | 25.5                      | 340                    | 0.09                                 | 800                             |
| EC36-R33K | 0.33                     | 50                         | 25.2                      | 300                    | 0.10                                 | 750                             |
| EC36-R39K | 0.39                     | 50                         | 25.5                      | 280                    | 0.12                                 | 680                             |
| EC36-R47K | 0.47                     | 50                         | 25.2                      | 250                    | 0.16                                 | 650                             |
| EC36-R56K | 0.56                     | 50                         | 25.5                      | 230                    | 0.18                                 | 600                             |
| EC36-R68K | 0.68                     | 50                         | 25.2                      | 210                    | 0.22                                 | 550                             |
| EC36-R82K | 0.82                     | 50                         | 25.5                      | 172                    | 0.24                                 | 980                             |
| EC36-1R0K | 1.0                      | 50                         | 25.2                      | 157                    | 0.09                                 | 920                             |
| EC36-1R2K | 1.2                      | 50                         | 7.96                      | 144                    | 0.10                                 | 880                             |
| EC36-1R5K | 1.5                      | 55                         | 7.96                      | 131                    | 0.23                                 | 830                             |
| EC36-1R8K | 1.8                      | 60                         | 7.96                      | 121                    | 0.25                                 | 790                             |
| EC36-2R2K | 2.02                     | 80                         | 7.96                      | 110                    | 0.28                                 | 750                             |
| EC36-2R7K | 2.7                      | 85                         | 7.96                      | 100                    | 0.30                                 | 720                             |
| EC36-3R3K | 3.3                      | 90                         | 7.96                      | 94                     | 0.34                                 | 670                             |
| EC36-3R9K | 3.9                      | 90                         | 7.96                      | 86                     | 0.37                                 | 640                             |
| EC36-4R7K | 4.7                      | 90                         | 7.96                      | 80                     | 0.39                                 | 620                             |
| EC36-5R6K | 5.6                      | 80                         | 7.96                      | 74                     | 0.43                                 | 590                             |
| EC36-6R8K | 6.8                      | 80                         | 7.96                      | 58                     | 0.48                                 | 550                             |
| EC36-8R2K | 8.2                      | 85                         | 7.96                      | 53                     | 0.52                                 | 530                             |
| EC36-100K | 10                       | 85                         | 7.96                      | 45                     | 0.58                                 | 500                             |
| EC36-120K | 12                       | 75                         | 2.52                      | 30                     | 0.63                                 | 480                             |
| EC36-150K | 15                       | 75                         | 2.52                      | 20                     | 0.72                                 | 460                             |
| EC36-180K | 18                       | 70                         | 2.52                      | 14                     | 0.77                                 | 430                             |
| EC36-220K | 22                       | 65                         | 2.52                      | 9.9                    | 0.84                                 | 410                             |
| EC36-270K | 27                       | 65                         | 2.52                      | 7.6                    | 0.94                                 | 390                             |
| EC36-330K | 33                       | 55                         | 2.52                      | 6.3                    | 1.03                                 | 370                             |
| EC36-390K | 39                       | 55                         | 2.52                      | 6.3                    | 1.12                                 | 350                             |
| EC36-470K | 47                       | 45                         | 2.52                      | 6.3                    | 1.22                                 | 340                             |
| EC36-560K | 56                       | 45                         | 2.52                      | 6.2                    | 1.34                                 | 320                             |
| EC36-680K | 68                       | 40                         | 2.52                      | 5.7                    | 1.47                                 | 305                             |
| EC36-820K | 82                       | 35                         | 2.52                      | 5.3                    | 1.62                                 | 290                             |
| EC36-101K | 100                      | 30                         | 2.52                      | 4.8                    | 1.80                                 | 275                             |
| EC36-121K | 120                      | 70                         | 0.796                     | 3.8                    | 3.70                                 | 185                             |
| EC36-151K | 150                      | 80                         | 0.796                     | 3.5                    | 4.20                                 | 175                             |
| EC36-181K | 180                      | 80                         | 0.796                     | 3.3                    | 4.60                                 | 165                             |
| EC36-221K | 220                      | 70                         | 0.796                     | 3.0                    | 5.10                                 | 155                             |



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|-----------|------|----|-------|------|------|-----|
| EC36-271K | 270  | 70 | 0.796 | 2.8  | 5.80 | 145 |
| EC36-331K | 330  | 65 | 0.796 | 2.6  | 6.40 | 137 |
| EC36-391K | 390  | 65 | 0.796 | 2.4  | 7.00 | 133 |
| EC36-471K | 470  | 60 | 0.796 | 2.25 | 7.70 | 126 |
| EC36-561K | 560  | 60 | 0.796 | 2.1  | 8.50 | 120 |
| EC36-681K | 680  | 55 | 0.796 | 1.95 | 9.40 | 113 |
| EC36-821K | 820  | 55 | 0.796 | 1.85 | 12.0 | 100 |
| EC36-102K | 1000 | 50 | 0.252 | 1.40 | 17.0 | 100 |



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### EC38 TYPE

| PART NO.  | INDUCTANCE<br>( $\mu$ H) | TESTING<br>FREQ.<br>(MHz) | S.R.F.<br>(MHz)<br>MIN | DC<br>RESISTANCE<br>( $\Omega$ ) MAX | RATED CURRENT(mA) |               |
|-----------|--------------------------|---------------------------|------------------------|--------------------------------------|-------------------|---------------|
|           |                          |                           |                        |                                      | I sat<br>MAX.     | I rms<br>MAX. |
| EC38-1R0M | 1.0                      | 7.96MHz                   | 190                    | 0.018                                | 3000              | 3300          |
| EC38-1R2M | 1.2                      | 7.96MHz                   | 170                    | 0.019                                | 2700              | 3200          |
| EC38-1R5M | 1.5                      | 7.96MHz                   | 160                    | 0.020                                | 2500              | 3100          |
| EC38-1R8M | 1.8                      | 7.96MHz                   | 150                    | 0.023                                | 2100              | 2900          |
| EC38-2R2M | 2.2                      | 7.96MHz                   | 130                    | 0.031                                | 1000              | 2600          |
| EC38-2R7M | 2.7                      | 7.96MHz                   | 120                    | 0.033                                | 1900              | 2500          |
| EC38-3R3M | 3.3                      | 7.96MHz                   | 110                    | 0.054                                | 1700              | 1900          |
| EC38-3R9M | 3.9                      | 7.96MHz                   | 100                    | 0.060                                | 1500              | 1800          |
| EC38-4R7K | 4.7                      | 7.96MHz                   | 86                     | 0.068                                | 1400              | 1700          |
| EC38-5R6K | 5.6                      | 7.96MHz                   | 64                     | 0.074                                | 1300              | 1600          |
| EC38-6R8K | 6.8                      | 7.96MHz                   | 44                     | 0.080                                | 1200              | 1600          |
| EC38-8R2K | 8.2                      | 7.96MHz                   | 32                     | 0.087                                | 1100              | 1500          |
| EC38-100K | 10                       | 1kHz                      | 25                     | 0.095                                | 970               | 1500          |
| EC38-120K | 12                       | 1kHz                      | 17                     | 0.110                                | 880               | 1400          |
| EC38-150K | 15                       | 1kHz                      | 13                     | 0.150                                | 790               | 1200          |
| EC38-180K | 18                       | 1kHz                      | 10                     | 0.16                                 | 710               | 1100          |
| EC38-220K | 22                       | 1kHz                      | 8.40                   | 0.19                                 | 640               | 1000          |
| EC38-270K | 27                       | 1kHz                      | 8.00                   | 0.22                                 | 580               | 950           |
| EC38-330K | 33                       | 1kHz                      | 7.60                   | 0.24                                 | 530               | 910           |
| EC38-390K | 39                       | 1kHz                      | 7.10                   | 0.26                                 | 480               | 880           |
| EC38-470K | 47                       | 1kHz                      | 6.00                   | 0.35                                 | 430               | 760           |
| EC38-560K | 56                       | 1kHz                      | 5.80                   | 0.47                                 | 400               | 650           |
| EC38-680K | 68                       | 1kHz                      | 4.30                   | 0.53                                 | 370               | 610           |
| EC38-820K | 82                       | 1kHz                      | 4.10                   | 0.60                                 | 330               | 580           |
| EC38-101K | 100                      | 1kHz                      | 3.90                   | 0.67                                 | 300               | 550           |
| EC38-121K | 120                      | 1kHz                      | 3.60                   | 0.90                                 | 270               | 470           |
| EC38-151K | 150                      | 1kHz                      | 3.20                   | 1.20                                 | 250               | 410           |
| EC38-181K | 180                      | 1kHz                      | 2.80                   | 1.40                                 | 220               | 380           |
| EC38-221K | 220                      | 1kHz                      | 2.30                   | 1.90                                 | 200               | 320           |
| EC38-271K | 270                      | 1kHz                      | 2.10                   | 2.10                                 | 180               | 310           |
| EC38-331K | 330                      | 1kHz                      | 1.90                   | 2.40                                 | 170               | 290           |
| EC38-391K | 390                      | 1kHz                      | 1.70                   | 3.00                                 | 150               | 260           |
| EC38-471K | 470                      | 1kHz                      | 1.40                   | 3.40                                 | 140               | 240           |
| EC38-561K | 560                      | 1kHz                      | 1.30                   | 4.70                                 | 130               | 210           |
| EC38-681K | 680                      | 1kHz                      | 1.20                   | 6.40                                 | 110               | 180           |
| EC38-821K | 820                      | 1kHz                      | 1.10                   | 7.10                                 | 100               | 170           |
| EC38-102K | 1000                     | 1kHz                      | 1.00                   | 7.90                                 | 95                | 160           |
| EC38-122K | 1200                     | 1kHz                      | 0.94                   | 9.00                                 | 87                | 150           |
| EC38-152K | 1500                     | 1kHz                      | 0.76                   | 12.0                                 | 78                | 130           |
| EC38-182K | 1800                     | 1kHz                      | 0.72                   | 14.0                                 | 71                | 120           |



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## FIXED INDUCTORS

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|-----------|-------|------|------|------|----|-----|
| EC38-222K | 2200  | 1kHz | 0.64 | 19.0 | 64 | 100 |
| EC38-272K | 2700  | 1kHz | 0.56 | 25.0 | 58 | 90  |
| EC38-332K | 3300  | 1kHz | 0.53 | 29.0 | 52 | 83  |
| EC38-392K | 3900  | 1kHz | 0.48 | 34.0 | 48 | 77  |
| EC38-472K | 4700  | 1kHz | 0.45 | 37.0 | 44 | 74  |
| EC38-562K | 5600  | 1kHz | 0.40 | 50.0 | 40 | 63  |
| EC38-682K | 6800  | 1kHz | 0.36 | 58.0 | 36 | 59  |
| EC38-822K | 8200  | 1kHz | 0.29 | 68.0 | 33 | 54  |
| EC38-103K | 10000 | 1kHz | 0.27 | 75.0 | 30 | 52  |



# SYNTON-TECH CORPORATION

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### EC46 TYPE

| PART NO.  | INDUCTANCE (MH) | QUALITY FACTOR (MIN) | TESTING FREQ. (MHz) | S.R.F. (MHz) MIN | DC RESISTANCE ( Ω ) MAX | RATED DC CURRENT (mA) MAX |
|-----------|-----------------|----------------------|---------------------|------------------|-------------------------|---------------------------|
| EC46-122K | 1.2             | 80                   | 252                 | 1.3              | 9                       | 110                       |
| EC46-152K | 1.5             | 80                   | 252                 | 1.2              | 10                      | 100                       |
| EC46-182K | 1.8             | 80                   | 252                 | 1.2              | 11                      | 90                        |
| EC46-222K | 2.2             | 80                   | 252                 | 1.1              | 14                      | 80                        |
| EC46-272K | 2.7             | 80                   | 252                 | 0.85             | 18                      | 75                        |
| EC46-332K | 3.3             | 80                   | 252                 | 0.74             | 22                      | 65                        |
| EC46-392K | 3.9             | 80                   | 252                 | 0.70             | 26                      | 60                        |
| EC46-472K | 4.7             | 80                   | 252                 | 0.66             | 30                      | 55                        |
| EC46-562K | 5.6             | 70                   | 252                 | 0.64             | 34                      | 50                        |
| EC46-682K | 6.8             | 70                   | 252                 | 0.58             | 45                      | 45                        |
| EC46-822K | 8.2             | 50                   | 252                 | 0.50             | 60                      | 40                        |
| EC46-103K | 10              | 50                   | 79.6                | 0.48             | 70                      | 38                        |
| EC46-123K | 12              | 50                   | 79.6                | 0.46             | 82                      | 35                        |
| EC46-153K | 15              | 50                   | 79.6                | 0.40             | 89                      | 32                        |
| EC46-183K | 18              | 40                   | 79.6                | 0.37             | 140                     | 28                        |
| EC46-223K | 22              | 40                   | 79.6                | 0.33             | 170                     | 25                        |
| EC46-253K | 25              | 40                   | 79.6                | 0.28             | 185                     | 24                        |
| EC46-273K | 27              | 40                   | 79.6                | 0.26             | 210                     | 23                        |
| EC46-303K | 30              | 40                   | 79.6                | 0.25             | 240                     | 22                        |
| EC46-333K | 33              | 40                   | 79.6                | 0.24             | 250                     | 20                        |

**J±5% ;                    K±10% ;                    M±20%**

**( Customer'S Specifications Are Welcome )**



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16F-3, NO. 79, FAR EAST WORLD CENTER SEC. 1, HSIN TAI WU ROAD, HSI-CHIH  
DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.  
(SHUI KOU INDUSTRIAL ZONE DA LANG, DONG GUAN, GUANG DONG, CHINA)



The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Description : FIXED INDUCTORS  
Style/Item No. : EC TYPE  
Sample Receiving Date : 2011/05/06 AND 2011/06/15  
Testing Period : 2011/05/06 TO 2011/05/12 AND 2011/05/06 TO 2011/05/13 AND  
2011/06/15 TO 2011/06/22

Test Result(s) : Please refer to next page(s).

\* This report is combined with reports of CE/2011/51352A and CE/2011/65182 \*

  
**SGS TAIWAN LTD**  
**SGS**  
Chenyu Kung / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.  
Chemical Laboratory – Taipei

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DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.  
(SHUI KOU INDUSTRIAL ZONE DA LANG, DONG GUAN, GUANG DONG, CHINA)



**Test Result(s)**

- PART NAME No.1 : GREEN/BLUE SOLID STUFF (CE/2011/51352)
- PART NAME No.2 : DK. GRAY CORE (DR&RI CORE) (CE/2011/51283 NO.1)
- PART NAME No.3 : COPPER COLORED METAL WIRE (WIRE) (CE/2011/51283 NO.2)
- PART NAME No.4 : SILVER COLORED METAL LUMP (SOLDER) (CE/2011/65182)
- PART NAME No.5 : SILVER COLORED METAL WIRE (INCLUDING THE PLATING LAYER) (LEAD WIRE) (CE/2011/51283 NO.4)
- PART NAME No.6 : DK. GRAY EPOXY (EPOXY) (CE/2011/51283 NO.6)

| Test Item (s):   | Unit  | Method   | MDL   | Result |      |          |          |          |
|--|-------|--|---|--------|------|----------|----------|----------|
|  |       |  |   | No.1   | No.2 | No.3     | No.4     | No.5     |
| Cadmium (Cd)   | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.  | 2   | n.d.   | n.d. | n.d.     | n.d.     | n.d.     |
| Lead (Pb)  | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.  | 2   | n.d.   | n.d. | n.d.     | 117      | 11       |
| Mercury (Hg)   | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES.  | 2   | n.d.   | n.d. | n.d.     | n.d.     | n.d.     |
| Hexavalent Chromium Cr(VI) by alkaline extraction                  | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS.   | 2   | n.d.   | n.d. | ---      | ---      | ---      |
| Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction | **    | With reference to IEC 62321: 2008 and performed by Spot test / boiling water extraction Method. (See Note 5) | 0.02 mg/kg with 50 cm <sup>2</sup> surface area | ---    | ---  | Negative | ---      | Negative |
| Hexavalent Chromium Cr(VI) by Boiling water extraction             | **    | Determination of Hexavalent Chromium by Boiling water extraction Method.                                     | #   | ---    | ---  | ---      | Negative | ---      |

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 DISTRICT, NEW TAIPEI CITY, TAIWAN, R. O. C.  
 (SHUI KOU INDUSTRIAL ZONE DA LANG, DONG GUAN, GUANG DONG, CHINA)



| Test Item (s):                              | Unit  | Method  | MDL | Result |      |      |      |      |     |     |
|---|-------|---|-----|--------|------|------|------|------|-----|-----|
|   |       |   |     | No.1   | No.2 | No.3 | No.4 | No.5 |     |     |
| <b>Halogen</b>                              |       |   |     |        |      |      |      |      |     |     |
| Halogen-Fluorine (F) (CAS No.: 14762-94-8)  | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50  | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) |       |   | 50  | 406    | ---  | ---  | ---  | ---  |     |     |
| Halogen-Bromine (Br) (CAS No.: 10097-32-2)  |       |   | 50  | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Halogen-Iodine (I) (CAS No.: 14362-44-8)    |       |   | 50  | n.d.   | ---  | ---  | ---  | ---  |     |     |
| <b>Sum of PBBs</b>                          | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS.         | -   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Monobromobiphenyl                           |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Dibromobiphenyl                             |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Tribromobiphenyl                            |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Tetrabromobiphenyl                          |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Pentabromobiphenyl                          |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Hexabromobiphenyl                           |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Heptabromobiphenyl                          |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Octabromobiphenyl                           |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Nonabromobiphenyl                           |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Decabromobiphenyl                           |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| <b>Sum of PBDEs</b>                         |       |   |     |        | -    | n.d. | ---  | ---  | --- | --- |
| Monobromodiphenyl ether                     |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Dibromodiphenyl ether                       |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Tribromodiphenyl ether                      |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Tetrabromodiphenyl ether                    |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Pentabromodiphenyl ether                    |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Hexabromodiphenyl ether                     |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Heptabromodiphenyl ether                    |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Octabromodiphenyl ether                     |       |   |     |        | 5    | n.d. | ---  | ---  | --- | --- |
| Nonabromodiphenyl ether                     |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |
| Decabromodiphenyl ether                     |       |   | 5   | n.d.   | ---  | ---  | ---  | ---  |     |     |

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 (SHUI KOU INDUSTRIAL ZONE DA LANG, DONG GUAN, GUANG DONG, CHINA)



| Test Item (s):                                    | Unit  | Method  | MDL | Result |
|---|-------|---|-----|--------|
|   |       |   |     | No.6   |
| Cadmium (Cd)                                      | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2   | n.d.   |
| Lead (Pb)   | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2   | n.d.   |
| Mercury (Hg)                                      | mg/kg | With reference to IEC 62321: 2008 and performed by ICP-AES. | 2   | n.d.   |
| Hexavalent Chromium Cr(VI) by alkaline extraction | mg/kg | With reference to IEC 62321: 2008 and performed by UV-VIS.  | 2   | n.d.   |
| <b>Sum of PBBs</b>                                |       |   | -   | n.d.   |
| Monobromobiphenyl                                 |       |   | 5   | n.d.   |
| Dibromobiphenyl                                   |       |   | 5   | n.d.   |
| Tribromobiphenyl                                  |       |   | 5   | n.d.   |
| Tetrabromobiphenyl                                |       |   | 5   | n.d.   |
| Pentabromobiphenyl                                |       |   | 5   | n.d.   |
| Hexabromobiphenyl                                 |       |   | 5   | n.d.   |
| Heptabromobiphenyl                                |       |   | 5   | n.d.   |
| Octabromobiphenyl                                 |       |   | 5   | n.d.   |
| Nonabromobiphenyl                                 |       |   | 5   | n.d.   |
| Decabromobiphenyl                                 |       |   | 5   | n.d.   |
| <b>Sum of PBDEs</b>                               |       |   | -   | n.d.   |
| Monobromodiphenyl ether                           | mg/kg | With reference to IEC 62321: 2008 and performed by GC/MS.   | 5   | n.d.   |
| Dibromodiphenyl ether                             |       |   | 5   | n.d.   |
| Tribromodiphenyl ether                            |       |   | 5   | n.d.   |
| Tetrabromodiphenyl ether                          |       |   | 5   | n.d.   |
| Pentabromodiphenyl ether                          |       |   | 5   | n.d.   |
| Hexabromodiphenyl ether                           |       |   | 5   | n.d.   |
| Heptabromodiphenyl ether                          |       |   | 5   | n.d.   |
| Octabromodiphenyl ether                           |       |   | 5   | n.d.   |
| Nonabromodiphenyl ether                           |       |   | 5   | n.d.   |
| Decabromodiphenyl ether                           |       |   | 5   | n.d.   |

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| Test Item (s):                              | Unit  | Method  | MDL | Result<br>No.6 |
|---|-------|---|-----|----------------|
| <b>Halogen</b>                              |       |   |     |                |
| Halogen-Fluorine (F) (CAS No.: 14762-94-8)  | mg/kg | With reference to BS EN 14582:2007. Analysis was performed by IC. | 50  | 173            |
| Halogen-Chlorine (Cl) (CAS No.: 22537-15-1) |       |   | 50  | 588            |
| Halogen-Bromine (Br) (CAS No.: 10097-32-2)  |       |   | 50  | n.d.           |
| Halogen-Iodine (I) (CAS No.: 14362-44-8)    |       |   | 50  | n.d.           |

**Note :**

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected
3. MDL = Method Detection Limit
4. \*\* = Qualitative analysis (No Unit)
5. Spot-test:

- Negative = Absence of Cr(VI) coating / surface layer; Positive = Presence of Cr(VI) coating / surface layer;  
 (The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.)

**Boiling-water-extraction:**

Negative = Absence of Cr(VI) coating / surface layer; Positive = Presence of Cr(VI) coating / surface layer;  
 The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> sample surface area.

6. # = a. Positive means the presence of CrVI on the tested areas  
 b. Negative means the absence of CrVI on the tested areas

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas.

7. "-" = Not Regulated
8. "---" = Not Conducted

9. The sample(s) was/were analyzed on behalf of the applicant as mixing sample in one testing. The above result(s) was/were only given as the informality value.

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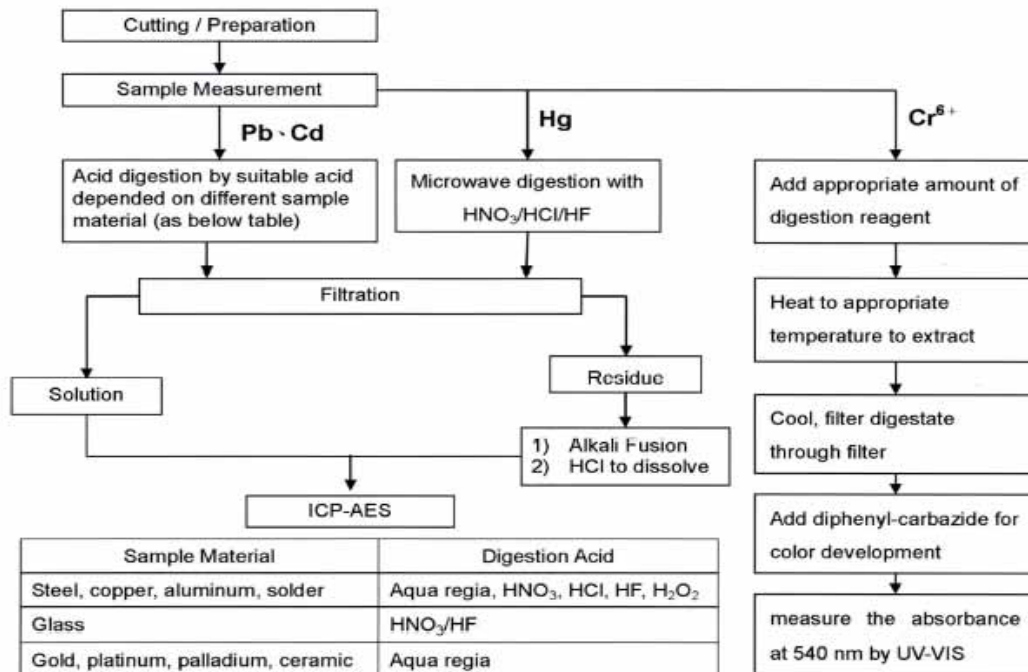
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- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



| Sample Material                    | Digestion Acid  |
|------------------------------------|---|
| Steel, copper, aluminum, solder    | Aqua regia, HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub>                   |
| Glass                              | HNO <sub>3</sub> /HF  |
| Gold, platinum, palladium, ceramic | Aqua regia  |
| Silver                             | HNO <sub>3</sub>  |
| Plastic                            | H <sub>2</sub> SO <sub>4</sub> , H <sub>2</sub> O <sub>2</sub> , HNO <sub>3</sub> , HCl |
| Others                             | Any acid to total digestion   |

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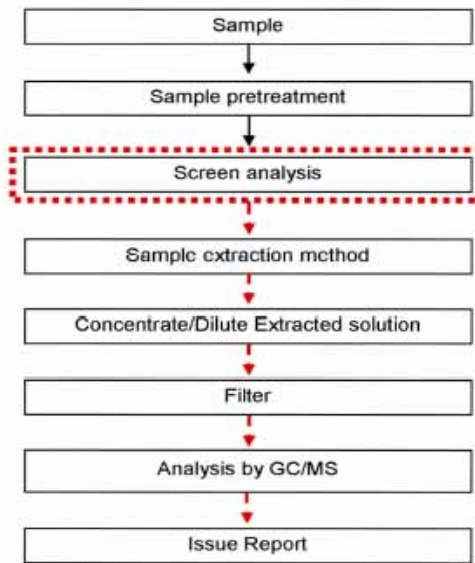


#### Analytical flow chart

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Troy Chang

■ Test Items: PBB/PBDE, TBBP-A-bis

First testing process → Optional screen process ..... Confirmation process - - ->



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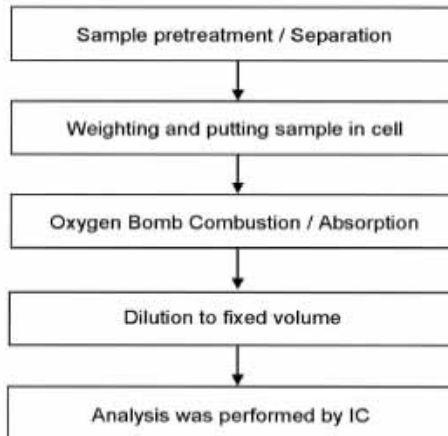
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**Analytical flow chart of halogen content**

- 1) Name of the person who made measurement: Rita Chen
- 2) Name of the person in charge of measurement: Troy Chang



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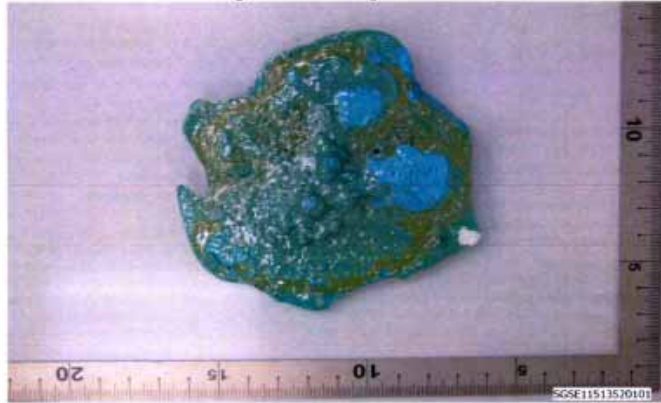
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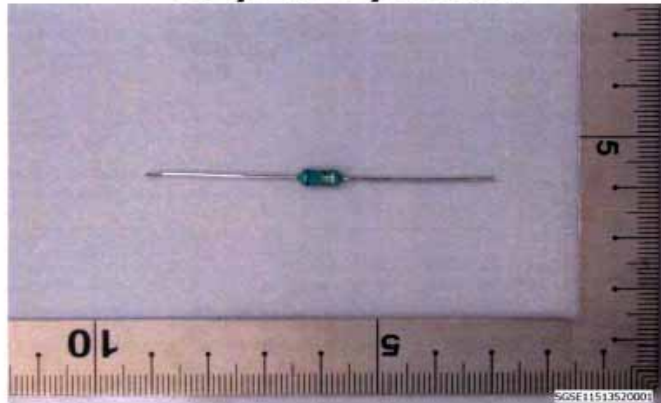


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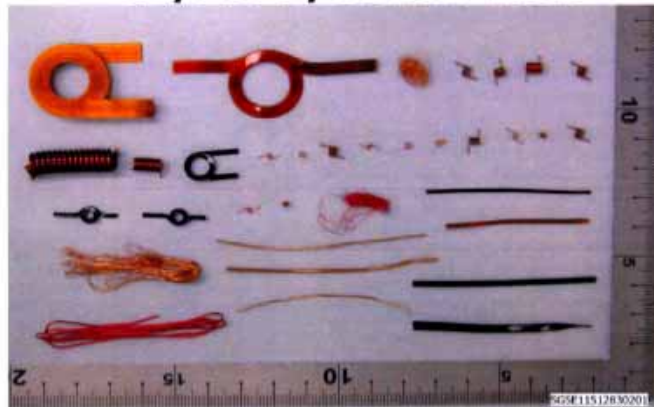
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