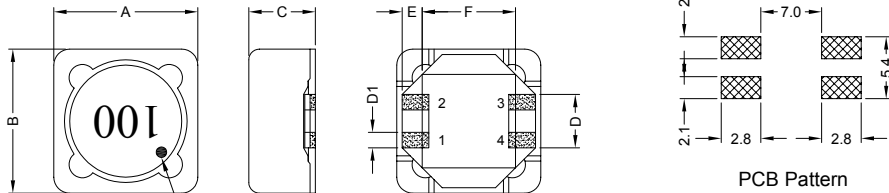


### 1. PART NO. EXPRESSION :

SPB1207100MZ F - □ □  
 (a) (b) (c) (d)(e)(f) (g)

- (a) Series code
- (b) Dimension code
- (c) Inductance code : 100 = 10uH
- (d) Tolerance code : M = ±20%, Y = ±30%
- (e) Z : Standard part
- (f) F : RoHS Compliant
- (g) 11 ~ 99 : Internal controlled number

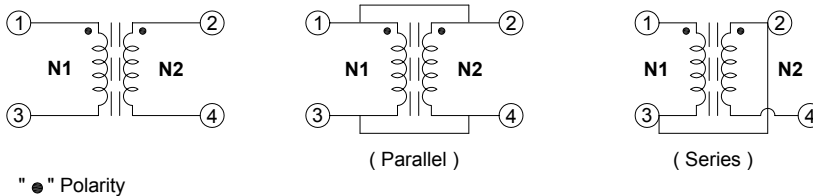
### 2. CONFIGURATION & DIMENSIONS :



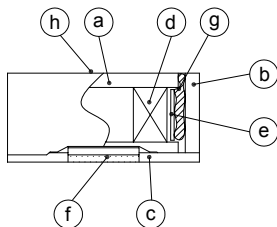
Unit:m/m

| A        | B        | C         | D         | D1        | E         | F        |
|----------|----------|-----------|-----------|-----------|-----------|----------|
| 12.5±0.3 | 12.5±0.3 | 8.00 Max. | 5.00 Ref. | 1.70 Ref. | 2.20 Ref. | 7.6 Ref. |

### 3. SCHEMATIC :



### 4. MATERIALS :



- (a) Core : DR Ferrite Core
- (b) Core : RI Ferrite Core
- (c) Base : LCP
- (d) Wire : Enamelled Copper Wire
- (e) Tape : #56
- (f) Terminal : Tinned Copper Plate
- (g) Adhesive : Epoxy Resin
- (h) Ink : Bon Marque



**RoHS Compliant**

NOTE : Specifications subject to change without notice. Please check our website for latest information.

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## 5. GENERAL SPECIFICATION :

- a)  $\Delta L/L0A$  : 30% Typ. at Isat
- b) Temp. Rise : 40°C Typ. at Irms
- c) Hi-Pot (N1-N2) : 200Vac / 3mA / 1sec
- d) Operating temp. : -40°C to +125°C
- e) Storage temp. : -40°C to +125°C
- f) Resistance to solder heat : 260°C.10secs

## 6. ELECTRICAL CHARACTERISTICS :

| Part No.         | Inductance<br>( $\mu$ H)<br>Ref. | Test<br>Frequency<br>( Hz ) | Parallel                         |                             |               |               | Series                           |                             |               |               |
|------------------|----------------------------------|-----------------------------|----------------------------------|-----------------------------|---------------|---------------|----------------------------------|-----------------------------|---------------|---------------|
|                  |                                  |                             | Inductance<br>( $\mu$ H)<br>Ref. | RDC<br>( $\Omega$ )<br>Max. | Isat<br>( A ) | Irms<br>( A ) | Inductance<br>( $\mu$ H)<br>Ref. | RDC<br>( $\Omega$ )<br>Max. | Isat<br>( A ) | Irms<br>( A ) |
| SPB1207R50YZF-□□ | 0.500                            | 0.25V/100K                  | 0.520                            | 0.0058                      | 35.00         | 13.50         | 1.900                            | 0.0260                      | 18.00         | 6.720         |
| SPB12071R0YZF-□□ | 1.000                            | 0.25V/100K                  | 0.821                            | 0.0085                      | 24.00         | 10.00         | 3.284                            | 0.0374                      | 12.00         | 5.000         |
| SPB12071R5YZF-□□ | 1.500                            | 0.25V/100K                  | 1.357                            | 0.0106                      | 19.00         | 8.60          | 5.428                            | 0.4500                      | 9.20          | 4.300         |
| SPB12072R2YZF-□□ | 2.200                            | 0.25V/100K                  | 2.027                            | 0.0127                      | 16.00         | 8.30          | 8.108                            | 0.0522                      | 7.60          | 4.150         |
| SPB12073R3YZF-□□ | 3.300                            | 0.25V/100K                  | 2.831                            | 0.0138                      | 14.00         | 8.30          | 11.320                           | 0.0570                      | 7.20          | 4.150         |
| SPB12074R5YZF-□□ | 4.500                            | 0.25V/100K                  | 4.380                            | 0.0169                      | 11.80         | 6.50          | 17.520                           | 0.0697                      | 5.90          | 3.250         |
| SPB12076R8YZF-□□ | 6.800                            | 0.25V/100K                  | 7.387                            | 0.0206                      | 9.70          | 5.50          | 29.550                           | 0.0899                      | 4.70          | 2.750         |
| SPB12078R2YZF-□□ | 8.200                            | 0.25V/100K                  | 8.861                            | 0.0223                      | 8.50          | 5.30          | 35.440                           | 0.0949                      | 4.15          | 2.650         |
| SPB1207100MZF-□□ | 10.000                           | 0.25V/100K                  | 10.470                           | 0.0238                      | 7.50          | 5.20          | 41.880                           | 0.1016                      | 3.80          | 2.600         |
| SPB1207150MZF-□□ | 15.000                           | 0.25V/100K                  | 14.090                           | 0.0301                      | 6.00          | 4.30          | 56.360                           | 0.1258                      | 2.95          | 2.150         |
| SPB1207220MZF-□□ | 22.000                           | 0.25V/100K                  | 22.930                           | 0.0391                      | 5.25          | 4.00          | 91.720                           | 0.1570                      | 2.60          | 2.000         |
| SPB1207330MZF-□□ | 33.000                           | 0.25V/100K                  | 33.920                           | 0.0600                      | 4.15          | 3.23          | 135.700                          | 0.2410                      | 2.10          | 1.610         |
| SPB1207470MZF-□□ | 47.000                           | 0.25V/100K                  | 47.050                           | 0.0719                      | 3.50          | 2.95          | 188.200                          | 0.2880                      | 1.80          | 1.470         |
| SPB1207680MZF-□□ | 68.000                           | 0.25V/100K                  | 66.480                           | 0.1050                      | 2.95          | 2.44          | 265.900                          | 0.4210                      | 1.50          | 1.220         |
| SPB1207820MZF-□□ | 82.000                           | 0.25V/100K                  | 79.750                           | 0.1430                      | 2.75          | 2.09          | 319.000                          | 0.5730                      | 1.40          | 1.040         |
| SPB1207101MZF-□□ | 100.000                          | 0.25V/100K                  | 99.310                           | 0.1630                      | 2.56          | 1.96          | 397.200                          | 0.6530                      | 1.28          | 0.980         |
| SPB1207151MZF-□□ | 150.000                          | 0.25V/100K                  | 144.90                           | 0.2470                      | 2.10          | 1.59          | 579.600                          | 0.9890                      | 1.05          | 0.796         |
| SPB1207221MZF-□□ | 220.000                          | 0.25V/100K                  | 221.50                           | 0.3760                      | 1.64          | 1.29          | 886.000                          | 1.5000                      | 0.84          | 0.645         |
| SPB1207331MZF-□□ | 330.000                          | 0.25V/100K                  | 323.60                           | 0.5740                      | 1.40          | 1.04          | 1294.000                         | 2.3000                      | 0.72          | 0.522         |
| SPB1207471MZF-□□ | 470.000                          | 0.25V/100K                  | 467.10                           | 0.8610                      | 1.17          | 0.85          | 1868.000                         | 3.4400                      | 0.55          | 0.427         |
| SPB1207681MZF-□□ | 680.000                          | 0.25V/100K                  | 676.70                           | 1.0800                      | 0.93          | 0.76          | 2707.000                         | 4.3200                      | 0.43          | 0.380         |
| SPB1207821MZF-□□ | 820.000                          | 0.25V/100K                  | 818.10                           | 1.4700                      | 0.86          | 0.65          | 3272.000                         | 5.8800                      | 0.41          | 0.325         |
| SPB1207102MZF-□□ | 1000.00                          | 0.25V/100K                  | 1005.0                           | 1.6600                      | 0.75          | 0.61          | 4637.333                         | 6.6400                      | 0.35          | 0.307         |

Tolerance code : M =  $\pm 20\%$

Y =  $\pm 30\%$



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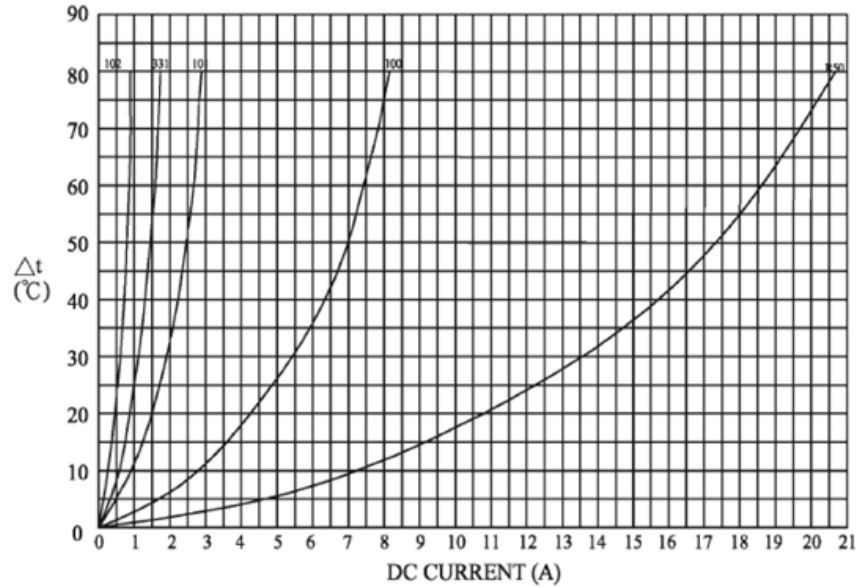


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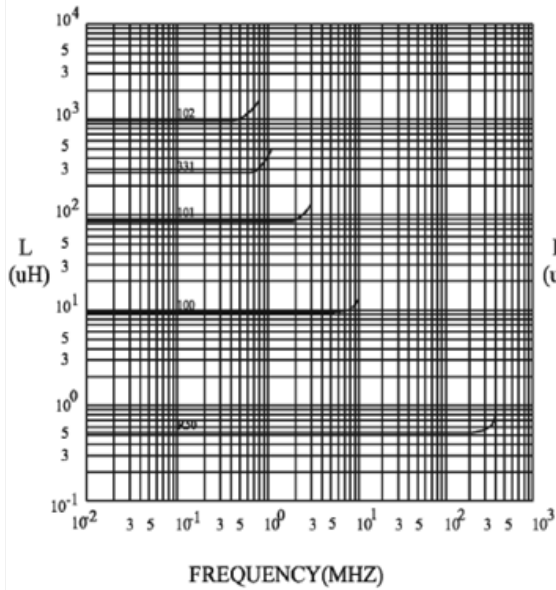
PG. 2

## 7. CHARACTERISTICS CURVES : ( PARALLEL )

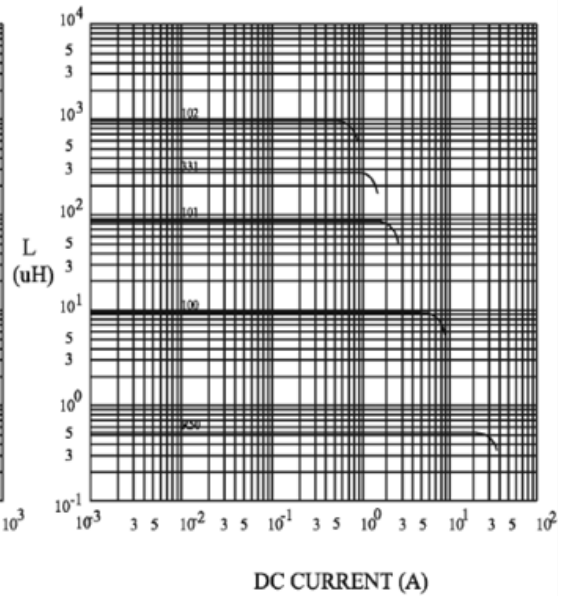
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



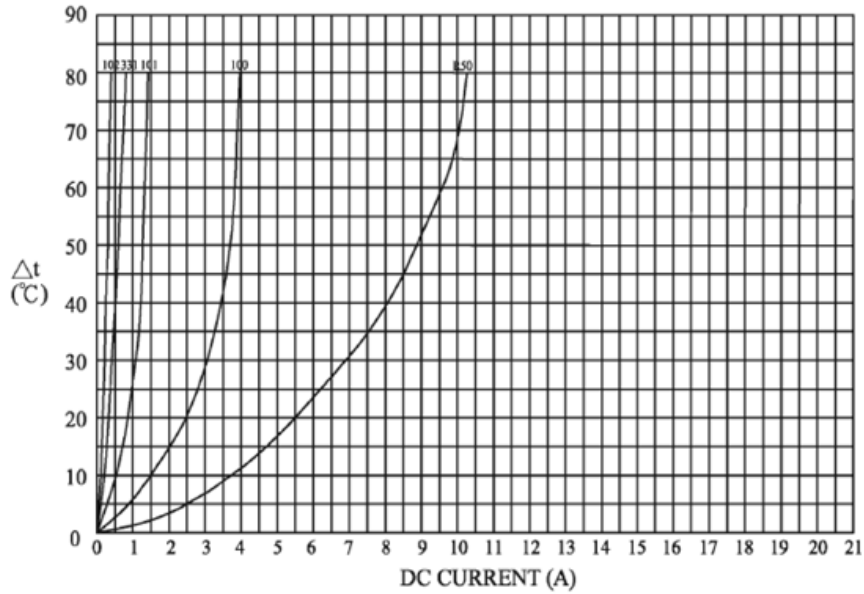
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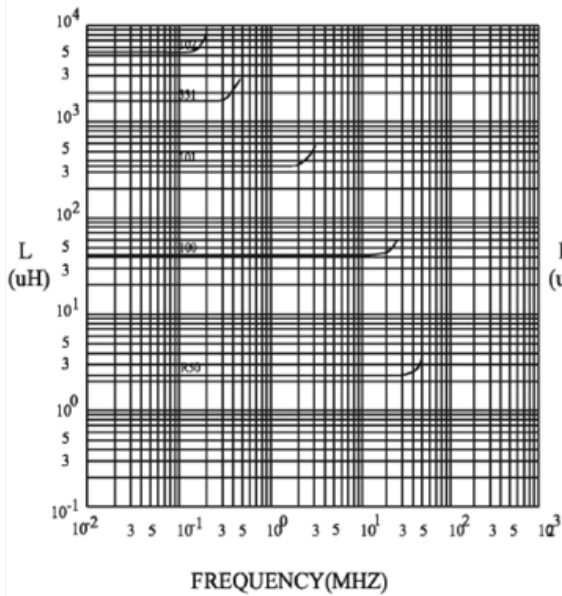
17.12.2010

## 7. CHARACTERISTICS CURVES : ( SERIES )

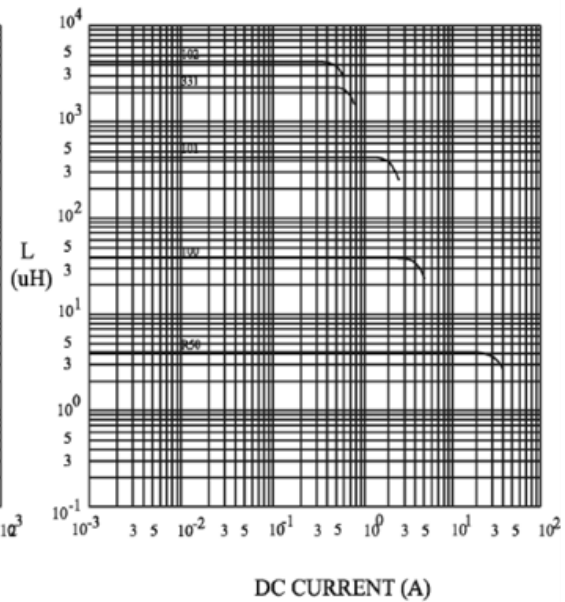
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



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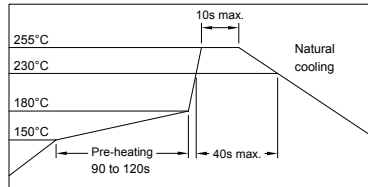
17.12.2010



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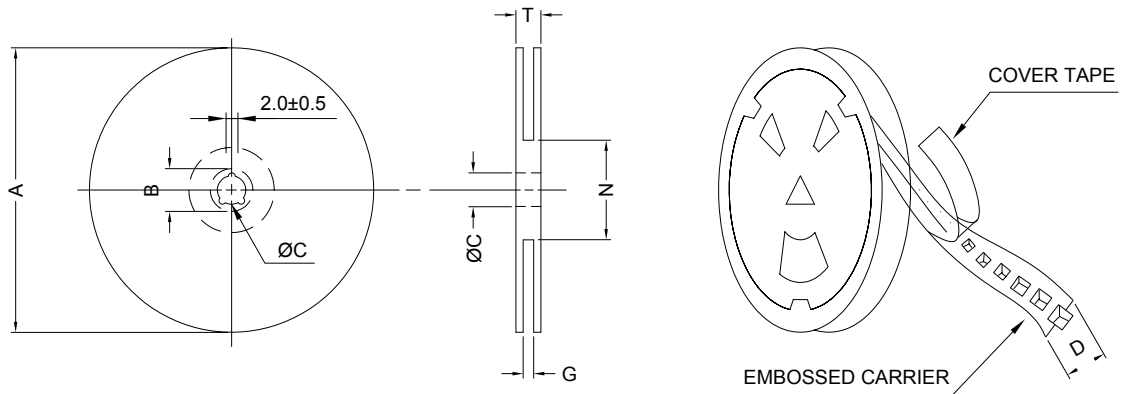
PG. 4

### RECOMMENDED SOLDERING CONDITIONS REFLOW SOLDERINGS

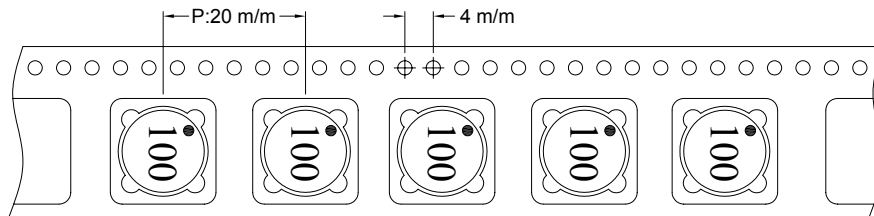


### 8. PACKAGING INFORMATION :

#### ( 1 ) CONFIGURATION



\* CARRIER TAPE WIDTH : D



#### ( 2 ) DIMENSIONS

Unit:m/m

| STYLE | A   | B      | C      | D  | G                | N                | T    |
|-------|-----|--------|--------|----|------------------|------------------|------|
| 13-24 | 330 | 21±0.8 | 13±0.5 | 24 | 26 <sup>+0</sup> | 50 <sup>-0</sup> | 30.4 |

#### ( 3 ) Q'TY & G.W. PER PACKAGE

| SERIES  | INNER : REEL |           |       | OUTER : CARTON |           |                |
|---------|--------------|-----------|-------|----------------|-----------|----------------|
|         | Q'TY (PCS)   | G.W. (gw) | STYLE | Q'TY (PCS)     | G.W. (Kg) | SIZE (cm)      |
| SPB1207 | 400          | 2100      | 13-24 | 1600           | 11.9      | 38 x 36.5 x 21 |



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# SMD POWER INDUCTORS

# SPB1207 SERIES

## 9. RELIABILITY AND TEST CONDITION :

| TEST ITEM                                 | SPECIFICATION   | TEST CONDITION  |
|---|---|---|
| SOLDERABILITY                             | MORE THAN 90% OF THE TERMINAL ELECTRODE SHALL BE COVERED WITH FRESH SOLDER. | PREHEAT : 125±25°C FOR 60 SECONDS<br>SOLDER : 99%Sn/0.3%Ag/0.7%Cu OR EQUIVALENT<br>SOLDER TEMP. : 245±5°C<br>FLUX : ROSIN<br>DIP TIME : 4±1 SECONDS |
| THERMAL SHOCK TEST<br><br>( TEMP. CYCLE ) | INDUCTANCE SHALL NOT CHANGE MORE THAN ±20%                                  | ROOM TEMP. → -25±2°C<br>15 MINUTES → 30 MINUTES<br><br>ROOM TEMP. → 85±2°C<br>15 MINUTES → 30 MINUTES<br><br>TOTAL : 50 CYCLES                      |
| HUMIDITY RESISTANCE TEST                  |   | TEMPERATURE : 40±2°C<br>HUMIDITY : 90 ~ 95%<br>APPLIED CURRENT : PER SPEC.<br>TIME : 500 HOURS  |
| HIGH TEMP. RESISTANCE TEST                |   | TEMPERATURE : 85±2°C<br>APPLIED CURRENT : PER SPEC.<br>TIME : 500 HOURS   |

## 10. UL CARD :

|  |                                |                          |                          |
|--|--------------------------------|--------------------------|--------------------------|
| <b>OBMW2</b>   |                                | <b>November 30, 2000</b> |                          |
| <b>Magnet Wire - Component</b>   |                                |                          |                          |
| <b>PACIFIC ELECTRIC WIRE &amp; CABLE (SHENZHEN) CO LTD</b>   |                                |                          | <b>E201757</b>           |
| 607 BAOLONG INDUSTRIAL ESTATE LONGGANG, SHENZHEN<br>GUANGDONG CHINA  |                                |                          |                          |
|  | Coating Type                   | ANSI                     | TI                       |
| Mtl Dsg  | BC                             | Type                     |                          |
| UEW/U  | Polyurethane                   | —                        | 130                      |
| PEW/U  | Polyester                      | —                        | 155°C                    |
| PEWH/U   | Modified Polyester             | —                        | 180                      |
| PEW-NY/U   | Polyester                      | Polyamide                | MW24-C 155               |
| HAI/U  | Polyester(Amide)(Imide)        | Polyamideimide           | MW35,73 200              |
| UEW-NY/U   | Polyurethane                   | Polyamide                | MW80-C 155<br>MW28-C 130 |
| <p>Marking: Company name and material designation or marked designation on package or reel, and Recognized Component Mark.</p> <p>See General Information Preceding These Recognitions</p> |                                |                          |                          |
| 1/3/2001   | Underwriters Laboratories Inc. | Card 1 of 2              |                          |



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NOTE : Specifications subject to change without notice. Please check our website for latest information.



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PG. 6

## 10. UL CARD :

| SUMITOMO CHEMICAL CO LTD  |            | E54705 (M) |                  |      |               |     |           |       |       |         |     |         |
|---|------------|------------|------------------|------|---------------|-----|-----------|-------|-------|---------|-----|---------|
| 5-33 KITAHAMA 4-CHOME CHUO-KO, OSAKA JAPAN  |            |            |                  |      |               |     |           |       |       |         |     |         |
| Mtl Dsg   | Col        | Min Thk mm | UL94 Flame Class | Elec | RTI           |     | H w/o Imp | H W I | H A I | H V T R | D 4 | C 9 T I |
|   |            |            |                  |      | Mech with Imp |     |           |       |       |         |     |         |
| Liquid crystal polyester (LCP), designated "EKONOL" or "SUMIKASUPER", furnished in the form of pellets, (Contd) |            |            |                  |      |               |     |           |       |       |         |     |         |
| E4008, E400X  | NC, BK     | 0.30       | 94V-0            | 130  | 130           | 130 | —         | —     | —     | —       | —   | —       |
|   |            | 0.75       | 94V-0            | 130  | 130           | 130 | 3         | 4     | —     | —       | —   | —       |
|   |            | 1.5        | 94V-0            | 130  | 130           | 130 | 2         | 4     | —     | —       | —   | —       |
| E4008   | NC, WT, BK | 3.0        | 94V-0            | 130  | 130           | 130 | 1         | 4     | 0     | 5       | 4   | —       |
|   |            | 0.30       | 94V-0            | 130  | 130           | 130 | —         | —     | —     | —       | —   | —       |
|   |            | 0.75       | 94V-0            | 220  | 180           | 220 | 3         | 4     | —     | —       | —   | —       |
| E4010   | NC, BK     | 1.5        | 94V-0            | 220  | 200           | 240 | 2         | 4     | —     | —       | —   | —       |
|   |            | 3.0        | 94V-0            | 220  | 200           | 240 | 1         | 4     | 0     | 5       | 4   | —       |
|   |            | 0.30       | 94V-0            | 130  | 130           | 130 | —         | —     | —     | —       | —   | —       |
| E400(Y)L, E4008L  | NC, BK     | 0.75       | 94V-0            | 220  | 200           | 240 | 2         | 4     | —     | —       | —   | —       |
|   |            | 3.0        | 94V-0            | 220  | 200           | 240 | 1         | 4     | 0     | 5       | 4   | —       |
|   |            | 0.30       | 94V-0            | 130  | 130           | 130 | —         | —     | —     | —       | —   | —       |
| E4810   | NC, BK     | 0.75       | 94V-0            | 130  | 130           | 130 | 3         | 4     | —     | —       | —   | —       |
|   |            | 1.5        | 94V-0            | 130  | 130           | 130 | 2         | 4     | —     | —       | —   | —       |
|   |            | 3.0        | 94V-0            | 130  | 130           | 130 | 1         | 4     | 0     | 5       | 4   | —       |

(X) Denotes any number 1 thru 9.  
(Y) Denotes any number 1 thru 7.

| TERAOKA SEISAKUSHO CO LTD   |  | E56086 (S) |  |  |  |  |  |  |  |  |  |
|---|--|------------|--|--|--|--|--|--|--|--|--|
| 4-22 1-CHOME HIROMACHI SHINAGAWA-KU, TOKYO JAPAN  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant aramid paper tape, Cat. Nos. 512F+, 560F+, 565S+, 681S+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant aramid paper tape, Cat. Nos. 560S+, 561S+, 562S+, rated 200 C.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant acetate cloth tape, Cat. Nos. 570F+, 571F+, 573F+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyester film tape, Cat. Nos. 680F+, 684F+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant glass cloth tape, Cat. Nos. 510F+, 540S+, 541F+, 685S+.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant glass cloth tape, Cat. No. 54S, rated 200 C.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant cotton cloth tape, Cat. Nos. 590F+, 715F+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyimide film tape, Cat. No. 650S+, rated 200 C.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant teflon tape, Cat. Nos. 841+, 846+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant PVC tape, Cat. Nos. 305F+, 307F+, 380F+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyester fiber tape, Cat. Nos. 511F+, 551F+.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant epoxy varnish impregnated polyester web tape, Cat. Nos. 530F+.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant epoxy varnish impregnated glass paper tape, Cat. No. 531F+.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant copper foil tape, Cat. No. 831S+.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant copper foil tape, Cat. No. 8321+.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant aluminum foil tape, Cat. Nos. 833+, 834+.   |  |            |  |  |  |  |  |  |  |  |  |
| Epoxy varnish impregnated polyester non-woven fabric tape, cat. no. 530F <sup>o</sup> rated 150 C.  |  |            |  |  |  |  |  |  |  |  |  |
| polyester film tape, Cat. Nos. 631S <sup>o</sup> , 632S, rated 130 C.   |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyester film tape, Cat. No. 630F <sup>o</sup> , rated 130 C.  |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyester film/epoxy varnish impregnated polyester fiber tape Cat. No. 673F <sup>o</sup> , rated 130 C.                         |  |            |  |  |  |  |  |  |  |  |  |
| Flame retardant polyester film/epoxy varnish impregnated polyester fiber/polyester film tape, Cat. No. 850F <sup>o</sup> , rated 130 C.         |  |            |  |  |  |  |  |  |  |  |  |
| + - Subjected to Flame Retardant tests only.  |  |            |  |  |  |  |  |  |  |  |  |
| °- Complies with Flame Retardant requirements when so marked.   |  |            |  |  |  |  |  |  |  |  |  |
| Mkrking: Company name or "E56086" and catalog designation and "Flame Retardent" if applyce, bic. brinted on the central paper or outer package. |  |            |  |  |  |  |  |  |  |  |  |



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PG. 7