

## SMD Power Inductors

## SDS0402 Series

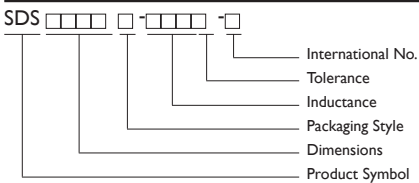


## FEATURES

Smallest size and high performance

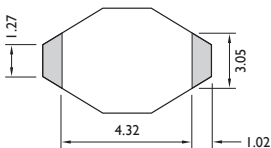
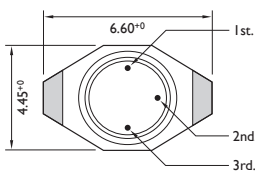
High energy storage and very low resistance.

## PRODUCT IDENTIFICATION



- Packaging: T: Tape and Reel
- Tolerance: M $\pm$ 20%
- Note: YAGEO will start to release SDS Series inductors with lead-free terminals which meet SONY SS-00259's criteria for lead-free product in Q2 of 2004, and YAGEO International No. will be changed to "N" as identification. Ex.: SDS0402BL-101M-N.

## SHAPE AND DIMENSIONS



Dimensions : mm

These shielded ultra-miniature inductors can help designers achieving significantly longer battery life in handheld communication devices and other portable products.

The SDS0402 Series offers the highest efficiency, smallest size and lowest cost of any comparable part. DC resistance is 10% to 60% lower than other inductors, with greatest efficiency improvements seen at inductance values from 100 to 10,000 $\mu$ H.

These magnetically shielded inductors are designed with a flat top and constructed of heat resistant materials to ensure trouble-free assembly and reflow operations.

## APPLICATIONS

Notebook computers, step-up and step-down converters.

Flash memory programmers, etc...

## ELECTRICAL CHARACTERISTICS

| PART NO.        | INDUCTANCE<br>( $\mu$ H $\pm$ 20%)* | Q<br>Min. | Q<br>FREQUENCY<br>(KHz) | DC<br>RESISTANCE<br>( $\Omega$ <sup>th</sup> ) Max.** | SRF<br>(MHz) | CURRENT<br>(A) Max.** |
|-----------------|-------------------------------------|-----------|-------------------------|---|--------------|-----------------------|
| SDS0402T-1R0M-S | 1.0                                 | 30        | 200                     | 0.040   | 200          | 3.0                   |
| SDS0402T-1R5M-S | 1.5                                 | 30        | 200                     | 0.045   | 100          | 2.8                   |
| SDS0402T-2R2M-S | 2.2                                 | 40        | 200                     | 0.050   | 90           | 1.8                   |
| SDS0402T-3R3M-S | 3.3                                 | 40        | 200                     | 0.060   | 90           | 1.6                   |
| SDS0402T-4R7M-S | 4.7                                 | 40        | 200                     | 0.065   | 80           | 1.4                   |
| SDS0402T-6R8M-S | 6.8                                 | 40        | 200                     | 0.070   | 40           | 1.2                   |
| SDS0402T-100M-S | 10                                  | 40        | 200                     | 0.075   | 30           | 1.0                   |
| SDS0402T-150M-S | 15                                  | 40        | 100                     | 0.090   | 25           | 0.80                  |
| SDS0402T-220M-S | 22                                  | 40        | 100                     | 0.110   | 20           | 0.70                  |
| SDS0402T-330M-S | 33                                  | 40        | 100                     | 0.190   | 15           | 0.60                  |
| SDS0402T-470M-S | 47                                  | 40        | 100                     | 0.230   | 15           | 0.50                  |
| SDS0402T-680M-S | 68                                  | 40        | 100                     | 0.290   | 10           | 0.40                  |
| SDS0402T-101M-S | 100                                 | 40        | 100                     | 0.480   | 8            | 0.30                  |
| SDS0402T-151M-S | 150                                 | 40        | 100                     | 0.590   | 7            | 0.26                  |
| SDS0402T-221M-S | 220                                 | 40        | 100                     | 0.770   | 4            | 0.22                  |
| SDS0402T-331M-S | 330                                 | 40        | 100                     | 1.4   | 4            | 0.20                  |
| SDS0402T-471M-S | 470                                 | 40        | 100                     | 1.8   | 3            | 0.19                  |
| SDS0402T-681M-S | 680                                 | 40        | 100                     | 2.2   | 2            | 0.18                  |
| SDS0402T-102M-S | 1000                                | 40        | 100                     | 3.4   | 1            | 0.15                  |
| SDS0402T-152M-S | 1500                                | 50        | 100                     | 4.2   | 1            | 0.12                  |
| SDS0402T-222M-S | 2200                                | 50        | 100                     | 8.5   | 1            | 0.10                  |
| SDS0402T-332M-S | 3300                                | 50        | 100                     | 11  | 0.5          | 0.08                  |
| SDS0402T-472M-S | 4700                                | 50        | 100                     | 13.9  | 0.5          | 0.06                  |
| SDS0402T-682M-S | 6800                                | 50        | 100                     | 25  | 0.5          | 0.04                  |
| SDS0402T-103M-S | 10000                               | 50        | 100                     | 32.8  | 0.4          | 0.02                  |

\* Inductance Tested at 0.1 Vrms, 100KHz

\*\* 30°C Temperature Rise

Operating Temperature Range -40°C to +85°C



## ELECTRICAL CHARACTERISTICS : LEAD-FREE & ROHS COMPLIANCE

| PART NO.         | INDUCTANCE<br>at 50MHz<br>(nH) | TEST<br>FREQUENCY<br>(MHZ) | Rdc<br>Max | I <sub>rms</sub><br>(A) | I <sub>sat</sub><br>(A) | SRF<br>(MHZ)<br>TYP | Q FREQ<br>MIN<br>(KHz) | COLOR CODING    |                 |                 |
|------------------|--------------------------------|----------------------------|------------|-------------------------|-------------------------|---------------------|------------------------|-----------------|-----------------|-----------------|
|                  |                                |                            |            |                         |                         |                     |                        | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |
|                  |                                |                            |            |                         |                         |                     |                        |                 |                 |                 |
| SDS0402T-1R0 □-N | 1                              | 100KHz,0.1V                | 0.04       | 3                       | 0.25                    | 200                 | 30/200                 | BRN             | BLK             | RED             |
| SDS0402T-1R5 □-N | 1.5                            | 100KHz,0.1V                | 0.045      | 2.8                     | 0.25                    | 100                 | 30/200                 | BRN             | GRN             | RED             |
| SDS0402T-2R2 □-N | 2.2                            | 100KHz,0.1V                | 0.05       | 1.8                     | 0.2                     | 90                  | 40/200                 | RED             | RED             | RED             |
| SDS0402T-3R3 □-N | 3.3                            | 100KHz,0.1V                | 0.06       | 1.6                     | 0.15                    | 90                  | 40/200                 | ORN             | ORN             | RED             |
| SDS0402T-4R7 □-N | 4.7                            | 100KHz,0.1V                | 0.065      | 1.4                     | 0.12                    | 80                  | 40/200                 | YEL             | VIO             | RED             |
| SDS0402T-6R8 □-N | 6.8                            | 100KHz,0.1V                | 0.07       | 1.2                     | 0.1                     | 40                  | 40/200                 | BLU             | GRY             | RED             |
| SDS0402T-100 □-N | 10                             | 100KHz,0.1V                | 0.075      | 1                       | 0.075                   | 30                  | 40/200                 | BRN             | BLK             | ORN             |
| SDS0402T-150 □-N | 15                             | 100KHz,0.1V                | 0.09       | 0.8                     | 0.06                    | 25                  | 40/100                 | BRN             | GRN             | ORN             |
| SDS0402T-220 □-N | 22                             | 100KHz,0.1V                | 0.11       | 0.7                     | 0.06                    | 20                  | 40/100                 | RED             | RED             | ORN             |
| SDS0402T-330 □-N | 33                             | 100KHz,0.1V                | 0.19       | 0.6                     | 0.04                    | 15                  | 40/100                 | ORN             | ORN             | ORN             |
| SDS0402T-470 □-N | 47                             | 100KHz,0.1V                | 0.23       | 0.5                     | 0.03                    | 15                  | 40/100                 | YEL             | VIO             | ORN             |
| SDS0402T-680 □-N | 68                             | 100KHz,0.1V                | 0.29       | 0.4                     | 0.025                   | 10                  | 40/100                 | BLU             | GRY             | ORN             |
| SDS0402T-101 □-N | 100                            | 100KHz,0.1V                | 0.48       | 0.3                     | 0.025                   | 8                   | 40/100                 | BRN             | BLK             | YEL             |
| SDS0402T-151 □-N | 150                            | 100KHz,0.1V                | 0.59       | 0.26                    | 0.025                   | 7                   | 40/100                 | BRN             | GRN             | YEL             |
| SDS0402T-221 □-N | 220                            | 100KHz,0.1V                | 0.77       | 0.22                    | 0.015                   | 4                   | 40/100                 | RED             | RED             | YEL             |
| SDS0402T-331 □-N | 330                            | 100KHz,0.1V                | 1.4        | 0.2                     | 0.015                   | 4                   | 40/100                 | ORN             | ORN             | YEL             |
| SDS0402T-471 □-N | 470                            | 100KHz,0.1V                | 1.8        | 0.19                    | 0.01                    | 3                   | 40/100                 | YEL             | VIO             | YEL             |
| SDS0402T-681 □-N | 680                            | 100KHz,0.1V                | 2.2        | 0.18                    | 0.01                    | 2                   | 40/100                 | BLU             | GRY             | YEL             |
| SDS0402T-102 □-N | 1000                           | 100KHz,0.1V                | 3.4        | 0.15                    | 0.01                    | 1                   | 40/100                 | BRN             | BLK             | GRN             |
| SDS0402T-152 □-N | 1500                           | 100KHz,0.1V                | 4.2        | 0.12                    | 0.005                   | 1                   | 50/100                 | BRN             | GRN             | GRN             |
| SDS0402T-222 □-N | 2200                           | 100KHz,0.1V                | 8.5        | 0.1                     | 0.005                   | 1                   | 50/100                 | RED             | RED             | GRN             |
| SDS0402T-332 □-N | 3300                           | 100KHz,0.1V                | 11         | 0.08                    | 0.005                   | 0.5                 | 50/100                 | ORN             | ORN             | GRN             |
| SDS0402T-472 □-N | 4700                           | 100KHz,0.1V                | 13.9       | 0.06                    | 0.005                   | 0.5                 | 50/100                 | YEL             | VIO             | GRN             |
| SDS0402T-682 □-N | 6800                           | 100KHz,0.1V                | 25         | 0.04                    | 0.005                   | 0.5                 | 50/100                 | BLU             | GRY             | GRN             |
| SDS0402T-103 □-N | 10000                          | 100KHz,0.1V                | 32.8       | 0.02                    | 0.002                   | 0.4                 | 50/100                 | BRN             | BLK             | BLU             |

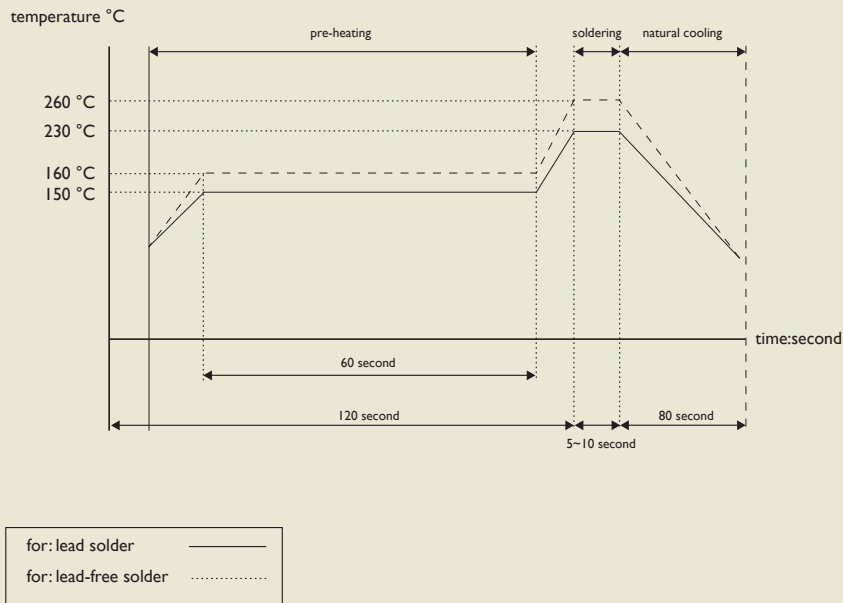
NOTE : □ -tolerance K=±10% / =±15% / M=±20% / N=+40% -20%

- Operating Temperature Range from -40°C to 85°C
- inductance drop t10% type
- 30°C rise typ at I<sub>rms</sub>.

"-N"FOR COMPLETELY LEAD FREE TYPE(INCLUDING FERRITE BODY & SOLDER)

## RECOMMEND SOLDERING CONDITIONS

for:CL/ CLH/ SQV/ SMD power inductors/ SMD Chip Beads/ SMD Filters,Transformers, Current Sensors







## ELECTRICAL CHARACTERISTICS : LEAD-FREE & ROHS COMPLIANCE

| PART NO.           | INDUCTANCE<br>at 50MHz<br>(nH) | TEST<br>FREQUENCY<br>(MHZ) | Rdc<br>Max | I <sub>rms</sub><br>(A) | I <sub>sat</sub><br>(A) | SRF<br>(MHZ)<br>TYP | Q FREQ<br>MIN<br>(KHz) | COLOR CODING    |                 |                 |
|--------------------|--------------------------------|----------------------------|------------|-------------------------|-------------------------|---------------------|------------------------|-----------------|-----------------|-----------------|
|                    |                                |                            |            |                         |                         |                     |                        | 1 <sup>st</sup> | 2 <sup>nd</sup> | 3 <sup>rd</sup> |
|                    |                                |                            |            |                         |                         |                     |                        |                 |                 |                 |
| SDS0402BL-101 □ -N | 100                            | >10                        | 100KHz     | 12                      | 0.95                    | 220                 | BRN                    | BLK             | YEL             |                 |
| SDS0402BL-151 □ -N | 150                            | >10                        | 100KHz     | 10                      | 1.4                     | 200                 | BRN                    | GRN             | YEL             |                 |
| SDS0402BL-221 □ -N | 220                            | >10                        | 100KHz     | 8                       | 1.7                     | 180                 | RED                    | RED             | YEL             |                 |
| SDS0402BL-331 □ -N | 330                            | >10                        | 100KHz     | 6                       | 2.2                     | 160                 | ORN                    | ORN             | YEL             |                 |
| SDS0402BL-471 □ -N | 470                            | >10                        | 100KHz     | 5                       | 3.8                     | 140                 | YEL                    | VIO             | YEL             |                 |
| SDS0402BL-681 □ -N | 680                            | >10                        | 100KHz     | 4                       | 4.9                     | 120                 | BLU                    | GRY             | YEL             |                 |
| SDS0402BL-102 □ -N | 1000                           | >10                        | 100KHz     | 2                       | 9                       | 100                 | BRN                    | BLK             | GRN             |                 |
| SDS0402BL-152 □ -N | 1500                           | >10                        | 100KHz     | 1                       | 11                      | 80                  | BRN                    | GRN             | GRN             |                 |
| SDS0402BL-222 □ -N | 2200                           | >10                        | 100KHz     | 1                       | 19                      | 50                  | RED                    | RED             | GRN             |                 |
| SDS0402BL-332 □ -N | 3300                           | >10                        | 100KHz     | 1                       | 24                      | 40                  | ORN                    | ORN             | GRN             |                 |
| SDS0402BL-472 □ -N | 4700                           | >10                        | 100KHz     | 1                       | 30                      | 30                  | YEL                    | VIO             | GRN             |                 |
| SDS0402BL-682 □ -N | 6800                           | >10                        | 100KHz     | 0.9                     | 56                      | 20                  | BLU                    | GRY             | GRN             |                 |
| SDS0402BL-103 □ -N | 10000                          | >10                        | 100KHz     | 0.8                     | 74                      | 10                  | BRN                    | BLK             | BLU             |                 |

NOTE : □ -tolerance M=±20%

1. Operating temperature range -40°C~85°C

2. Inductance Test OSC @ 0.1V

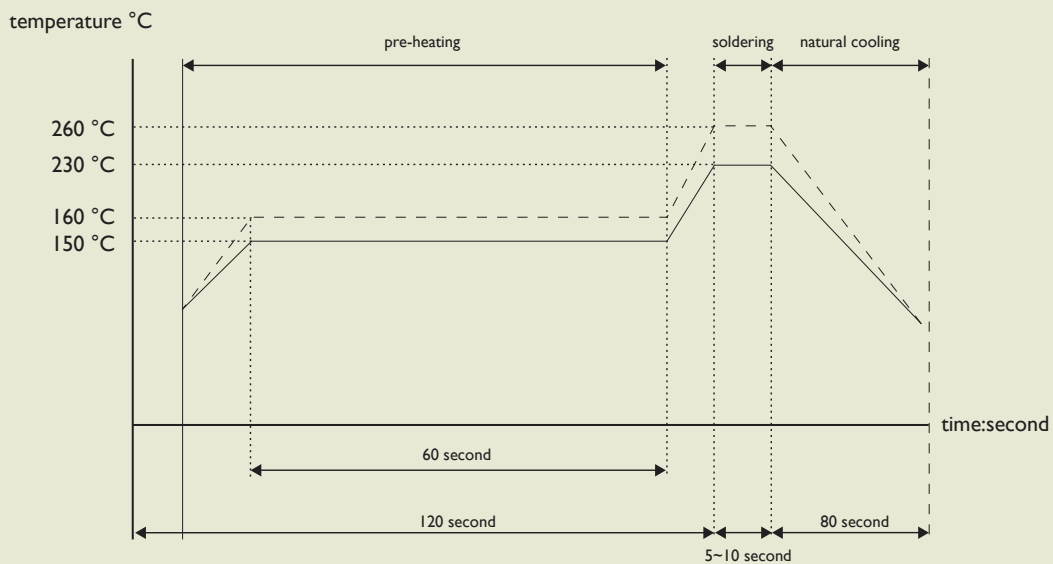
3. Insulation core-winding Test OSC @ 500mV

4. 30°C rise typ.at Irms.

"-N"FOR COMPLETELY LEAD FREE TYPE(INCLUDING FERRITE BODY & SOLDER)

## RECOMMEND SOLDERING CONDITIONS

for:CL/ CLH/ SQV/ SMD power inductors/ SMD Chip Beads/ SMD Filters, Transformers, Current Sensors



for: lead solder

for: lead-free solder

## SMD Power Inductors

## SDS0804 Series

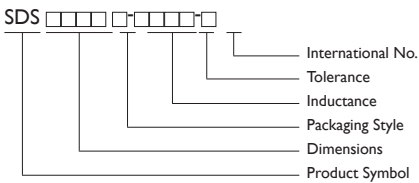


## FEATURES

Smallest size and high performance

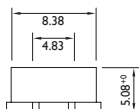
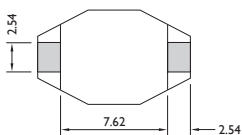
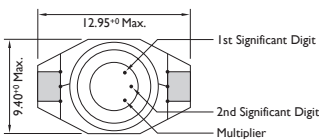
High energy storage and very low resistance.

## PRODUCT IDENTIFICATION



- Packaging: T: Tape and Reel
- Tolerance: M $\pm$ 20%
- Note: YAGEO will start to release SDS Series inductors with lead-free terminals which meet SONY SS-00259's criteria for lead-free product in Q2 of 2004, and YAGEO International No. will be changed to "N" as identification. Ex.: SDS0402BL-101M-N.

## SHAPE AND DIMENSIONS



Dimensions : mm

These shielded ultra-miniature inductors can help designers achieving significantly longer battery life in handheld communication devices and other portable products.

These magnetically shielded inductors are designed with a flat top and constructed of heat resistant materials to ensure trouble-free assembly and reflow operations.

## APPLICATIONS

Notebook computers, step-up and step-down converters.

Flash memory programmers, etc...

## ELECTRICAL CHARACTERISTICS

| PART NO.        | INDUCTANCE<br>( $\mu\text{H} \pm 20\%$ )* | DC<br>RESISTANCE<br>( $\Omega$ ) Max. | Isat**<br>(A) Min. | Irms***<br>(A) | SRF<br>(MHz) |
|-----------------|---|---------------------------------------|--------------------|----------------|--------------|
| SDS0804T-1R0M-S | 1.0                                       | 0.021                                 | 5.6                | 5.0            | 110          |
| SDS0804T-1R5M-S | 1.5                                       | 0.022                                 | 5.2                | 4.5            | 90           |
| SDS0804T-2R2M-S | 2.2                                       | 0.032                                 | 5.0                | 3.8            | 60           |
| SDS0804T-3R3M-S | 3.3                                       | 0.039                                 | 3.9                | 3.3            | 55           |
| SDS0804T-4R7M-S | 4.7                                       | 0.054                                 | 3.2                | 2.7            | 30           |
| SDS0804T-6R8M-S | 6.8                                       | 0.075                                 | 2.8                | 2.2            | 30           |
| SDS0804T-100M-S | 10  | 0.101                                 | 2.4                | 2.0            | 28           |
| SDS0804T-150M-S | 15  | 0.150                                 | 2.0                | 1.5            | 20           |
| SDS0804T-220M-S | 22  | 0.207                                 | 1.6                | 1.3            | 15           |
| SDS0804T-330M-S | 33  | 0.334                                 | 1.4                | 1.1            | 12           |
| SDS0804T-470M-S | 47  | 0.472                                 | 1.0                | 0.8            | 10           |

\* Inductance Tested at 0.1 Vrms, 100KHz

\*\* Inductance Drop = 10% Typ. at Rated Isat.

\*\*\* 40° Rise Typ. at Irms.

Operating Temperature Range -40°C to +85°C



## ELECTRICAL CHARACTERISTICS : LEAD-FREE & ROHS COMPLIANCE

| PART NO.         | INDUCTANCE<br>at 50MHz<br>(nH) | TEST<br>FREQUENCY<br>(MHZ) | Rdc<br>Max | Irms<br>(A) | Isat<br>(A) | SRF<br>(MHZ)<br>TYP | Q FREQ<br>MIN<br>(KHz) |
|------------------|--------------------------------|----------------------------|------------|-------------|-------------|---------------------|------------------------|
| SDS0804T-1R0 □-N | 1                              | 100KHZ,0.1V                | 0.021      | 5           | 5.6         | 110                 | 3/100                  |
| SDS0804T-1R5 □-N | 1.5                            | 100KHZ,0.1V                | 0.022      | 4.5         | 5.2         | 90                  | 5/100                  |
| SDS0804T-2R2 □-N | 2.2                            | 100KHZ,0.1V                | 0.032      | 3.8         | 5           | 60                  | 5/100                  |
| SDS0804T-3R3 □-N | 3.3                            | 100KHZ,0.1V                | 0.039      | 3.3         | 3.9         | 55                  | 5/100                  |
| SDS0804T-4R7 □-N | 4.7                            | 100KHZ,0.1V                | 0.054      | 2.7         | 3.2         | 30                  | 10/100                 |
| SDS0804T-6R8 □-N | 6.8                            | 100KHZ,0.1V                | 0.075      | 2.2         | 2.8         | 30                  | 10/100                 |
| SDS0804T-100 □-N | 10                             | 100KHZ,0.1V                | 0.101      | 2           | 2.4         | 28                  | 10/100                 |
| SDS0804T-150 □-N | 15                             | 100KHZ,0.1V                | 0.15       | 1.5         | 2           | 20                  | 15/100                 |
| SDS0804T-220 □-N | 22                             | 100KHZ,0.1V                | 0.207      | 1.3         | 1.6         | 15                  | 20/100                 |
| SDS0804T-330 □-N | 33                             | 100KHZ,0.1V                | 0.334      | 1.1         | 1.4         | 12                  | 20/100                 |
| SDS0804T-470 □-N | 47                             | 100KHZ,0.1V                | 0.472      | 0.8         | 1           | 10                  | 20/100                 |
| SDS0804T-680 □-N | 68                             | 100KHZ,0.1V                | 0.66       | 0.7         | 0.9         | 10                  | -                      |
| SDS0804T-101 □-N | 100                            | 100KHZ,0.1V                | 1.11       | 0.6         | 0.8         | 7                   | -                      |
| SDS0804T-150 □-N | 150                            | 100KHZ,0.1V                | 1.55       | 0.5         | 0.6         | 6                   | -                      |
| SDS0804T-221 □-N | 220                            | 100KHZ,0.1V                | 2          | 0.37        | 0.5         | 5                   | -                      |
| SDS0804T-102 □-N | 1000                           | 100KHZ,0.1V                | 8.3        | 0.17        | 0.32        | 2                   | -                      |

NOTE : □ -tolerance K=±10% / ±15% / M=±20% / N=+40% -20%

1. Operating temperature range -40°C~85°C

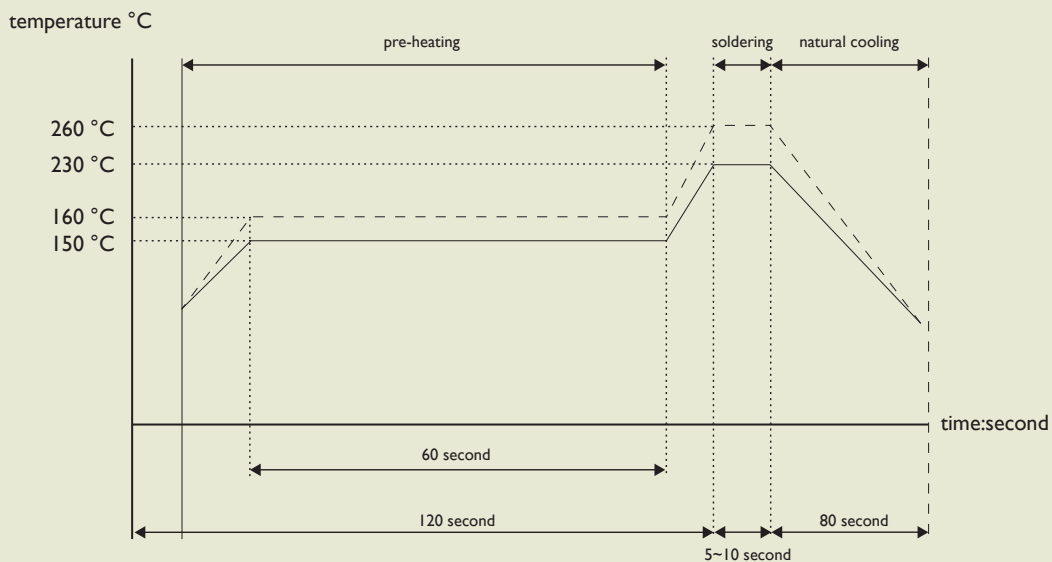
2. Inductance drop 10% typ. at last

4. 40°C rise typ. at Irms.

"-N" FOR COMPLETELY LEAD FREE TYPE (INCLUDING FERRITE BODY & SOLDER)

## RECOMMEND SOLDERING CONDITIONS

for: CL/ CLH/ SQV/ SMD power inductors/ SMD Chip Beads/ SMD Filters, Transformers, Current Sensors



for: lead solder

for: lead-free solder





## ELECTRICAL CHARACTERISTICS : LEAD-FREE & ROHS COMPLIANCE

| PART NO.         | INDUCTANCE<br>at 50MHz<br>(nH) | TEST<br>FREQUENCY<br>(MHZ) | Rdc<br>Max | I <sub>rms</sub><br>(A) | I <sub>sat</sub><br>(A) | SRF<br>(MHZ)<br>TYP | Q FREQ<br>MIN<br>(KHz) |
|------------------|--------------------------------|----------------------------|------------|-------------------------|-------------------------|---------------------|------------------------|
| SDSI306T-100 □-N | 10                             | 100KHZ,0.1V                | 0.04       | 3.9                     | 5.5                     | 24                  | 40/100                 |
| SDSI306T-150 □-N | 15                             | 100KHZ,0.1V                | 0.048      | 3.4                     | 4.5                     | 16                  | 40/100                 |
| SDSI306T-220 □-N | 22                             | 100KHZ,0.1V                | 0.059      | 3.1                     | 3.5                     | 14                  | 30/100                 |
| SDSI306T-330 □-N | 33                             | 100KHZ,0.1V                | 0.075      | 2.8                     | 3.3                     | 11                  | 40/100                 |
| SDSI306T-470 □-N | 47                             | 100KHZ,0.1V                | 0.097      | 2.4                     | 2.7                     | 8                   | 40/100                 |
| SDSI306T-680 □-N | 68                             | 100KHZ,0.1V                | 0.14       | 2                       | 2.2                     | 7                   | 40/100                 |
| SDSI306T-101 □-N | 100                            | 100KHZ,0.1V                | 0.21       | 1.7                     | 1.7                     | 5.5                 | 40/100                 |
| SDSI306T-151 □-N | 150                            | 100KHZ,0.1V                | 0.3        | 1.3                     | 1.3                     | 4.8                 | 50/100                 |
| SDSI306T-221 □-N | 220                            | 100KHZ,0.1V                | 0.47       | 1.1                     | 1.1                     | 4                   | 50/100                 |
| SDSI306T-331 □-N | 330                            | 100KHZ,0.1V                | 0.78       | 0.86                    | 0.86                    | 3                   | 50/100                 |
| SDSI306T-471 □-N | 470                            | 100KHZ,0.1V                | 1.08       | 0.73                    | 0.73                    | 2.4                 | 50/100                 |
| SDSI306T-681 □-N | 680                            | 100KHZ,0.1V                | 1.4        | 0.64                    | 0.64                    | 2                   | 60/100                 |
| SDSI306T-102 □-N | 1000                           | 100KHZ,0.1V                | 2.01       | 0.53                    | 0.53                    | 1                   | 60/100                 |

NOTE : □ -tolerance K=±10% / =±15% / M=±20% / N=+40% -20%

1. Operating temperature range -40°C~85°C

2. Inductance drop 10% typ. at last

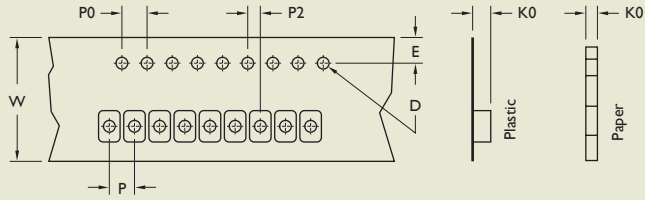
4. 40°C rise typ. at I<sub>rms</sub>.

"-N" FOR COMPLETELY LEAD FREE TYPE (INCLUDING FERRITE BODY & SOLDER)





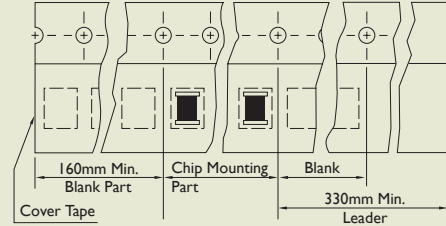
## TAPE DIMENSIONS



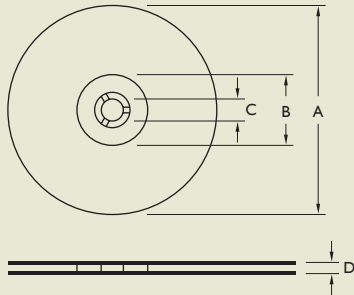
## TAPE MATERIAL

Camer Tape : Polystyrene

Cover Type : Polyethylene

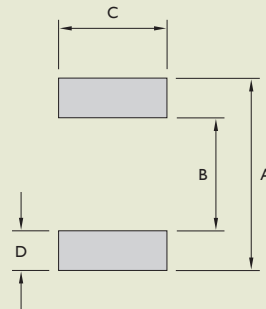


## REEL DIMENSIONS



## RECOMMENDED PATTERN

Land Pattern



| TYPE      | TAPE DIMENSIONS |      |      |    |    |    |    | RECOMMENDED PATTERN |       |      |      | REEL DIMENSIONS |     |    |      | QUANTITY (PCS/REEL) |      |
|-----------|-----------------|------|------|----|----|----|----|---------------------|-------|------|------|-----------------|-----|----|------|---------------------|------|
|           | K0              | D    | E    | W  | P  | P0 | P2 | A                   | B     | C    | D    | A               | B   | C  | D    | 178                 | 330  |
|           |                 |      |      |    |    |    |    |                     |       |      |      |                 |     |    |      | -                   | 2500 |
| SDS0402BL | 3.2             | 1.55 | 1.75 | 12 | 8  | 4  | 2  | 6.86                | 4.06  | 3.56 | 1.40 | 330             | 100 | 13 | 13.4 | -                   | 2500 |
|           |                 |      |      |    |    |    |    |                     |       |      |      | 178             | 60  | 13 | 13.2 | 750                 | -    |
| SDS0402T  | 3.2             | 1.55 | 1.75 | 12 | 8  | 4  | 2  | 6.86                | 4.06  | 3.56 | 1.40 | 330             | 100 | 13 | 13.4 | -                   | 2500 |
|           |                 |      |      |    |    |    |    |                     |       |      |      | 178             | 60  | 13 | 13.2 | 750                 | -    |
| SDS0804T  | 5.4             | 1.55 | 1.75 | 24 | 12 | 4  | 2  | 13.21               | 7.37  | 2.79 | 2.92 | 330             | 100 | 13 | 24.4 | -                   | 1000 |
| SDS1306T  | 7.5             | 1.55 | 1.75 | 32 | 20 | 4  | 2  | 18.29               | 12.45 | 2.79 | 2.92 | 330             | 100 | 13 | 33.4 | -                   | 250  |

Dimensions : mm



## SDS SERIES RELIABILITY TEST

### I-1 MECHANICAL PERFORMANCE

| NO.   | ITEM                         | SPECIFICATION  | TEST CONDITIONS   |
|-------|------------------------------|--|---|
| I-1-1 | Vibration                    | Appearance : No Damage<br>L Change : within $\pm 10\%$<br>Q Change : within $\pm 30\%$<br>RDC : within Specification | Test device shall be soldered on the substrate.<br>Oscillation Frequency : 10 to 55 to 10Hz for 1Min.<br>Amplitude : 1.5mm<br>Time : 2Hrs. for each Axis (X,Y & Z), Total 6Hrs. |
| I-1-2 | Resistance to Soldering Heat | Appearance : No Damage   | Pre-heating : 150°C, 1Min.<br>Solder Composition : Sn/Pb = 63/37<br>Solder Temperature : 260 $\pm$ 5°C<br>Immersion Time : 10 $\pm$ 1Sec.                                       |
| I-1-3 | Solderability                | The electrodes shall be at least 90% covered with new solder coating.  | Pre-heating : 150°C, 1Min.<br>Solder Composition : Sn/Pb = 63/37<br>Solder Temperature : 230 $\pm$ 5°C<br>Immersion Time : 4 $\pm$ 1Sec.  |

### I-2 ENVIRONMENTAL PERFORMANCE

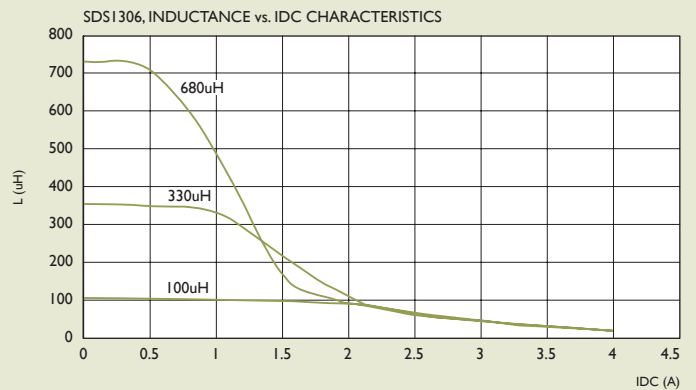
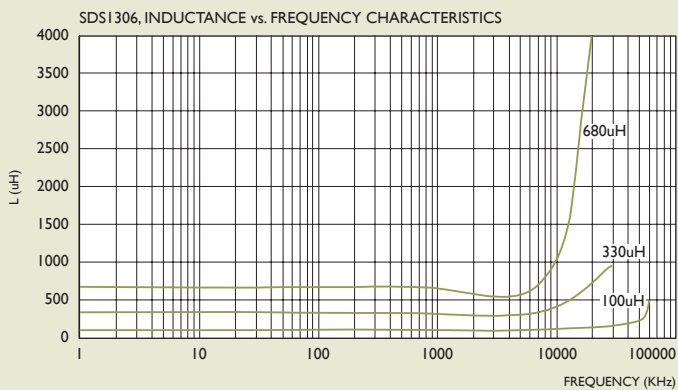
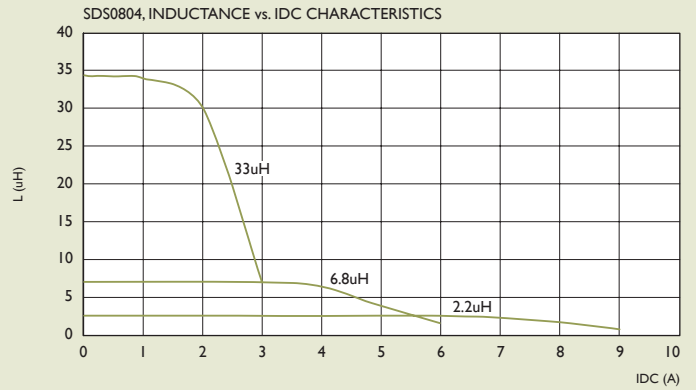
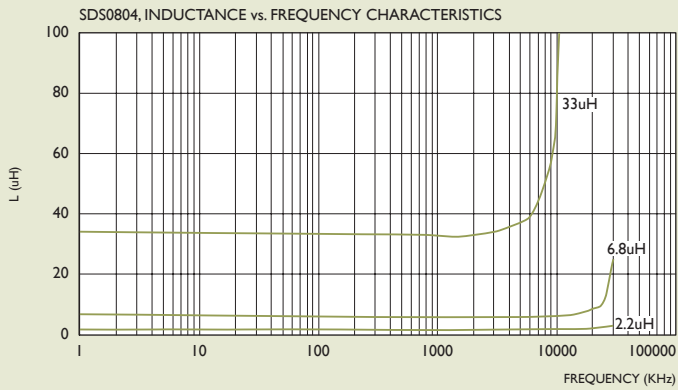
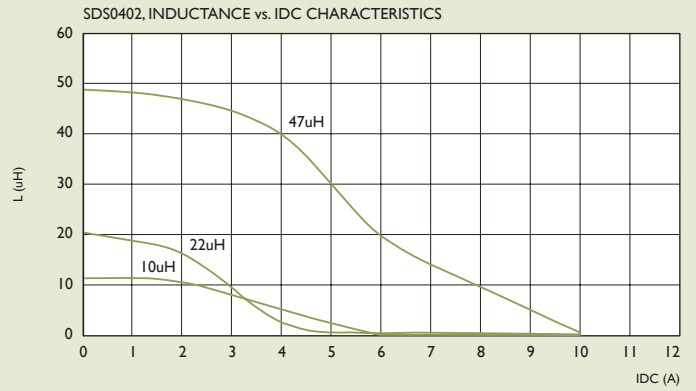
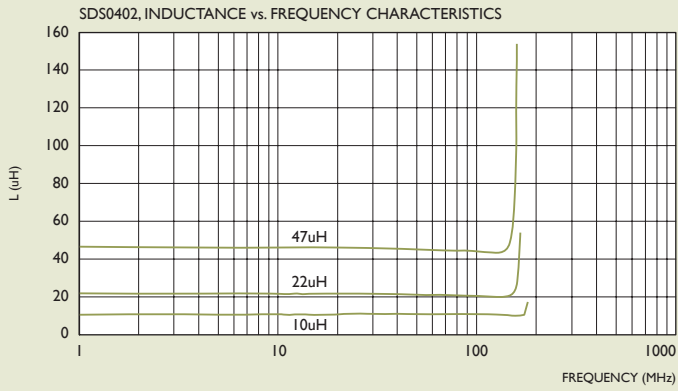
| NO.   | ITEM                        | SPECIFICATION  | TEST CONDITIONS  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
|-------|-----------------------------|--|--|------|------------------|-------------|---|-------------|----|---|------------|---|---|------------|----|---|------------|---|
| I-2-1 | Temperature Shock           | Appearance : No Damage<br>L Change : within $\pm 10\%$<br>L Change : within $\pm 30\%$<br>RDC : within Specification | 10 Cycles (Air to Air)   Cycles shall Consist of :<br>30Min. Exposure to -55°C<br>30Min. Exposure to -125°C<br>15Sec. Max. Transition between Temperatures<br>Measured after Exposure in the Room Condition for 24Hrs.   |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| I-2-2 | Temperature Cycle           |  | One Cycle <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Step</th> <th>Temperature (°C)</th> <th>Time (Min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25 <math>\pm</math> 3</td> <td>30</td> </tr> <tr> <td>2</td> <td>25 <math>\pm</math> 2</td> <td>3</td> </tr> <tr> <td>3</td> <td>85 <math>\pm</math> 3</td> <td>30</td> </tr> <tr> <td>4</td> <td>25 <math>\pm</math> 2</td> <td>3</td> </tr> </tbody> </table> Total : 100 Cycles<br>Measured after Exposure in the Room Condition for 24Hrs. | Step | Temperature (°C) | Time (Min.) | 1 | -25 $\pm$ 3 | 30 | 2 | 25 $\pm$ 2 | 3 | 3 | 85 $\pm$ 3 | 30 | 4 | 25 $\pm$ 2 | 3 |
| Step  | Temperature (°C)            | Time (Min.)  |  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| 1     | -25 $\pm$ 3                 | 30   |  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| 2     | 25 $\pm$ 2                  | 3  |  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| 3     | 85 $\pm$ 3                  | 30   |  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| 4     | 25 $\pm$ 2                  | 3  |  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| I-2-3 | Humidity Resistance         |  | Temperature : 40 $\pm$ 2°C<br>Relative Humidity : 90 ~ 95%<br>Time : 1000Hrs.<br>Measured after Exposure in the Room Condition for 24Hrs.  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| I-2-4 | High Temperature Resistance |  | Temperature : 85 $\pm$ 3°C<br>Relative Humidity : 20%<br>Applied Current : Rated Current<br>Time : 1000Hrs.<br>Measured after Exposure in the Room Condition for 24Hrs.  |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |
| I-2-5 | Low Temperature Resistance  |  | Temperature : -25 $\pm$ 3°C<br>Relative Humidity : 0%<br>Time : 1000Hrs.<br>Measured after Exposure in the Room Condition for 24Hrs.   |      |                  |             |   |             |    |   |            |   |   |            |    |   |            |   |



## TYPICAL ELECTRICAL CHARACTERISTICS

Curves of SCD Series

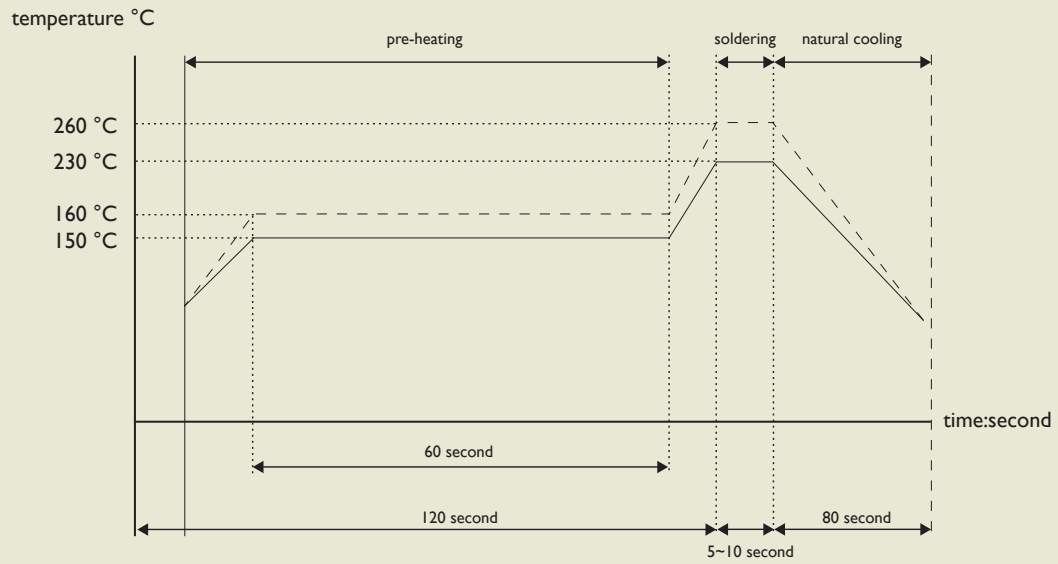
Test Instruments : HP4291A Impedance / Material Analyzer





## RECOMMEND SOLDERING CONDITIONS

for: CL/ CLH/ SQV/ SMD power inductors/ SMD Chip Beads/ SMD Filters, Transformers, Current Sensors



|                       |       |
|-----------------------|-------|
| for: lead solder      | ———   |
| for: lead-free solder | ..... |