

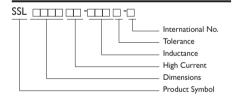
SSLI306HC Series



FEATURES

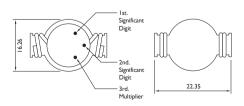
For high current, low voltage DC-DC converter applications.

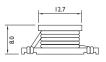
PRODUCT IDENTIFICATION



- Packaging: T: Tape and Reel, B:Bulk
- Tolerance: M: ±20%
- Note: YAGEO will start to release SSL_HC Series inductors with lead-free terminals which meet SONY SS-00259's criteria for lead-free product in Q2 of 2004, and YAGEO Internal No will be changed to 'N' as identification. Ex. SSL0503HC-R56M-N

SHAPES AND DIMENSIONS





Dimensions: mm

These series have been specially designed for high current, low voltage DC-DC converter applications.

This simple, rugged design provides current ratings normally available only in much larger packages - up to 16Arms for a $.33\mu H$ part. With its tinned self-leaded construction, the SSL0804HC achieves very low DCR values and excellent solderability. In addition to the standard parts shown, custom values are also available.

These inductors are less than .2' (5mm) high. They have very low resistance and a rugged self-leaded construction.

APPLICATIONS

Notebook computers, Sep-up and step-down converters, memory programmers. etc...

ELECTRICAL CHARACTERISTICS

| PART NO. | INDUCTANCE | SRF | DC | Isat ** | Irms *** |
|------------------|--------------|-------|----------------------------|---------|----------|
| | (μH ± 20%) * | (MHz) | RESISTANCE (Ω) Max. | (A) | (A) |
| SSL1306HC-R78M-S | 0.78 | 156 | 2.6 | 30 | 15 |
| SSL1306HC-1R5M-S | 1.5 | 100 | 4.0 | 25 | 15 |
| SSL1306HC-2R2M-S | 2.2 | 75 | 6.1 | 20 | 12 |
| SSL1306HC-3R3M-S | 3.3 | 60 | 8.6 | 17 | 10 |
| SSL1306HC-3R9M-S | 3.9 | 55 | 10 | 15 | 9.0 |
| SSL1306HC-4R7M-S | 4.7 | 40 | 14 | 13 | 8.4 |
| SSL1306HC-6R0M-S | 6.0 | 35 | 17 | 12 | 7.5 |
| SSL1306HC-7R8M-S | 7.8 | 35 | 18 | П | 7.5 |
| SSL1306HC-100M-S | 10 | 28 | 26 | 10 | 6.0 |
| SSL1306HC-150M-S | 15 | 20 | 32 | 8 | 4.4 |

^{*} L :Tested at 0.1 Vrms, 100 KHz (HP-4192A)

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

^{**} Isat : Inductance Drop = 10% Typ.

^{***} $\Delta T = 40^{\circ} C$ Typ at Irms.



ELECTRICAL CHARACTERISTICS: LEAD-FREE & ROHS COMPLIANCE

| PART NO. | INDUCTANCE | TOLERANCE | Rdc (Ω) | Isat (A) | Irms (A) | SRF |
|--------------------|------------|-----------|------------|-------------|-------------|-----------|
| | (nH) | (±%) | | | | (KHz)Typ. |
| SSL1306HC-R78 🗌 -N | 0.78 | 20 | 0.0026+0 | 30TYP. | 15 | 156 |
| SSL1306HC-1R5 -N | 1.5 | 20 | 0.0040+0 | 25TYP. | 15 | 100 |
| SSL1306HC-2R2 🗌 -N | 2.2 | 20 | 0.0061+0 | 20TYP. | 12 | 75 |
| SSL1306HC-3R3 🗌 -N | 3.3 | 20 | 0.0086+0 | I7TYP. | 10 | 60 |
| SSL1306HC-3R9 🗌 -N | 3.9 | 20 | 0.0100+0 | ISTYP. | 9 | 55 |
| SSL1306HC-4R7 🗌 -N | 4.7 | 20 | 0.0140+0 | I3TYP. | 8.4 | 40 |
| SSL1306HC-6R0 🗌 -N | 6 | 20 | 0.0170+0 | I2TYP. | 7.5 | 35 |
| SSL1306HC-7R8 🗌 -N | 7.8 | 20 | 0.0180+0 | IITYP. | 7.5 | 35 |
| SSL1306HC-100 🗌 -N | 10 | 20 | 0.0260+0 | IOTYP. | 6 | 28 |
| SSL1306HC-150 -N | 15 | 20 | 0.0320+0 | 8TYP. | 4.4 | 20 |

NOTE: __-tolerance M=±20% / T=±30%

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

^{2.}Inductance drop 10% typ. at last

^{3.} ΔT =40°C rise typ.at Irms.

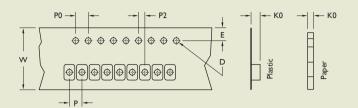
[&]quot;-N"FOR COMPLETELY LEAD FREE TYPE(INCLUDING FERRITE BODY & SOLDER)

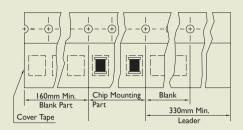


TAPE DIMENSIONS

TAPE MATERIAL

Carrier Tape : Polystyrene Cover Type : Polyethylene

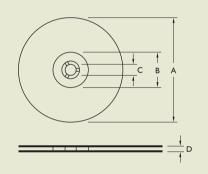


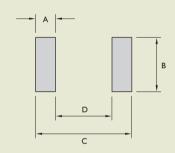


REEL DIMENSIONS

RECOMMENDED PATTERN

Land Pattern





Dimensions : mm

| TYPE | TAPE DIMENSIONS | | | | | | RECOMMENDED PATTERN | | | | REEL DIMENSIONS | | | QUANTITY /REEL | | | |
|-----------|--------------------|------|------|----|----|----|------------------------|------|-------|-------|--------------------|-------|-----|-------------------|----|------|------|
| | K0 | D | E | W | Р | P0 | P2 | UNIT | Α | В | С | D | A | В | С | D | _ |
| SSL0503HC | 5.3 | 1.55 | 1.75 | 16 | 12 | 4 | 2 | In | 0.075 | 0.160 | 0.350 | 0.200 | 330 | 100 | 13 | 17.4 | 1000 |
| | | | | | | | | mm | 1.91 | 4.06 | 8.89 | 5.08 | | | | | |
| SSL0804HC | 6.1 | 1.55 | 1.75 | 24 | 16 | 4 | 2 | In | 0.060 | 0.160 | 0.460 | 0.34 | 330 | 100 | 13 | 24.2 | 750 |
| | | | | | | | | mm | 1.521 | 4.06 | 11.68 | 8.64 | | | | | |
| SSL1306HC | 7.2 | 1.55 | 1.75 | 44 | 24 | 4 | 2 | In | 0.125 | 0.340 | 0.820 | 0.560 | 330 | 100 | 13 | 45.4 | 250 |
| | | | | | | | | mm | 3.18 | 8.64 | 20.71 | 14.35 | | | | | |



SSL SERIES RELIABILITY TEST

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

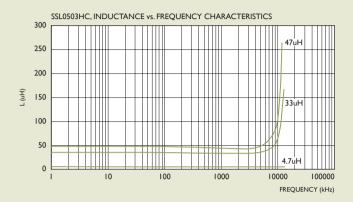
1-2 ENVIRONMENTAL PERFORMANCE

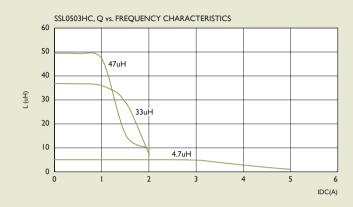
| NO. | ITEM | SPECIFICATION | TEST CONDIT | TIONS | | | | |
|-------|---------------------|----------------------------|--|-------------------------------|--------------|--|--|--|
| 1-2-1 | Temperature Shock | Appearance : No Damage | 10 Cycles (Air to Air) 1 Cycles shall Consist of : 30Min. Exposure to -55°C 30Min. Exposure to 125°C 15Sec. Max. Transition between Temperatures | | | | | |
| | | L Change : within ±10% | | | | | | |
| | | L Change : within ±30% | | | | | | |
| | | RDC : within Specification | | | | | | |
| | | | Measured after Exposure in the Room Condition for 24Hrs. | | | | | |
| 1-2-2 | Temperature Cycle | _ | One Cycle | | | | | |
| | | | Step Temperature | | Time (Min.) | | | |
| | | | I | -25 ± 3 | 30 | | | |
| | | | 2 | 25 ± 2 | 3 | | | |
| | | | 3 | 85 ± 3 | 30 | | | |
| | | | 4 | 25 ± 2 | 3 | | | |
| | | | Total: 100 Cyc | les | | | | |
| | | | Measured after | Exposure in the Room Conditio | n for 24Hrs. | | | |
| -2-3 | Humidity Resistance | _ | Temperature : 40 ± 2°C | | | | | |
| | | | Relative Humid | lity: 90 ~ 95% | | | | |
| | | | Time : 1000Hrs. | | | | | |
| | | | Measured after | Exposure in the Room Conditio | n for 24Hrs. | | | |
| 2-4 | High Temperature | | Temperature : 85 ± 3°C | | | | | |
| | Resistance | | Relative Humid | Relative Humidity: 20% | | | | |
| | | | Applied Current : Rated Current | | | | | |
| | | | Time: 1000Hrs. | | | | | |
| | | | Measured after | Exposure in the Room Conditio | n for 24Hrs. | | | |
| -2-5 | Low Temperature | | Temperature : -25 ± 3°C | | | | | |
| | Resistance | | Relative Humidity : 0% | | | | | |
| | | | Time: 1000Hrs. | | | | | |
| | | | Measured after | Exposure in the Room Conditio | n for 24Hrs. | | | |

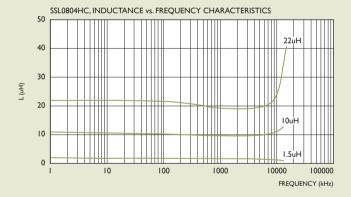


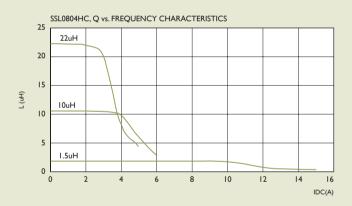
TYPICAL ELECTRICAL CHARACTERISTICS

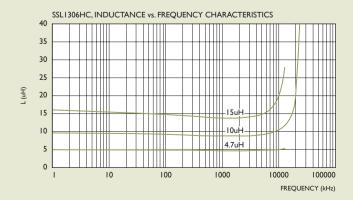
Curves of SSL Series

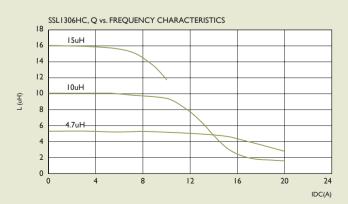






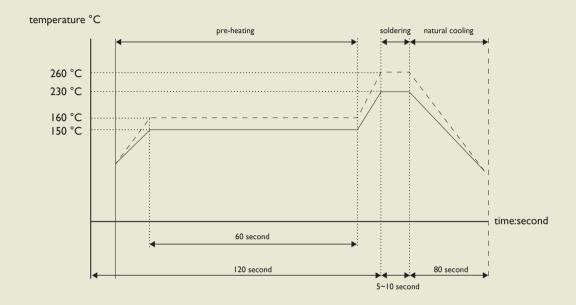






RECOMMEND SOLDERING CONDITIONS

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



for: lead solder ————
for: lead-free solder ……………