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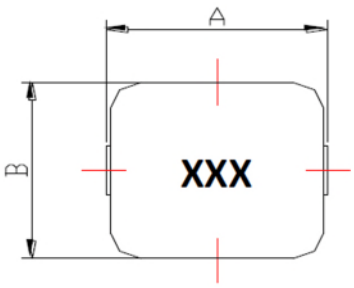
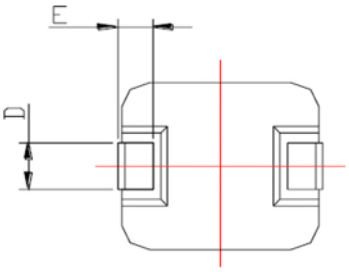
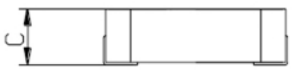
■ REVISION CHANGE RECORD

REV	ISSUE OF NEW SPECIFICATION	DATE OF ISSUE
AAM	Initial Release.	2023/08/22

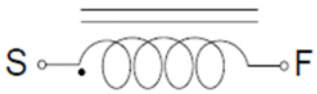
■ SHAPES AND DIMENSIONS



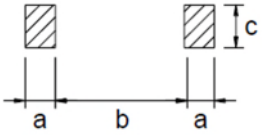




Schematic



Recommended Pad Layout



Unit	A Max.	B Max.	C Max.	D	E	a Ref.	b Ref.	c Ref.
mm	7.3	6.8	3.0	2.9±0.5	1.6±0.5	2.5	3.7	3.5
inch	0.287	0.268	0.118	0.114±0.02	0.063±0.02	0.098	0.146	0.138
Marking： “XXX”								

■ PART NUMBER CODE

SPI	**0603**	**H**	**S**	–	**R10**	**M**	**A**
1	***2***	***3***	***4***		***5***	***6***	***7***

1. Series Name

2. Size code

3. Material code

4. Special code

5. Inductance (R=Decimal Point) Unit：uH; R10=0.1uH

6. Inductance tolerance：”M”±20%.

7. Soldering：A=Lead Free

RoHS

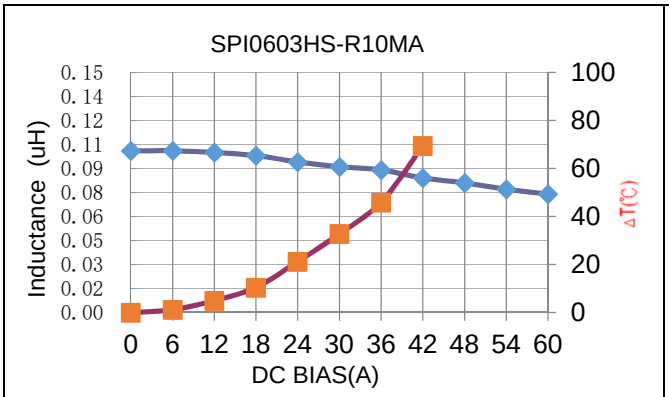
■ PART NUMBER AND CHARACTERISTICS TABLE

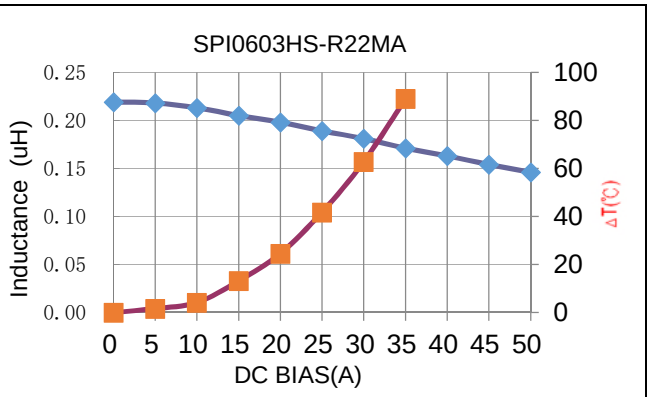
Part Number	Initial Inductance (uH)	Tolerance (±%)	DCR (mΩ) Max.	Temperature Rise Current (Amps)	Saturation Current (Amps)
SPI0603HS-R10MA	0.10	20	1.7	32.5	60.0
SPI0603HS-R22MA	0.22	20	2.8	23.0	40.0
SPI0603HS-R33MA	0.33	20	3.9	20.0	30.0
SPI0603HS-R36MA	0.36	20	3.9	20.0	30.0
SPI0603HS-R47MA	0.47	20	4.5	17.5	26.0
SPI0603HS-R56MA	0.56	20	5.5	16.5	26.0
SPI0603HS-R68MA	0.68	20	5.5	15.5	25.0
SPI0603HS-R82MA	0.82	20	8.0	13.0	24.0
SPI0603HS-1R0MA	1.00	20	10.0	11.0	22.0
SPI0603HS-1R2MA	1.20	20	10.0	11.0	20.0
SPI0603HS-1R5MA	1.50	20	15.0	9.0	18.0
SPI0603HS-2R2MA	2.20	20	20.0	8.0	14.0
SPI0603HS-3R3MA	3.30	20	30.0	6.0	13.5
SPI0603HS-4R7MA	4.70	20	40.0	5.5	10.0
SPI0603HS-5R6MA	5.60	20	55.0	5.0	9.0
SPI0603HS-6R8MA	6.80	20	60.0	4.5	8.0
SPI0603HS-8R2MA	8.20	20	68.0	4.0	7.5
SPI0603HS-100MA	10.00	20	85.0	3.5	6.0
SPI0603HS-150MA	15.00	20	110.0	3.0	4.5

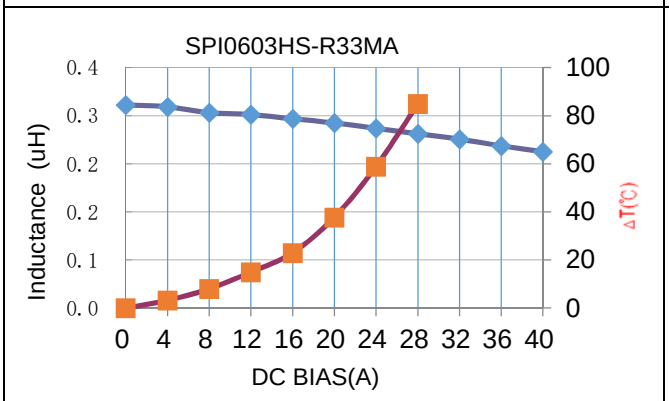
Note:
1. Operating temperature: - 55°C to +125°C
2. Initial Inductance: Testing at 100KHz/ 0.25Vrms
3. Saturation Current: DC current that will cause initial Inductance to drop approximately 25%.
4. Heating Current: DC current that will cause an approximate ΔT of 40°C.
5. All test data is referenced to 25°C ambient.

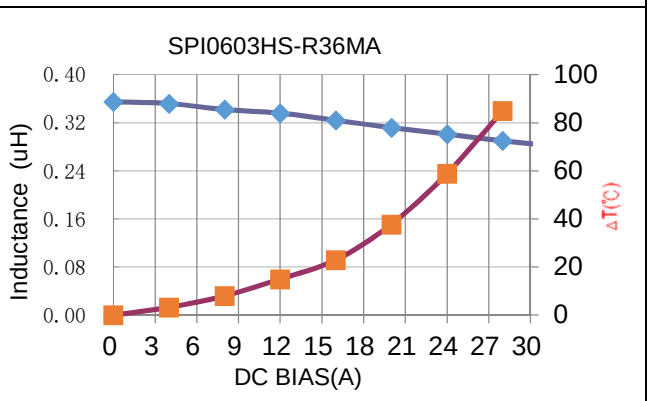
RoHS

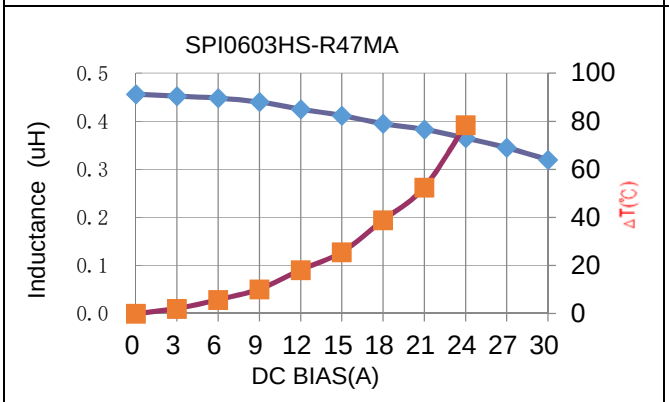
■ TYPICAL PERFORMANCE CURVES

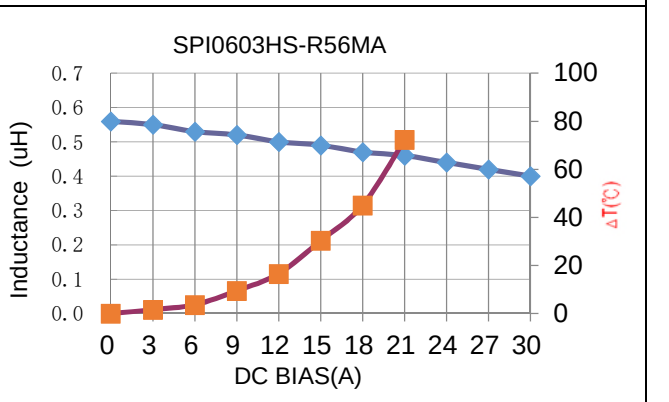


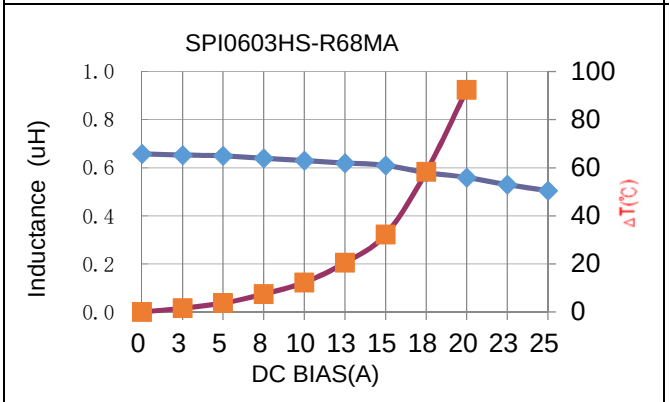


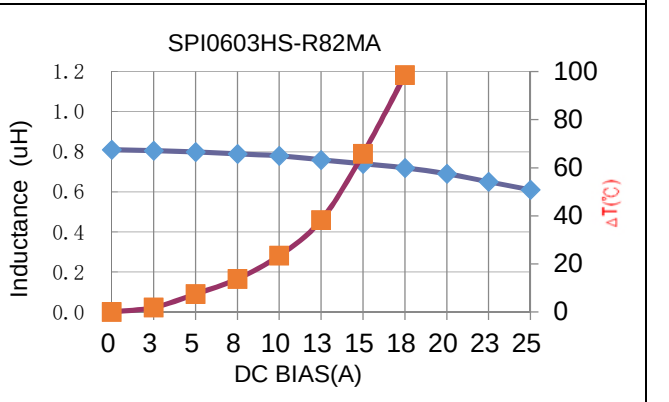






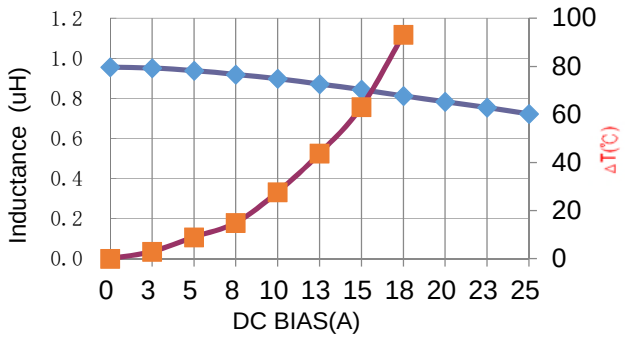




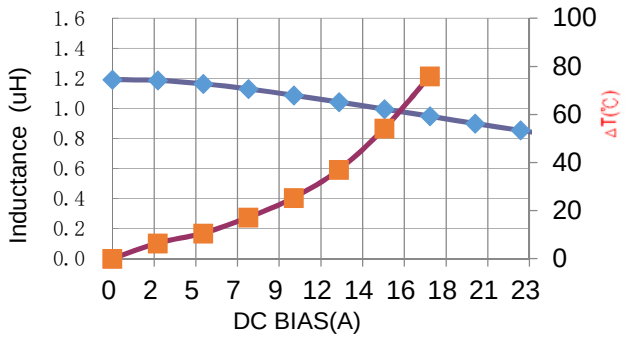


RoHS

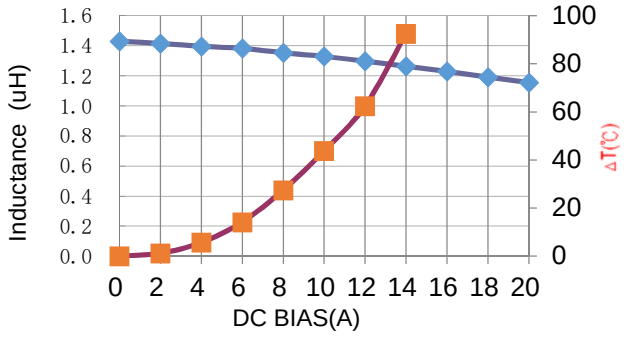
SPI0603HS-1R0MA



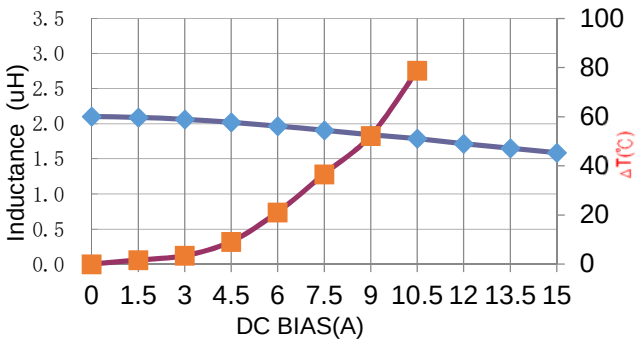
SPI0603HS-1R2MA



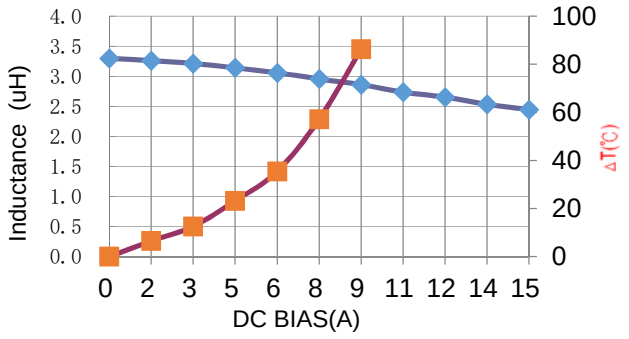
SPI0603HS-1R5MA



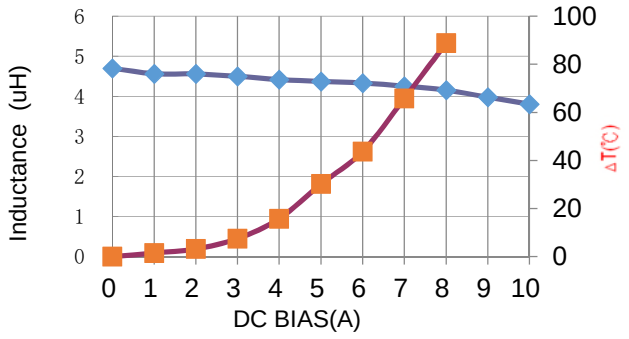
SPI0603HS-2R2MA



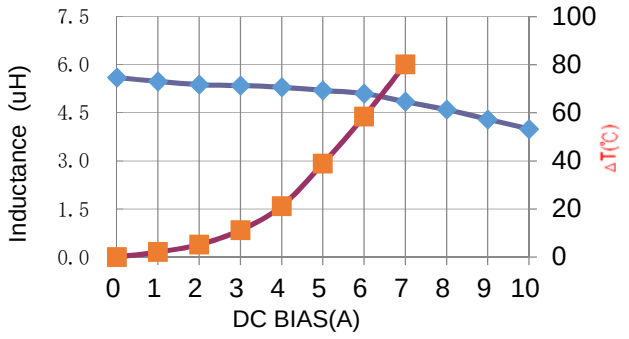
SPI0603HS-3R3MA



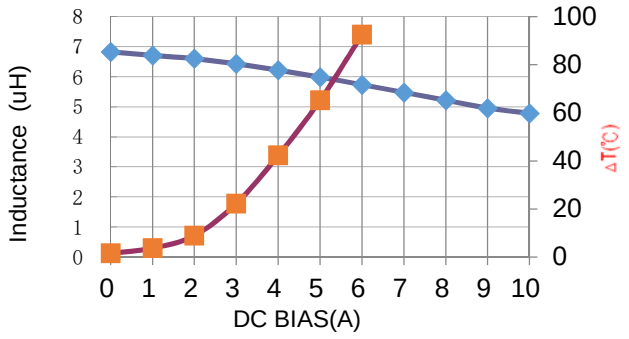
SPI0603HS-4R7MA



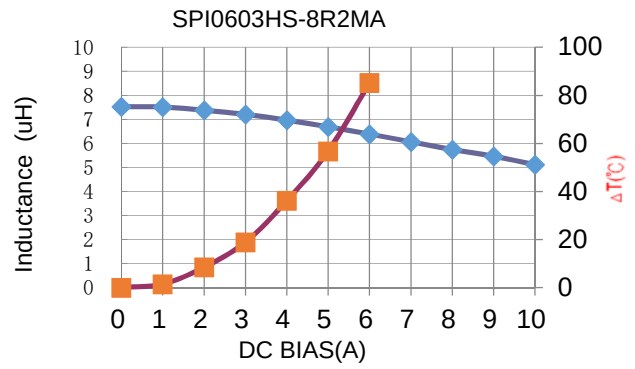
SPI0603HS-5R6MA

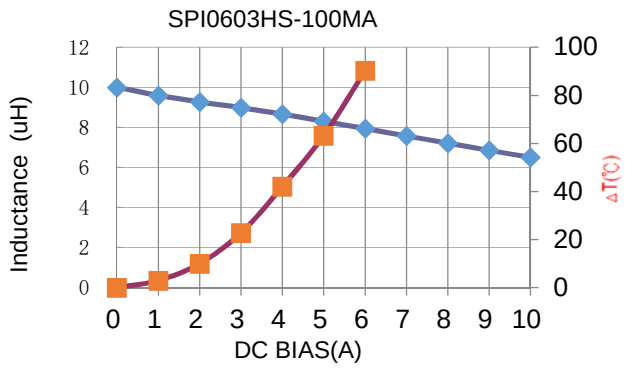


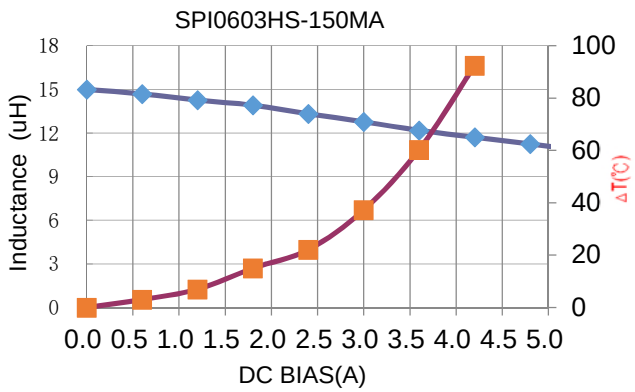
SPI0603HS-6R8MA



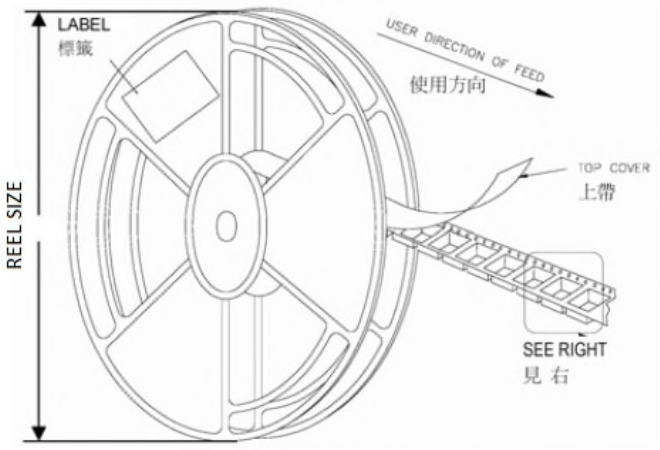
RoHS

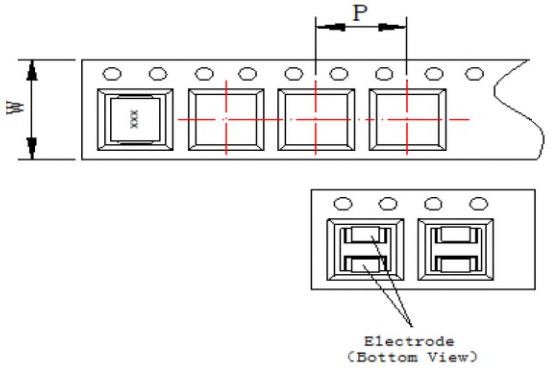

SPI0603HS-8R2MA
Inductance (uH)
ΔT(℃)
DC BIAS(A)
0 1 2 3 4 5 6 7 8 9 10
0 20 40 60 80 100


SPI0603HS-100MA
Inductance (uH)
ΔT(℃)
DC BIAS(A)
0 1 2 3 4 5 6 7 8 9 10
0 20 40 60 80 100


SPI0603HS-150MA
Inductance (uH)
ΔT(℃)
DC BIAS(A)
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0
0 20 40 60 80 100

■ REEL DIMENSIONS AND PACKAGING QUANTITY



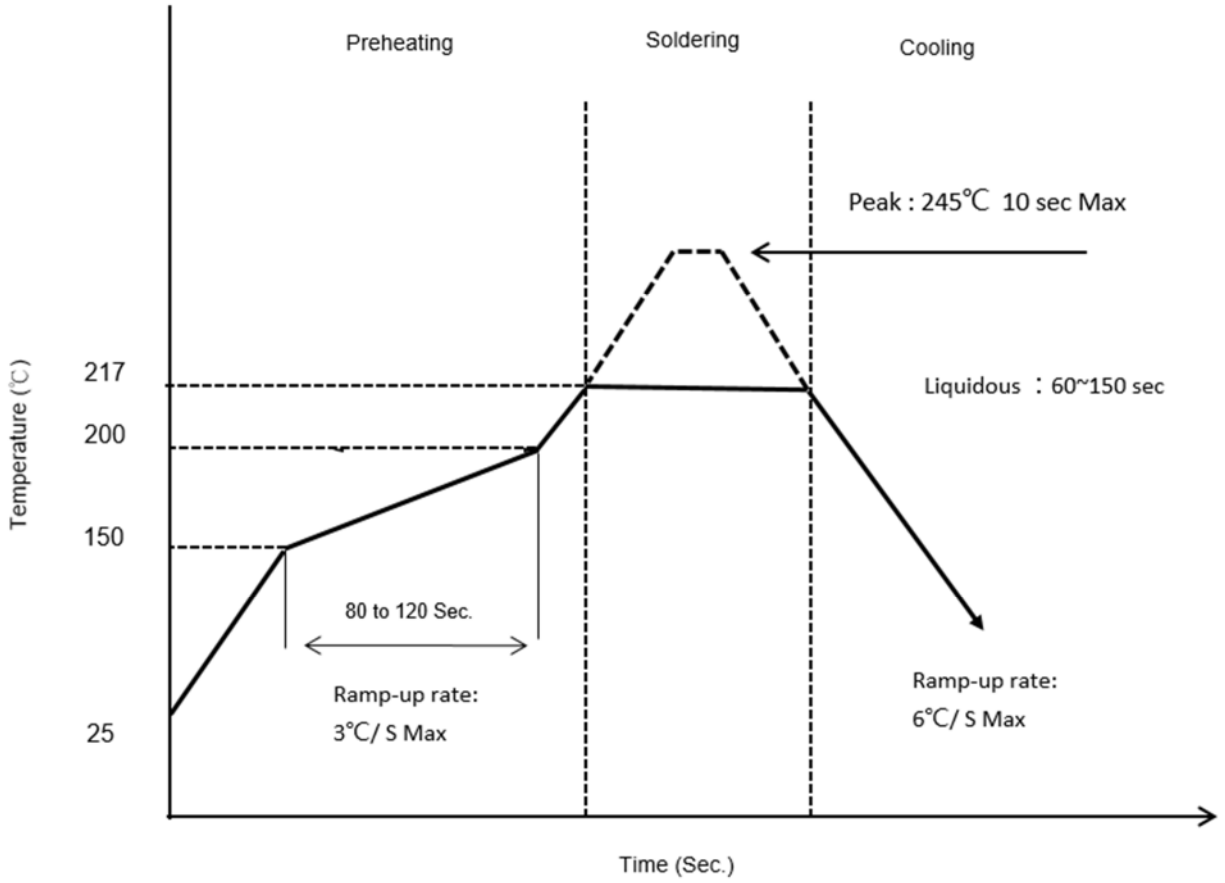


Unit: mm

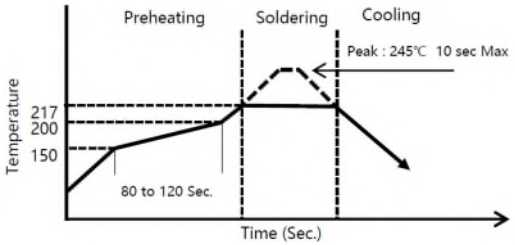
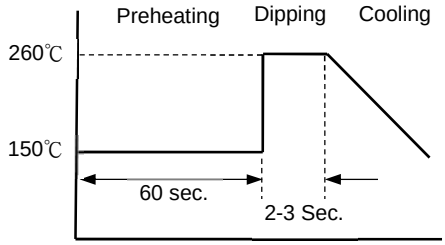
TYPE	W	P	REEL SIZE	PCS / REEL
SPI0603HS Series	16	12	330 mm(13”)	1500

■ RECOMMENDED SOLDERING CONDITIONS

1. Re-flow Soldering



■ RELIABILITY AND TEST CONDITION

<table>
<tr><th>ITEM</th><th>SPECIFICATION</th><th>CONDITION</th></tr>
<tr><td>Resistance to Soldering Heat</td><td>More than 95% of the terminal electrode should be covered with solder.</td><td> 
</td></tr>
<tr><td>Solderability</td><td>Inductance within ±20% of initial value.
No disconnection or short circuit.
The appearance shall not break.</td><td> 
</td></tr>
<tr><td>Heat Resistance</td><td>Inductance within ±20% of initial value.
No disconnection or short circuit.
The appearance shall not break.</td><td>After 1000 hours in 125±5℃ and 1 hour drying under normal condition.</td></tr>
<tr><td>Cold Resistance</td><td>Inductance within ±20% of initial value.
No disconnection or short circuit.
The appearance shall not break.</td><td>After 1000 hours in -40±2℃ and 1 hour drying under normal condition.</td></tr>
<tr><td>Thermal Shock</td><td>Inductance within ±20% of initial value.
No disconnection or short circuit.
The appearance shall not break.</td><td>After 100 cycles
<table>
<tr><th>Step</th><th>Temperature (℃)</th><th>Times (min.)</th></tr>
<tr><td>1</td><td>-40±2℃</td><td>30</td></tr>
<tr><td>2</td><td>Room Temperature</td><td>Within 3</td></tr>
<tr><td>3</td><td>125±5℃</td><td>30</td></tr>
<tr><td>4</td><td>Room Temperature</td><td>Within 3</td></tr>
</table></td></tr>
<tr><td>Humidity Resistance</td><td>Inductance within ±20% of initial value.
No disconnection or short circuit.
The appearance shall not break.</td><td>After 1000 hours in 85°C/85%RH. Measurement at 24±2 hours after test conclusion.</td></tr>
<tr><td>Vibration Test</td><td>Inductance within ±20% of initial value and appearance shall not break.</td><td>1. Reflow: 2times
2. Frequency: 10HZ～55HZ～10HZ，20 Min/Cycles
3. Amplitude: 1.52 mm
4. Directions: X,Y,Z
5. Time: 12 cycle / direction.</td></tr>
</table>

RoHS

■ NOTE

1. Storage condition:

To maintain the solderability of terminal electrodes:

1.1. Temperature and humidity conditions: 5~35℃ and 35~70%RH.

1.2. Storage life: 12 months Max. If product is preserved for more than 1 year, the solderability of their terminals may be deteriorated.

1.3. The packaging material should be kept where no chlorine or corrosive gas environment. (example: salt, sulfur, acid, etc ..)

2. Transportation

2.1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.

2.2. The use of tweezers or vacuum pick up is strongly recommended for individual components.

2.3. Bulk handling should ensure that abrasion and mechanical shock are minimized.

3. Application

The products listed on this datasheet are intended for use in general electronic equipment under a normal operation and use condition.
The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. ETC shall not be held liable for any malfunction or breakdown caused by using product in the condition which is inconsistent with that recommended by ETC.

(1)Military equipment. (2)Medical equipment. (3)Aerospace equipment. (4) Other applications that are not considered general-purpose applications.