# SPI13 SERIES

Shielded Power Inductor (DR Type THT)

## 磁屏蔽工字电感

Shielded Power Inductor (DR Type THT)

### 特性

Characteristics

径向通孔电感器

Radial through-hole inductor

高饱和岩心材料

High saturation core material

大电流容量

High current capacity

### 应用

Application

适用于高频开关电源

Signal filtering

开关、中小电压开关电源

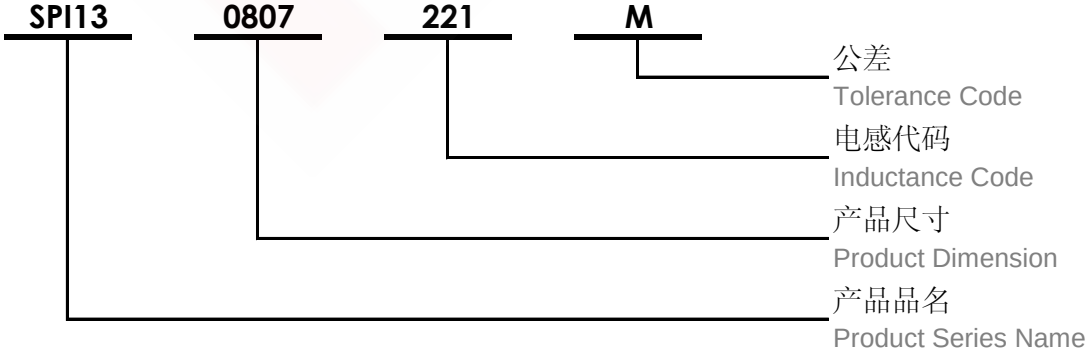
Switches, switching power supply for small and medium voltage

电源滤波器

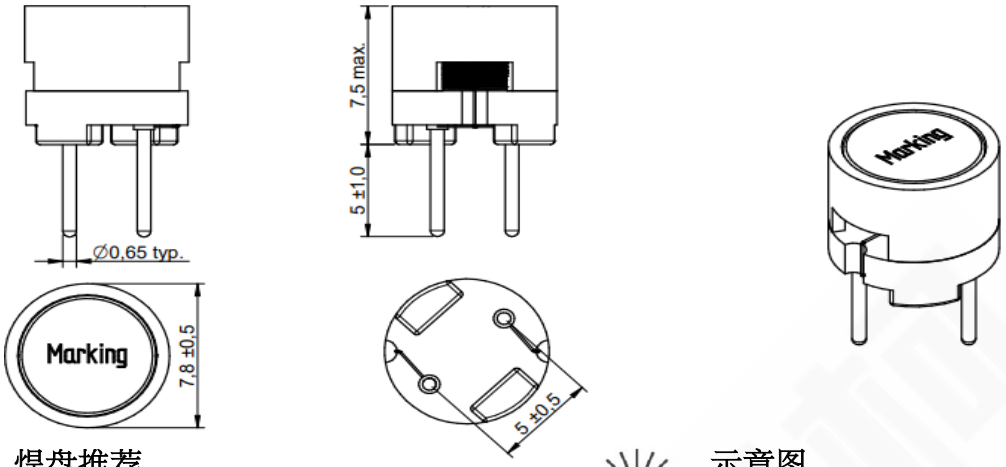
Power supply filter

### 产品品名介绍

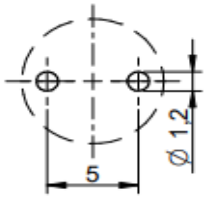
Product Number Structure



## 尺寸
Dimension (mm)




## 焊盘推荐
Land Pattern Recommended (mm)




## 示意图
Schematics

## 电性特性
Electrical Properties

| 型号 Part No. | 电感 Inductance μH | 温升电流 Rated Current IR max 40°C (A) | 直流电阻 DCResistance DCRmax (mΩ) | 饱和电流 Saturation Current Isat typ (A) | 吸塑盘数量 Tray Qty. pcs |
|---|---|---|---|---|---|
| SPI13-0807-680K | 68 ±10% | 1.50 | 200 | 1.00 | 140 |
| SPI13-0807-331K | 330 ±10% | 0.65 | 830 | 0.45 | 140 |
| SPI13-0807-471K | 470 ±10% | 0.60 | 1,300 | 0.40 | 140 |
| SPI13-0807-681K | 680 ±10% | 0.52 | 1,820 | 0.20 | 140 |
| SPI13-0807-102K | 1,000 ±10% | 0.35 | 2,300 | 0.25 | 140 |
| SPI13-0807-152K | 1,500 ±10% | 0.40 | 2,820 | 0.20 | 140 |
| SPI13-0807-222K | 2,200 ±10% | 0.20 | 4,600 | 0.18 | 140 |
| SPI13-0807-332K | 3,300 ±10% | 0.18 | 80,000 | 0.15 | 140 |
| SPI13-0807-472K | 4,700 ±10% | 0.16 | 11,400 | 0.14 | 140 |
| SPI13-0807-562K | 5,600 ±10% | 0.13 | 15,700 | 0.07 | 140 |
| SPI13-0807-822K | 8,200 ±10% | 0.10 | 16,000 | 0.05 | 140 |

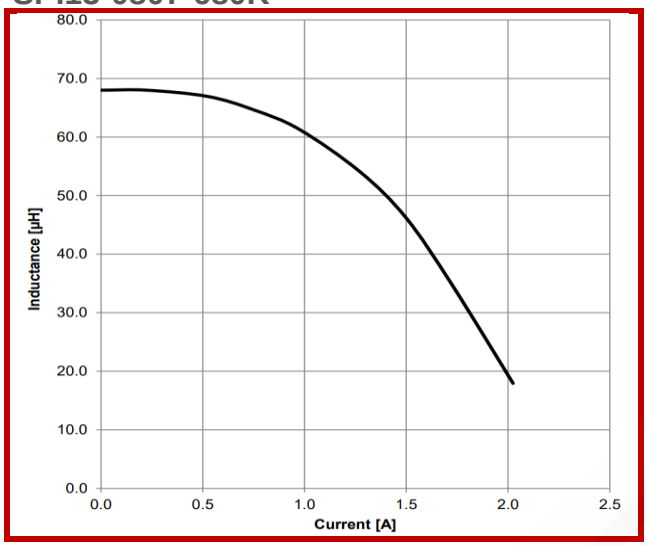
### 测试状态
Test Condition

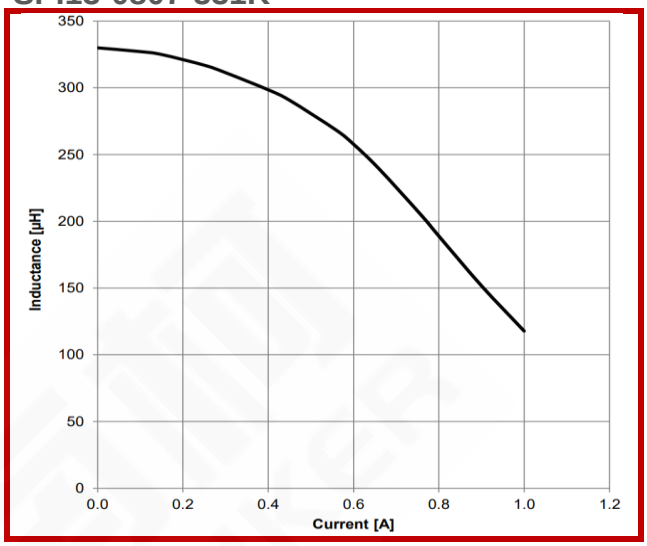
☆ 电感测试条件为 100 kHz/ 5.0 mA
Inductance measure condition at 100 kHz/ 5.0 mA

☆ 工作温度：-40°C ~ +125°C
Operating Temperature: -40°C ~ +125°C

☆ 饱和电流：电感值下降其初始值的10%时所加载的实际直流电流值
Saturation Current: The actual value of DC current when the inductance drop 10% of initial value

## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

### SPI13-0807-680K



### SPI13-0807-331K
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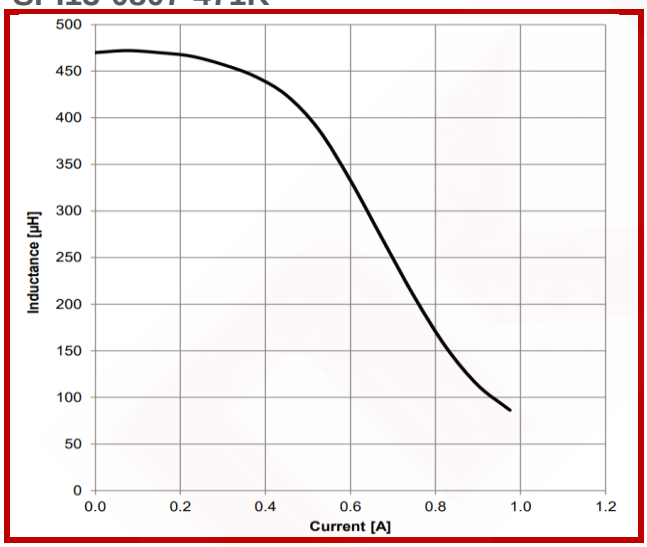
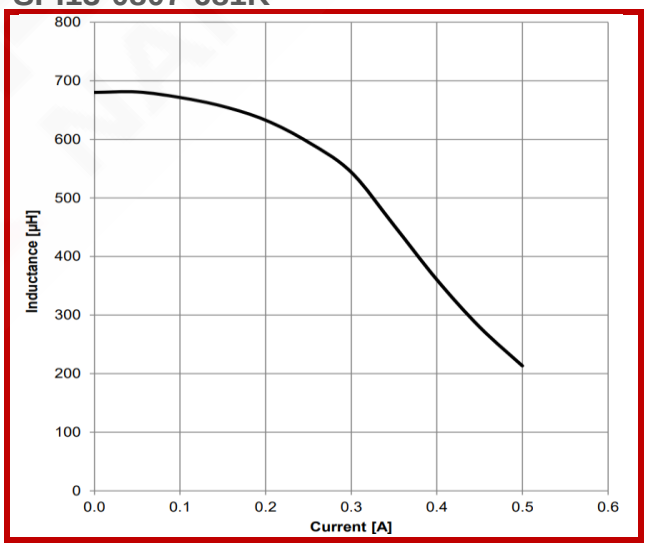
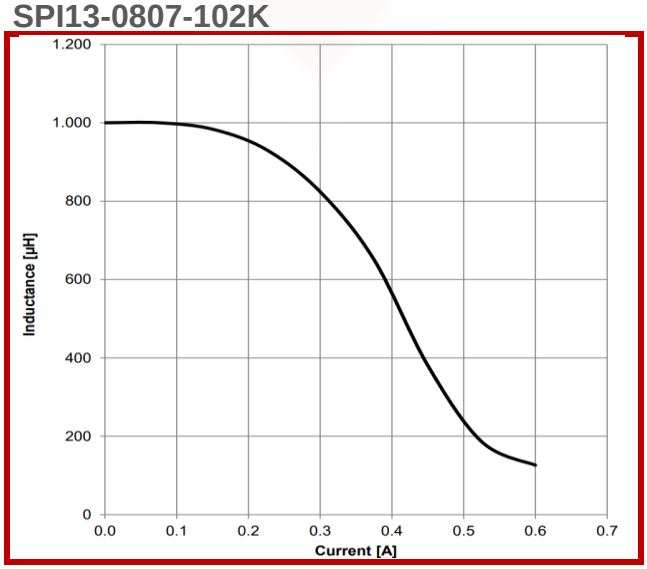
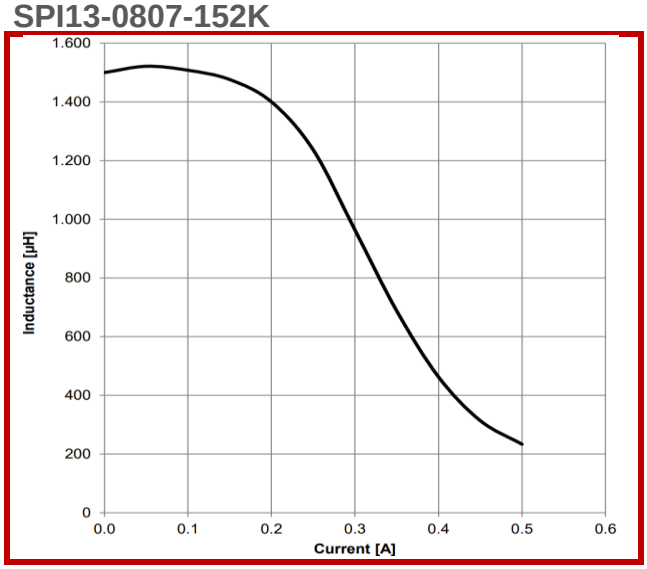
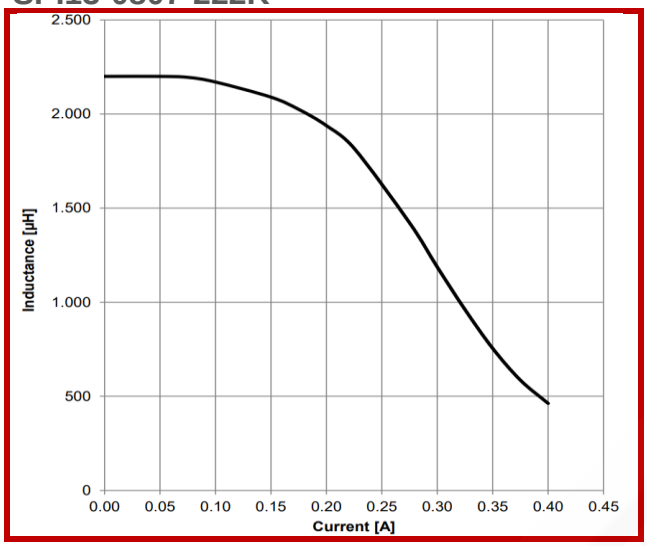


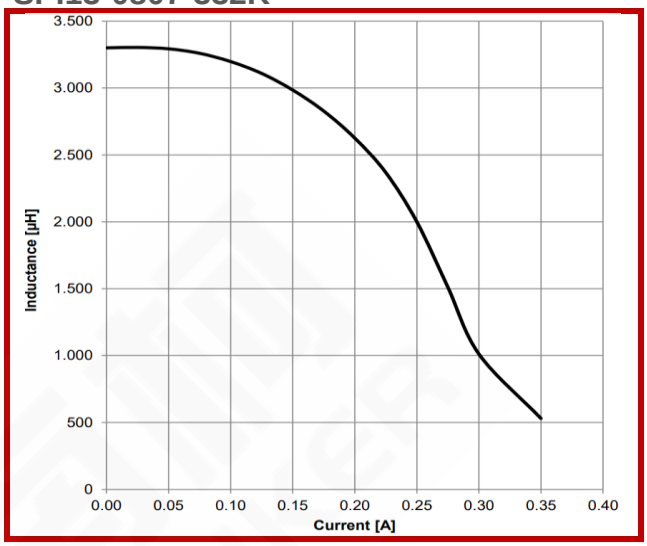

### SPI13-0807-681K


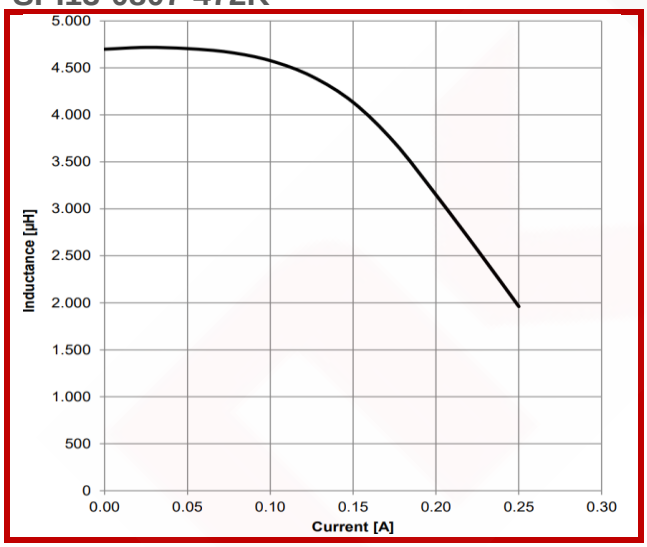

### SPI13-0807-102K


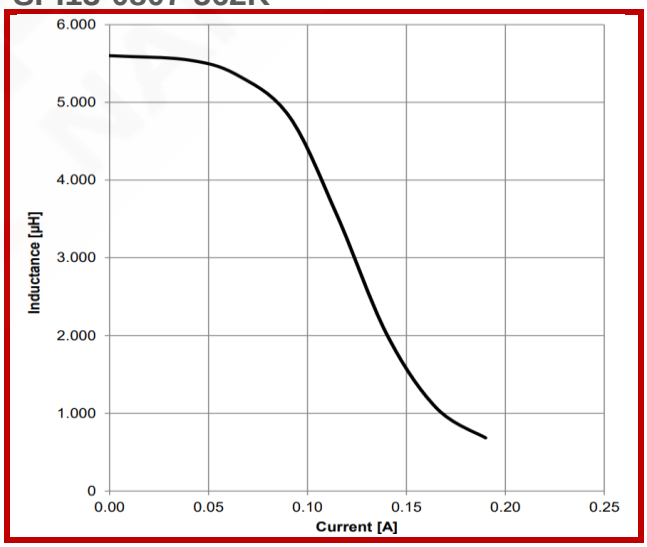

### SPI13-0807-152K


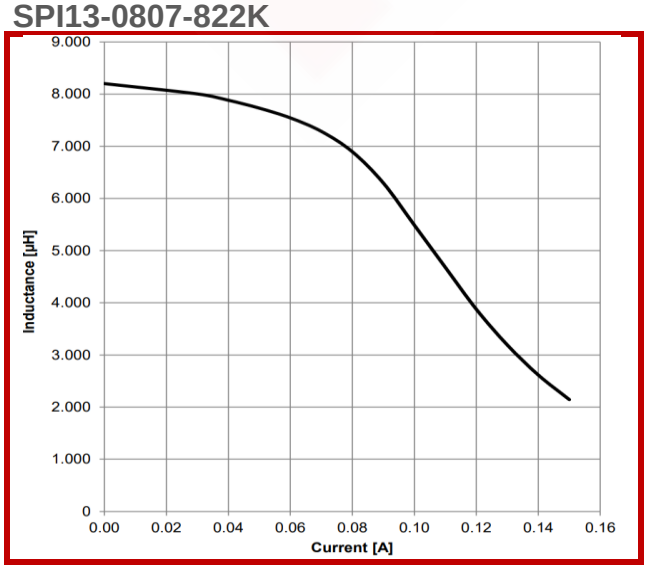
## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

### SPI13-0807-222K


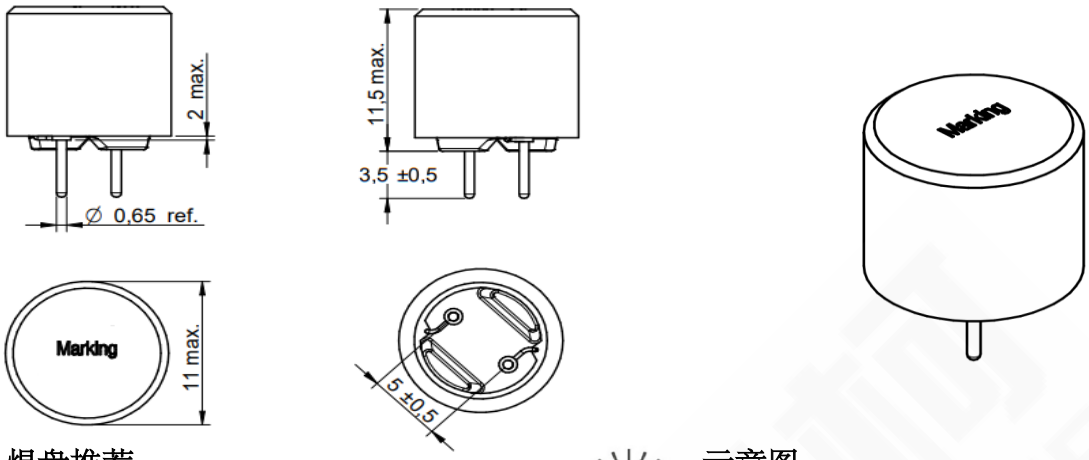

### SPI13-0807-332K



### SPI13-0807-472K


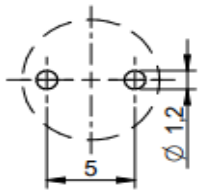

### SPI13-0807-562K



### SPI13-0807-822K


## 尺寸
Dimension (mm)




## 焊盘推荐
Land Pattern Recommended (mm)




## 示意图
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Electrical Properties

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|---|---|---|---|---|---|---|
| SPI13-1111-1R0K | 1.00 | ±10% | 10.50 | 8.00 | 22.00 | 110 |
| SPI13-1111-2R7K | 2.70 | ±10% | 8.20 | 11.00 | 13.00 | 110 |
| SPI13-1111-3R9K | 3.90 | ±10% | 7.70 | 13.00 | 11.00 | 110 |
| SPI13-1111-4R7K | 4.70 | ±10% | 6.90 | 12.20 | 6.00 | 110 |
| SPI13-1111-6R8K | 6.80 | ±10% | 6.40 | 13.90 | 5.00 | 110 |
| SPI13-1111-100K | 10.00 | ±10% | 5.10 | 22.00 | 4.20 | 110 |
| SPI13-1111-220K | 22.00 | ±10% | 3.70 | 48.00 | 3.00 | 110 |
| SPI13-1111-330K | 33.00 | ±10% | 3.60 | 61.00 | 2.80 | 110 |
| SPI13-1111-470K | 47.00 | ±10% | 3.00 | 88.00 | 2.50 | 110 |
| SPI13-1111-101K | 100.00 | ±10% | 1.60 | 190.00 | 1.40 | 110 |

### 测试状态
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Operating Temperature: -40°C ~ +125°C

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Saturation Current: The actual value of DC current when the inductance drop 10% of initial value

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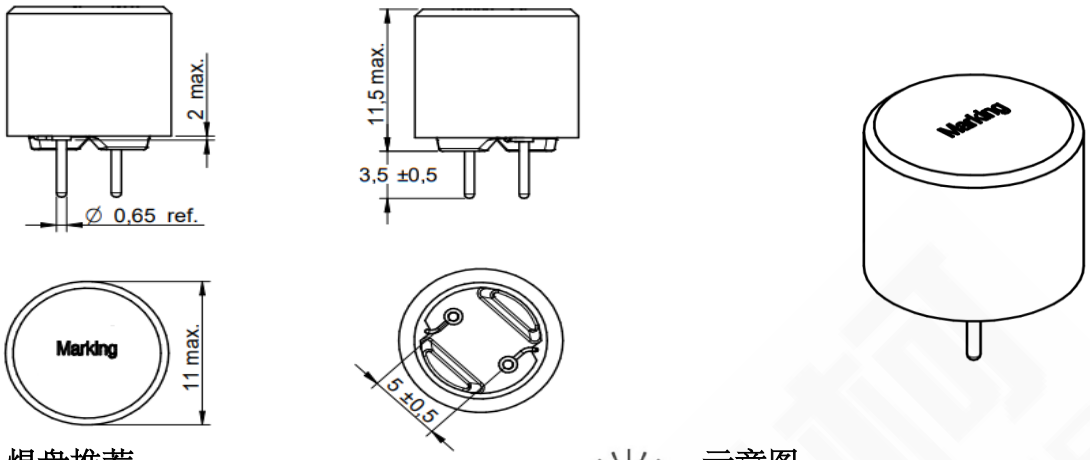
Dimension (mm)

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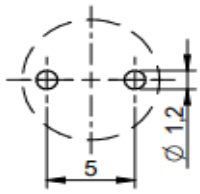
Land Pattern Recommended (mm)

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|---|---|---|---|---|---|---|
| SPI13-1111-151K | 150 | ±10% | 1.40 | 240 | 1.20 | 110 |
| SPI13-1111-221K | 220 | ±10% | 1.30 | 320 | 1.00 | 110 |
| SPI13-1111-331K | 330 | ±10% | 1.00 | 480 | 0.80 | 110 |
| SPI13-1111-471K | 470 | ±10% | 0.85 | 700 | 0.50 | 110 |
| SPI13-1111-102K | 1,000 | ±10% | 0.60 | 1,500 | 0.40 | 110 |
| SPI13-1111-222K | 2,200 | ±10% | 0.40 | 2,700 | 0.30 | 110 |
| SPI13-1111-332K | 3,300 | ±10% | 0.30 | 4,800 | 0.25 | 110 |
| SPI13-1111-472K | 4,700 | ±10% | 0.25 | 7,700 | 0.20 | 110 |
| SPI13-1111-682K | 6,800 | ±10% | 0.24 | 10,000 | 0.18 | 110 |

## 测试状态
Test Condition

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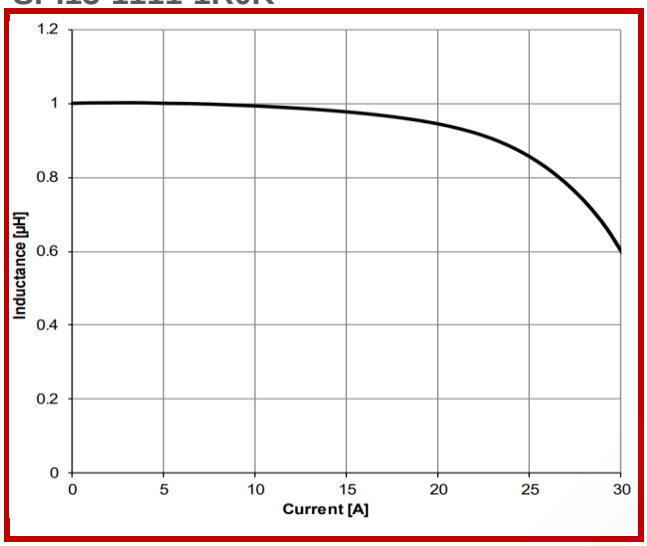
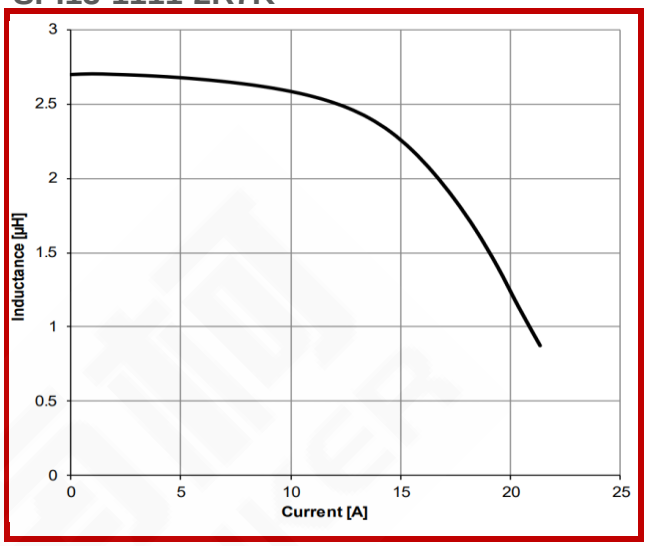
Saturation Current: The actual value of DC current when the inductance drop 10% of initial value

## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

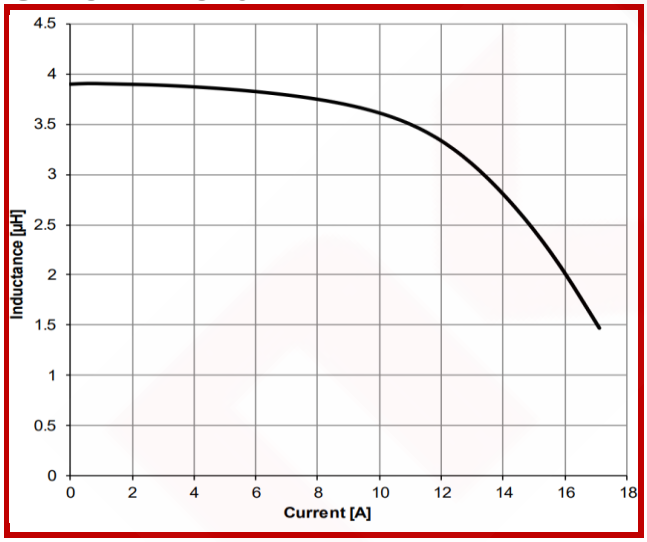
### SPI13-1111-1R0K



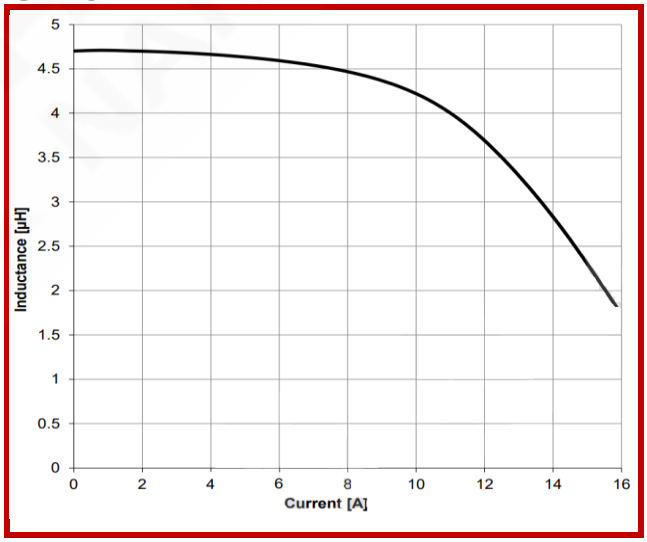

### SPI13-1111-2R7K



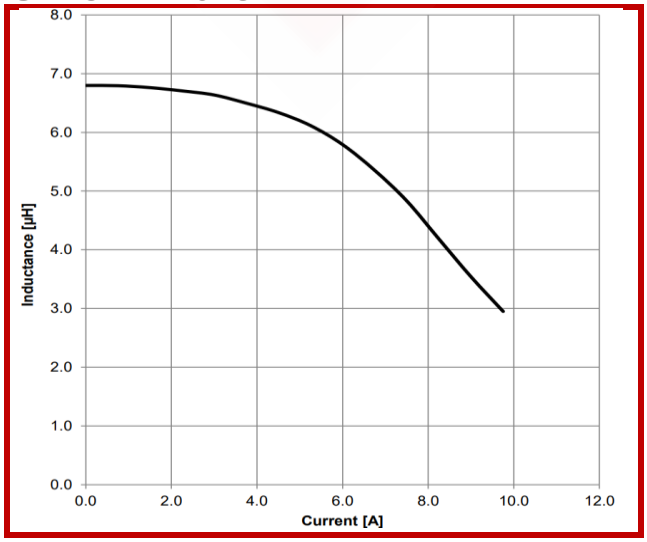

### SPI13-1111-3R9K



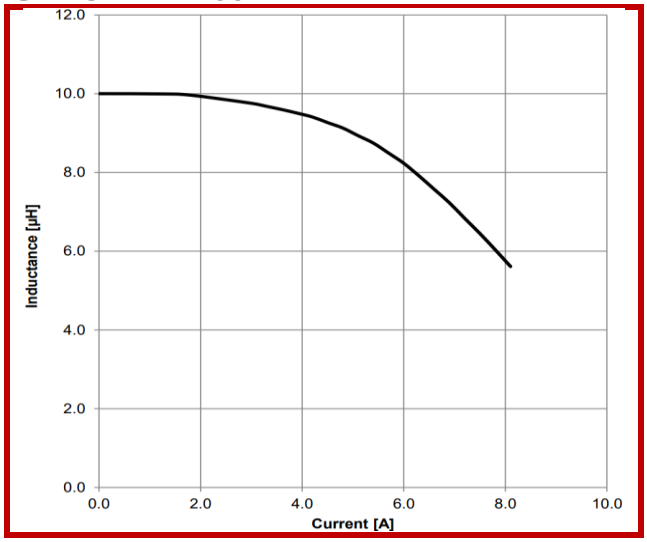

### SPI13-1111-4R7K



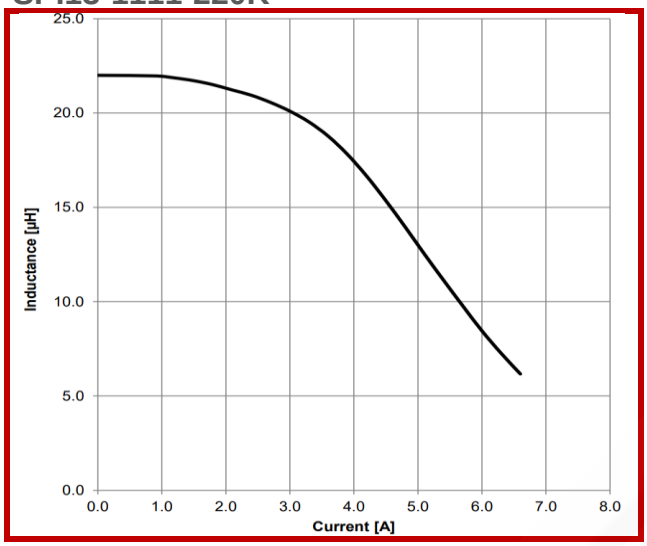

### SPI13-1111-6R8K

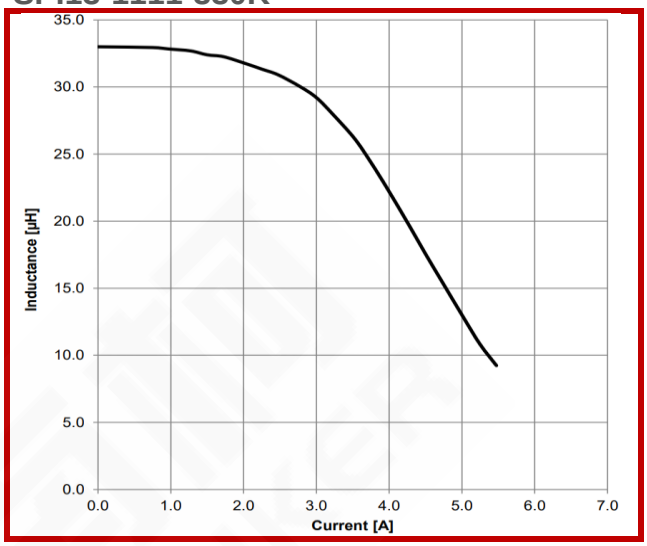


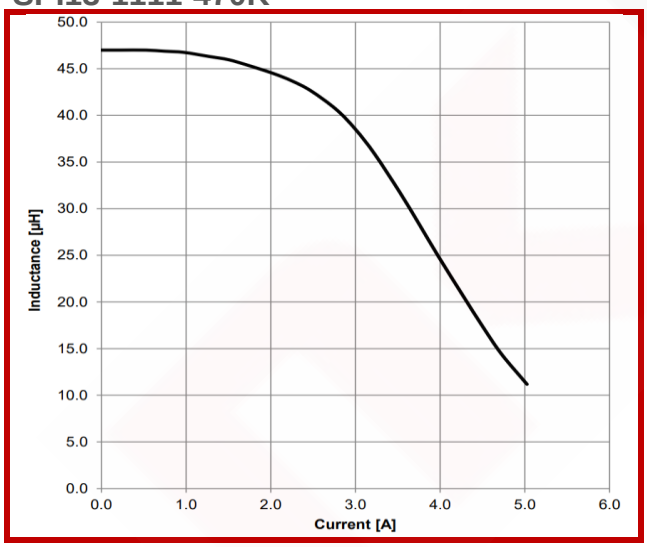

### SPI13-1111-100K

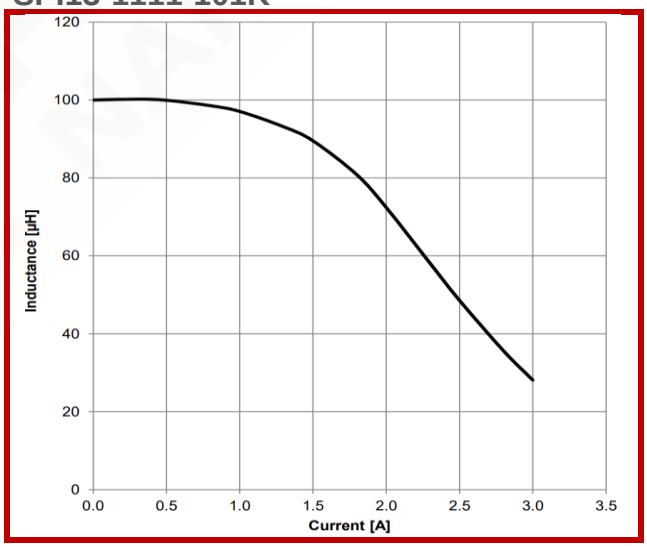


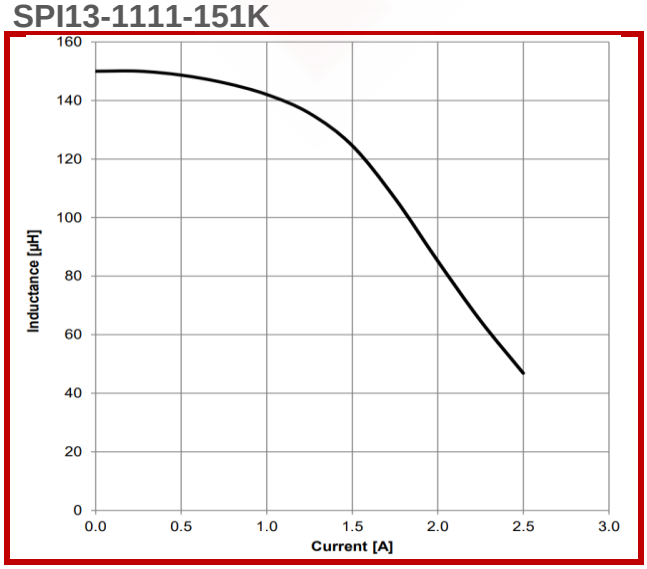
## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

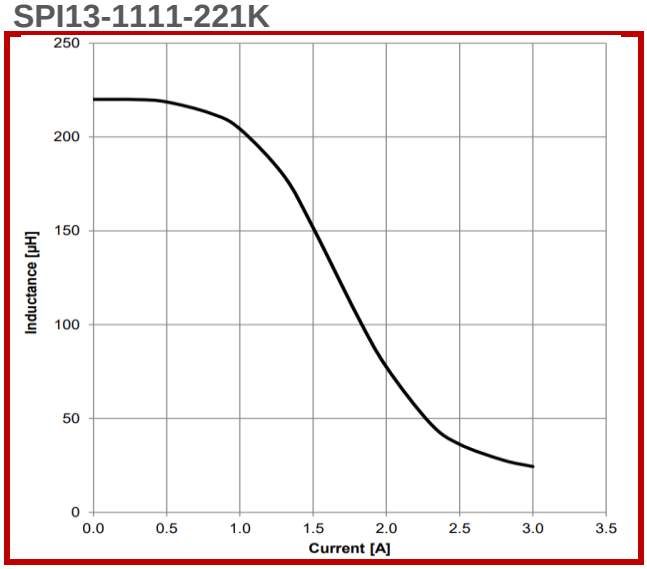
### SPI13-1111-220K



### SPI13-1111-330K


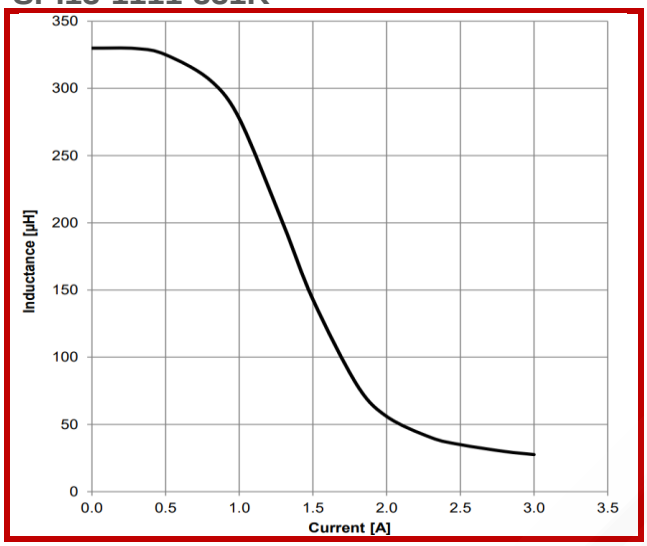

### SPI13-1111-470K


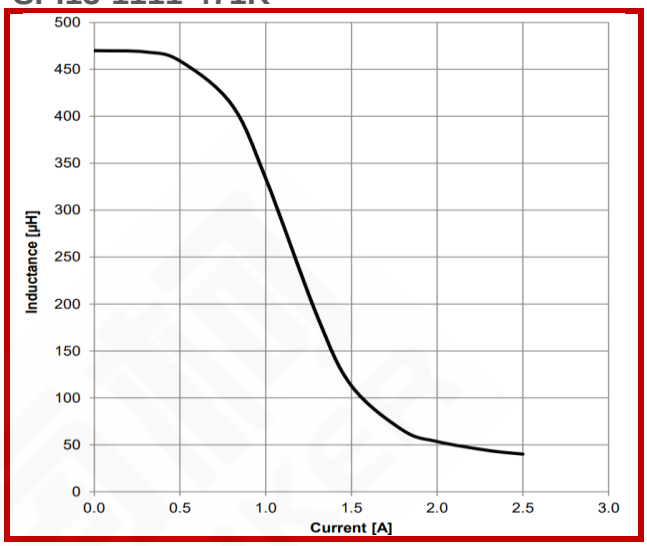

### SPI13-1111-101K


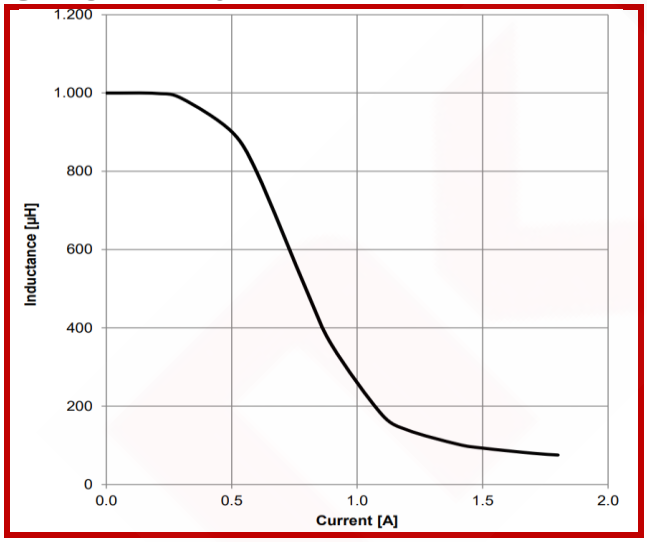

### SPI13-1111-151K


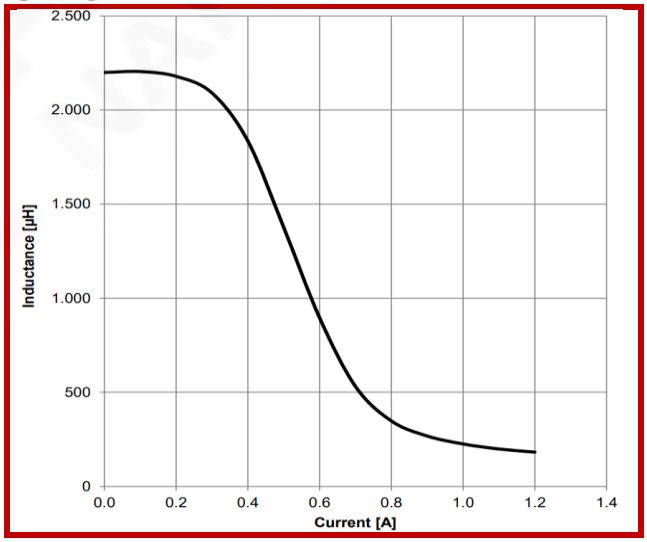

### SPI13-1111-221K


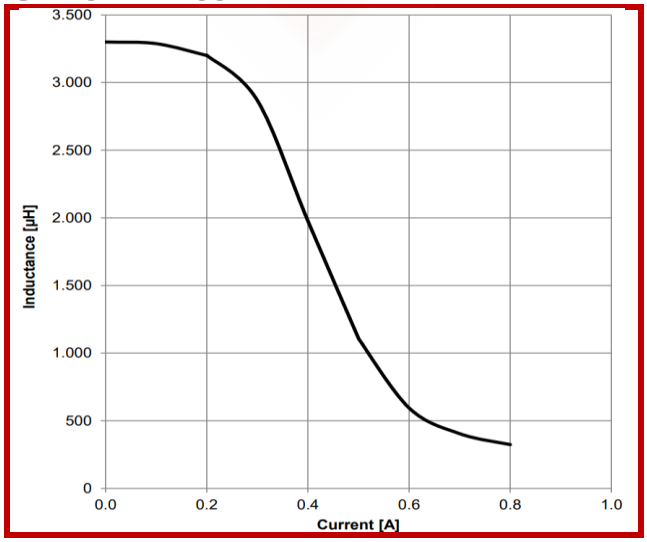
## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

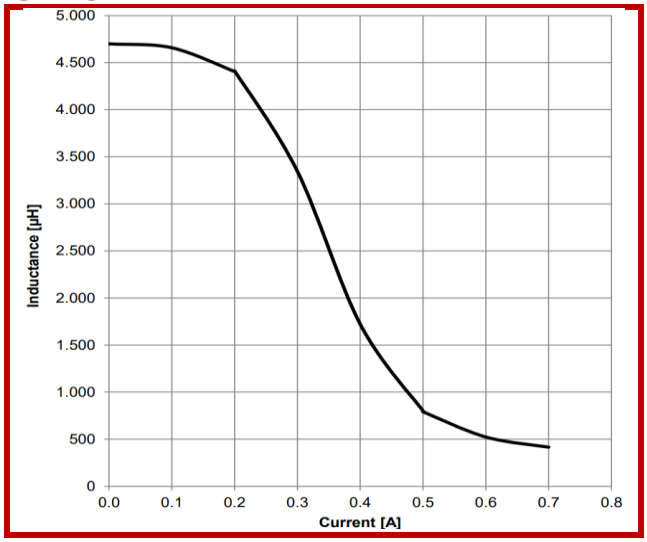
### SPI13-1111-331K



### SPI13-1111-471K



### SPI13-1111-102K


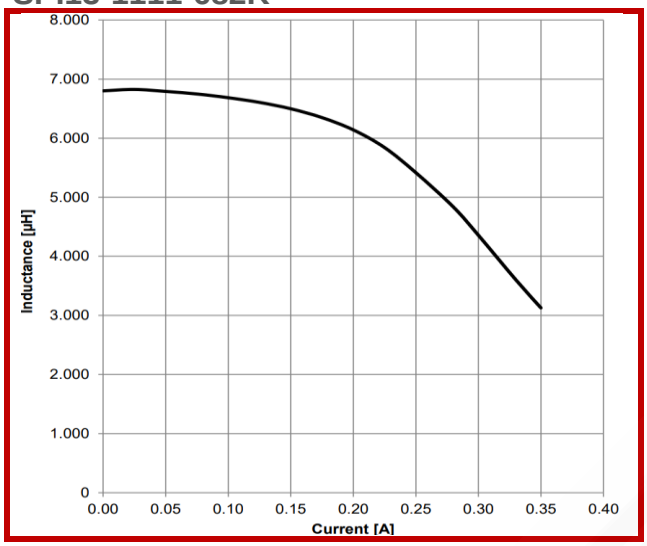

### SPI13-1111-222K



### SPI13-1111-332K


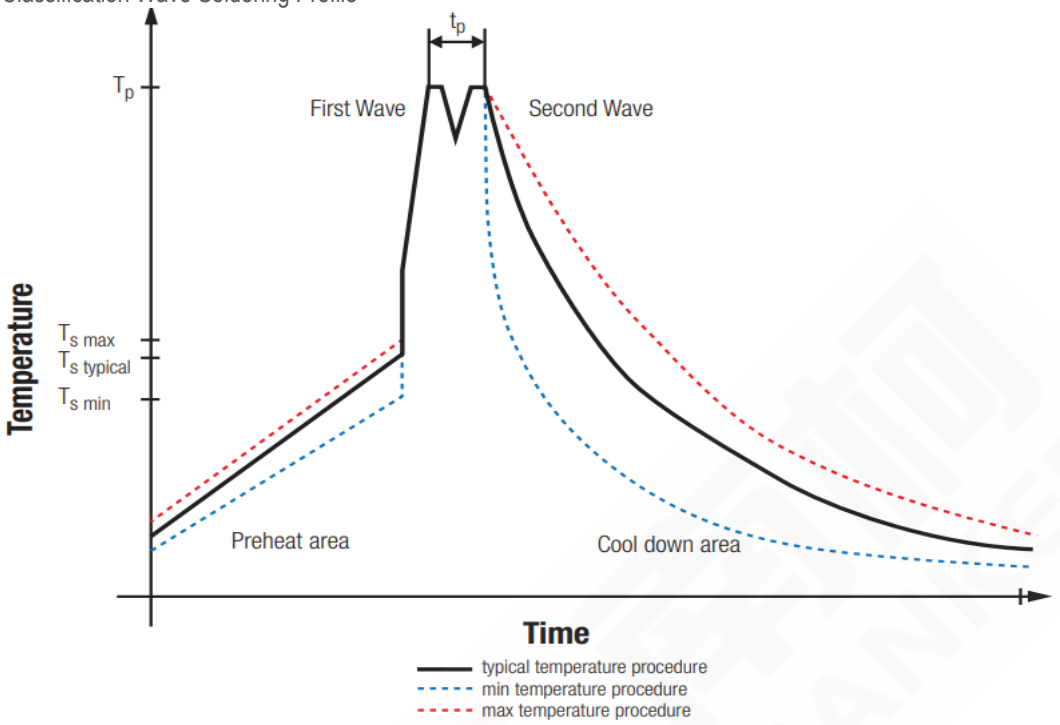

### SPI13-1111-472K


## 典型电感与电流特性
Typical Inductance vs. Current Characteristics

**SPI13-1111-682K**



## 波峰焊线图
Classification Wave Soldering Profile




## 封装体峰值温度(Tp)分类
Classification Reflow Soldering Profile:

| Profile Feature | | Pb-Free Assembly | Sn-Pb Assembly |
|---|---|---|---|
| Preheat Temperature Min | $T_{s\ min}$ | 100°C | 100°C |
| Preheat Temperature Typical | $T_{s\ typical}$ | 120°C | 120°C |
| Preheat Temperature Max | $T_{s\ max}$ | 130°C | 130°C |
| Preheat Time $t_s$ from $T_{s\ min}$ to $T_{s\ max}$ | $t_s$ | 70 seconds | 70 seconds |
| Ramp-up Rate | Δ T | 150°C max | 150°C max |
| Peak Temperature | $T_p$ | 250°C ~ 260°C | 235°C ~ 260°C |
| Time of actual peak temperature | $t_p$ | max. 10 seconds<br>max. 5 seconds each wave | max. 10 seconds<br>max. 5 seconds each wave |
| Ramp-down Rate, Min | | ~ 2K/seconds | ~ 2K/seconds |
| Ramp-down Rate, Typical | | ~3.5K/seconds | ~3.5K/seconds |
| Ramp-down Rate, Max | | 5K/seconds | 5K/seconds |
| Time 25°C to 25°C | | 4 minutes | 4 minutes |

* 波峰焊参照标准EN61760-1:2006。
Wave Soldering is refer to standard EN61760-1:2006