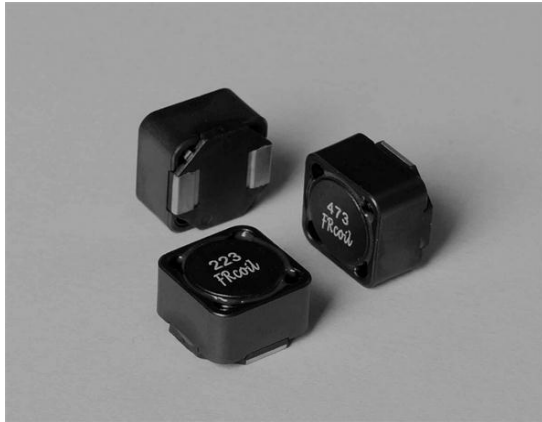


SMT Power Inductors - PS1278



- 12.3 × 12.3 mm footprint; 8 mm high shielded inductors
- Low DCR and excellent current handling

Core material Ferrite

Core and winding loss See www.FRcoil.com

Terminations RoHS compliant matte tin over nickel over phosphor bronze. Other terminations available at additional cost.

Weight: 3.8 – 4.6 g

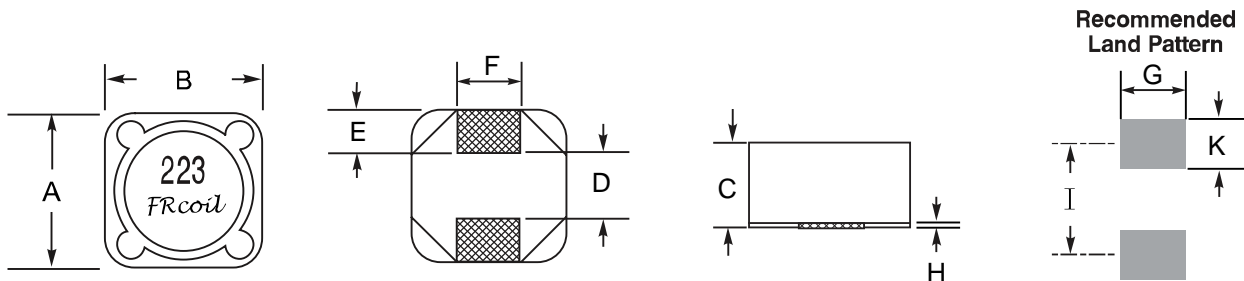
Ambient temperature –40°C to +85°C with I rms current, +85°C to +125°C with derated current

Storage temperature Component: –40°C to +125°C.

Packaging: –40°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

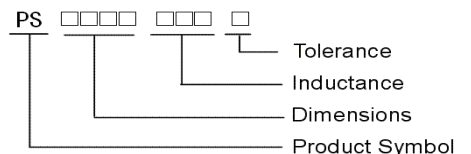
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)



A	B	C	D	E	F	G	H	I	K
12±0.3	12±0.3	8.05	5.7	3.0	5.0	5.5	0.635	8.5	4.0

Part number ¹	Inductance ² (μH)	DCR ³ (mOhms)		SRF typ ⁴ (MHz)	Isat (A) ⁵			I rms (A) ⁶	
		typ	max		10% drop	20% drop	30% drop	20°C rise	40°C rise
PS1278-142M	1.4 ±20%	8.8	9.8	80.0	25.2	28.6	30.6	7.00	10.00
PS1278-472M	4.7 ±20%	13.9	15.5	30.0	13.7	15.2	15.9	4.30	6.20
PS1278-562M	5.6 ±20%	15.7	17.5	24.0	12.2	13.7	14.6	4.30	6.20
PS1278-682M	6.8 ±20%	19.1	21.3	21.0	11.3	12.7	13.7	4.20	6.00
PS1278-822M	8.2 ±20%	20.3	22.6	20.0	10.1	11.5	12.3	4.10	5.90
PS1278-103M	10 ±20%	21.8	24.3	17.0	9.36	10.6	11.2	4.00	5.70
PS1278-123M	12 ±20%	23.2	25.8	15.0	8.84	10.0	10.7	3.70	5.20
PS1278-153M	15 ±20%	27.9	31.0	13.0	7.30	8.36	9.00	3.50	4.90
PS1278-183M	18 ±20%	30.8	34.3	12.0	6.10	7.10	7.74	3.00	4.50
PS1278-223M	22 ±20%	35.5	39.5	11.0	6.04	6.78	7.24	2.90	4.00
PS1278-273M	27 ±20%	45.0	50.0	10.0	5.80	6.56	7.02	2.60	3.60
PS1278-333M	33 ±20%	61.9	68.8	9.5	5.22	5.90	6.30	2.30	3.10
PS1278-393M	39 ±20%	69.1	76.8	8.5	4.68	5.42	5.80	2.10	3.00
PS1278-473M	47 ±20%	72.3	80.4	7.5	4.40	5.02	5.32	2.00	2.90
PS1278-563M	56 ±20%	80.2	89.2	7.0	4.02	4.60	4.90	1.90	2.70
PS1278-683M	68 ±20%	91.3	101.5	6.5	3.40	3.86	4.26	1.80	2.60
PS1278-823M	82 ±20%	125.9	139.9	5.0	3.12	3.58	3.80	1.60	2.30
PS1278-104M	100 ±20%	135.1	150.2	4.5	2.88	3.28	3.52	1.50	2.20
PS1278-124K	120 ±10%	182.3	202.6	4.3	2.62	3.00	3.24	1.40	1.90
PS1278-154K	150 ±10%	216.5	240.6	4.1	2.48	2.86	3.02	1.30	1.80
PS1278-184K	180 ±10%	229.0	254.5	4.0	2.26	2.58	2.74	1.20	1.70
PS1278-224K	220 ±10%	323.6	359.6	3.4	1.96	2.22	2.36	1.00	1.60
PS1278-274K	270 ±10%	415.6	461.8	3.1	1.74	2.04	2.18	0.90	1.20
PS1278-334K	330 ±10%	487.3	541.5	2.9	1.66	1.86	2.00	0.80	1.00
PS1278-394K	390 ±10%	533.6	592.9	2.7	1.52	1.72	1.88	0.75	1.00
PS1278-474K	470 ±10%	707.5	786.2	2.2	1.34	1.54	1.64	0.66	0.90
PS1278-564K	560 ±10%	777.4	863.8	2.0	1.24	1.42	1.50	0.60	0.80
PS1278-684K	680 ±10%	1045	1162	1.7	1.16	1.28	1.38	0.55	0.75
PS1278-824K	820 ±10%	1166	1296	1.4	1.04	1.16	1.26	0.50	0.70
PS1278-105K	1000 ±10%	1334	1483	1.3	0.97	1.10	1.14	0.48	0.68

1. Product Identification

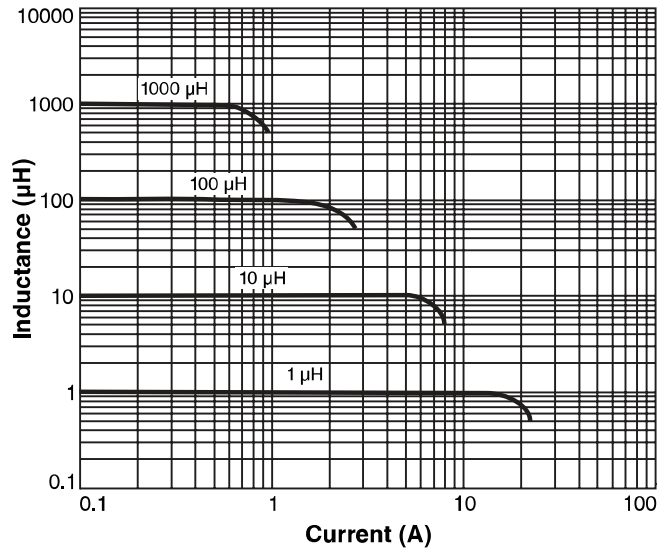


Tolerance: K=± 10% L=± 15% M=± 20% N=± 30%

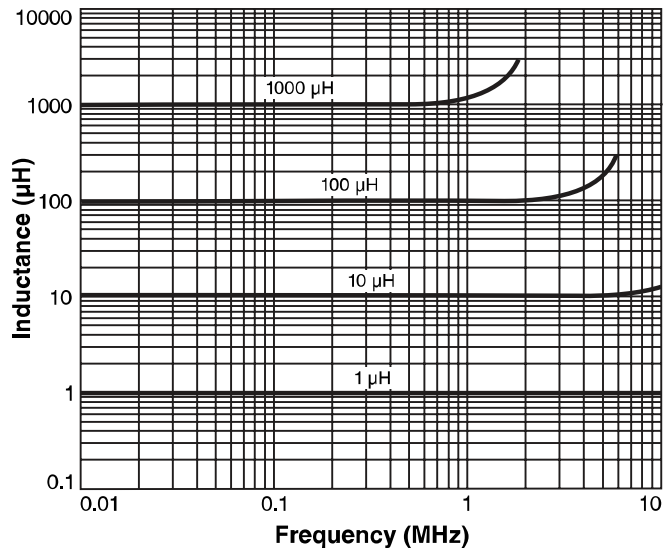
- Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
- DCR measured on a micro-ohmmeter and a FRcoil FRE838 test fixture.
- SRF measured using an Agilent/HP 4191A or equivalent.
- DC current at which the inductance drops the specified amount from its value without current.
- Current that causes the specified temperature rise from 25°C ambient.

SMT Power Inductors - PS1278

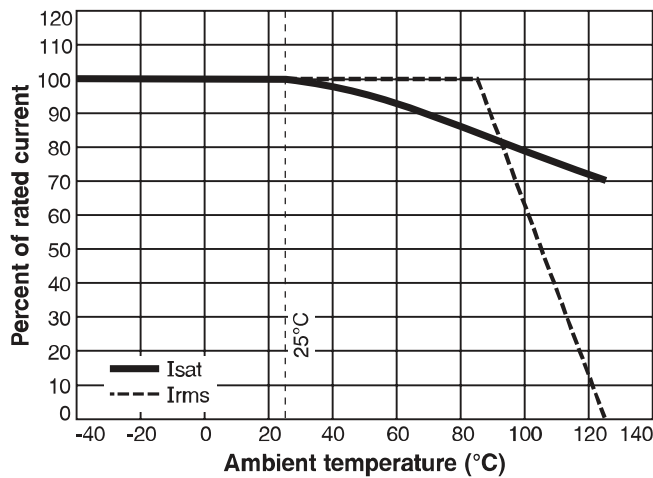
Typical L vs Current



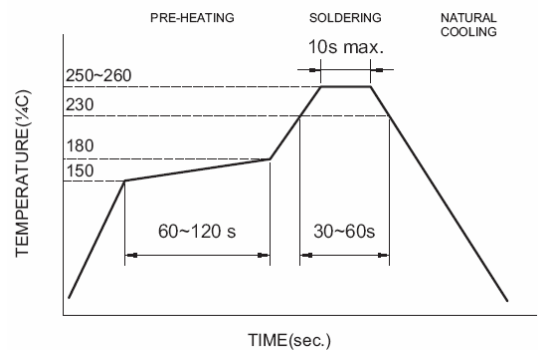
Typical L vs Frequency



Typical Current Derating



Recommended Reflow Soldering Conditions (For Lead Free)

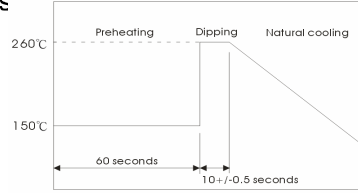
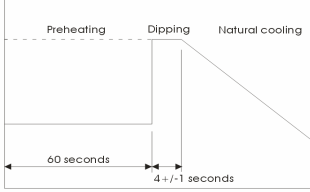


SMT Power Inductors - PS1278

電氣特性

TYPICAL ELECTRICAL CHARACTERISTICS

Reliability and Test Conditions (可靠性測試條件)

ITEM	Performance	Test Condition
Operating Temperature 操作溫度	-55~+125℃	10Pcs Passed
Storage temperature 儲存溫度	-40~+85℃	10Pcs Passed
Rated Current 額定電流	Refer to standard electrical characteristics list. 參考標準特性規格表	10Pcs Passed
Temperature Rise Test 溫升測試	40℃ max.(Δt) 40度最大	10Pcs Passed
Electrical Performance Test		
Solder Heat Resistance 耐焊錫熱	Appearance: No significant abnormality. Inductance change: Within $\pm 20\%$. 外觀: 無顯著異常 電感值: 變異值在初始值20%之內	Preheat: 150℃, 60sec. Solder: H63A Solder temperature: 260 ± 5 ℃ Flux for lead free: rosin Dip time: 10 ± 0.5 sec. 預熱: 150℃, 60sec. 錫爐溫度: 260 ± 5 ℃ 時間: 10 ± 0.5 sec. 助焊劑: rosin 
Solderability Test 端面焊錫性	More than 90% of the terminal electrode should be covered with solder. 端電極之錫覆蓋面達90%以上	Preheat: 125 ± 25 ℃, 60sec. Solder: H63A Solder temperature: 230 ± 5 ℃ Flux for lead free: rosin Dip time: 4 ± 1 sec. 預熱: 125 ± 25 ℃, 60sec. 錫爐溫度: 230 ± 5 ℃ 時間: 4 ± 1 sec. 助焊劑: rosin 
High Temperature Resistance Test 高溫放置測試	Appearance: no damage. Inductance: within $\pm 20\%$ of initial value. No disconnection or short circuit. 外觀不能破損 電感值: 變異值在初始值20%之內 電性無短路或斷線	Temperature: 85 ± 2 ℃. Applied current: rated current. Duration: 500 hrs.
Humidity Resistance Test 高濕放置測試	Appearance: no damage. Inductance: within $\pm 20\%$ of initial value. No disconnection or short circuit. 外觀不能破損 電感值: 變異值在初始值20%之內 電性無短路或斷線	Temperature: 40 ± 2 ℃. Applied current: rated current. Duration: 500 hrs. Humidity: 90~95%

SMT Power Inductors - PS1278

電氣特性

TYPICAL ELECTRICAL CHARACTERISTICS

Reliability and Test Conditions (可靠性測試條件)

ITEM	Performance	Test Condition															
Thermal shock 熱衝擊試驗	Appearance: no damage. Inductance: within $\pm 20\%$ of initial value. No disconnection or short circuit. 外觀不能破損 電感值：變異值在初始值20%之內。 電性無短路或斷線	Condition for 1 cycle Step1:-25 $\pm 2^{\circ}\text{C}$, 30 ± 3 min. Step2:Room temperature within 15 min. Step3:+85 $\pm 5^{\circ}\text{C}$, 30 ± 3 min. Step4: Room temperature within 15 min. Number of cycles: 50 <table border="1"> <thead> <tr> <th>Phase</th><th>Temperature($^{\circ}\text{C}$)</th><th>Time(min)</th></tr> </thead> <tbody> <tr> <td>1</td><td>-25$\pm 2^{\circ}\text{C}$</td><td>30± 3</td></tr> <tr> <td>2</td><td>Room Temp.</td><td>15</td></tr> <tr> <td>3</td><td>+85$\pm 2^{\circ}\text{C}$</td><td>30± 3</td></tr> <tr> <td>4</td><td>Room Temp.</td><td>15</td></tr> </tbody> </table>	Phase	Temperature($^{\circ}\text{C}$)	Time(min)	1	-25 $\pm 2^{\circ}\text{C}$	30 ± 3	2	Room Temp.	15	3	+85 $\pm 2^{\circ}\text{C}$	30 ± 3	4	Room Temp.	15
Phase	Temperature($^{\circ}\text{C}$)	Time(min)															
1	-25 $\pm 2^{\circ}\text{C}$	30 ± 3															
2	Room Temp.	15															
3	+85 $\pm 2^{\circ}\text{C}$	30 ± 3															
4	Room Temp.	15															
Humidity Resistance 高濕測試	Appearance: no damage. Inductance: within $\pm 20\%$ of initial value. No disconnection or short circuit. 外觀不能破損 電感值：變異值在初始值20%之內。 電性無短路或斷線	Humidity:90~95%RH. Temperature:40 $\pm 5^{\circ}\text{C}$. Applied current:rated current. Duration:500 ± 12 hrs. Measured at room temperature after placing for 2 to 3hrs. 濕度:90~95%RH. 溫度:40 $\pm 5^{\circ}\text{C}$. 須加電流:額定電流. 放置時間:500 ± 12 hrs.															

卷盤包裝

REEL PACKAGING

Taping for automatic insertion of SMT coils.

Surface mount devices/adjustable & fixed

This ever expanding assortment of product and unsurpassed quality control,not only give you a component that functionally performs,but just as importantly,allows the use of a variety of placement and soldering equipment necessary for the FLEXIBLE MANUFACTURING PLANT required in today's competitive world.

Various packaging schemes are available.In addition to bulk,tape and reel and magazine,methods are offered for high volume insertion equipment.The following chart lists the packaging details for FRE's SMD coils

自動插入編帶的表面貼裝線圈

表面貼裝設備/可調整型和固定型

它可以擴展到產品分類和非常突出的質量控制。不只是給你一各構成方面的優良的性能表現，而且最重要的，允許在當今這個競爭世界中要求的靈活製造廠使用多樣化的放置和焊接設備。

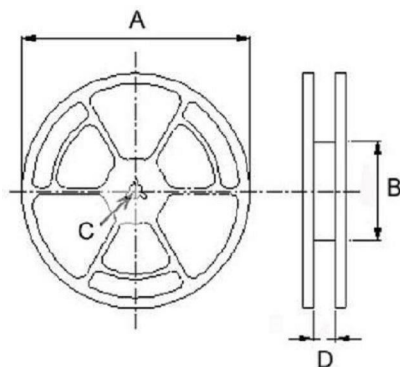
可以使用多樣的包裝方案。提供批量散裝和卷盤包裝共大量入設備使用。以下圖表為富爾的SMD線圈羅列包裝 細節：

SMT Power Inductors - PS1278

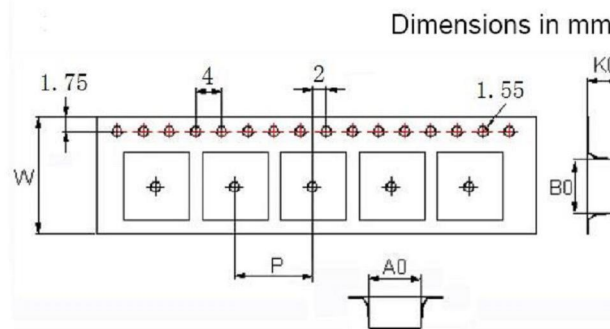
卷盤包裝

REEL PACKAGING

Tape and reel dimensions



編帶和卷盤尺寸



Notes:

- (1) There are at least 10 blank spaces(80mm each) at both ends of the tape which do not include the coils.
- (2) The protective tape should not cover the holes nor be shifted to the sides. Further the tape should not be removed during transportation.
- (3) The coils are positioned with the bonding surface facing bottom of the pocket.

注意

- (1) 在沒有包括線圈的編帶的每個末端至少有10個空間(每個80毫米)。
- (2) 保護袋不能覆蓋洞口或者移動到側面。而且，運輸過程中，帶子不能移動
- (3) 線圈設置在焊接表面對著袋子底部

表面貼裝型,卷盤/編帶列表 SURFACE MOUNTING TYPE, REEL/TAPE LIST

TYPE	Pcs/Reel	Tape and Reel Dimension (mm)								
		A	B	C	D	A0	B0	K0	W	P
PS1278	350	330	100	13	24.4	12.6	12.6	8.7	24	16

注意事項

PRECAUTIONS

1. During storage, the products must be kept in an environment away from excessive high temperatures, high humidity, dust and noxious gases which may affect solderability.
2. Terminals should not be handled with fingers. This is to prevent deterioration in solderability.
3. Products should not be dropped on the floor. This is to prevent damage to the products.

1. 在儲存階段,產品必須保持遠離過熱的溫度,過高的濕度灰塵和有害氣體等可能影響可焊性效果的環境。
2. 接線端不能用手指直接處理。這是為了防止降低可焊性
3. 產品不能掉在地板上。這是為了防止損壞鐵氧體芯