SMD shielded Power Inductors / HSPI TYPE

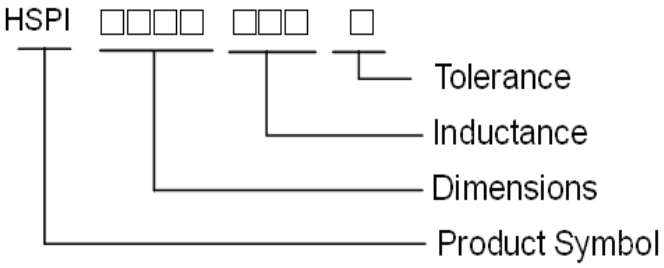
.Features:

1.Low profile very effective in space-conscious applications.(高度扁薄，適用於有空間顧慮的應用。)
2.Low resistance and high energy storage.(低電阻及高能量儲存。)

.Applications:

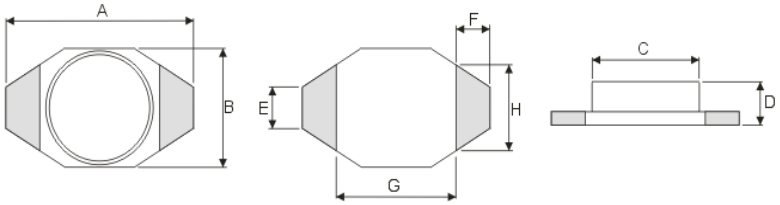
Notebook computers, Step-up and step-down Converters, Flash, Memory programmers, etc.

.Product Identification：

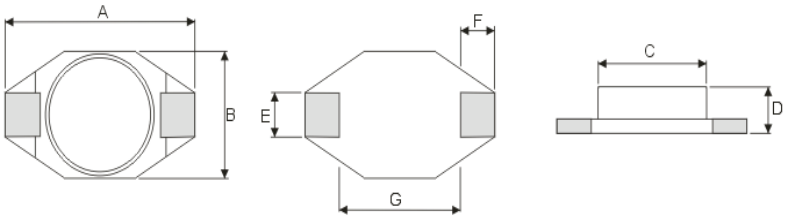


.Shape and Dimension

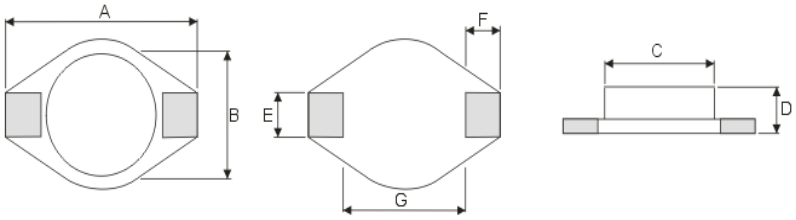
（1）HSPI1608



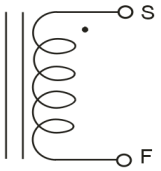
（2）HSPI3316



（3）HSPI5022



.Schematic

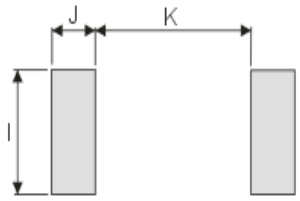


Dimensions in mm

TYPE	A(max)	B(max)	C±0.3	D(max)	E±0.3	F±0.3	G±0.3	H±0.3
HSPI1608	6.60	4.45	4.00	2.92	1.27	1.02	4.32	2.50
HSPI3316	12.95	9.40	8.38	5.21	2.54	2.54	7.62	—
HSPI5022	18.54	15.24	12.70	7.62	2.54	2.54	12.70	—

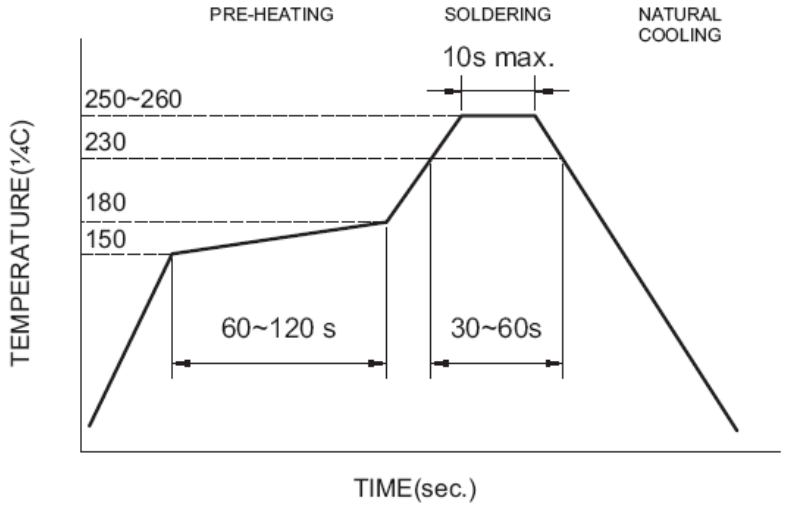
SMD shielded Power Inductors / HSPI TYPE

.Land Patterns for Reflow Soldering



TYPE	I(mm)	J(mm)	K(mm)
HSPI1608	3.56	1.40	4.06
HSPI3316	2.79	2.92	7.37
HSPI5022	2.79	2.92	12.45

.Recommended Reflow Soldering Conditions (For Lead Free)



SMD shielded Power Inductors / HSPI TYPE

. Electrical Characteristics（HSPI1608 TYPE）

Part No.	INDUCTANCE （μH）	Tolerance (±%)	Q Min	Rated Current （A） Max	DCR (Ω) Max	Test Condition
HSPI1608-1R0☐	1	20	30	3	0.04	100 KHz
HSPI1608-1R5☐	1.5	20	30	2.8	0.045	100 KHz
HSPI1608-2R2☐	2.2	20	40	1.8	0.05	100 KHz
HSPI1608-3R3☐	3.3	20	40	1.6	0.055	100 KHz
HSPI1608-4R7☐	4.7	20	40	1.4	0.06	100 KHz
HSPI1608-6R8☐	6.8	20	40	1.2	0.065	100 KHz
HSPI1608-100☐	10	20	40	1	0.075	100 KHz
HSPI1608-150☐	15	20	40	0.8	0.09	100 KHz
HSPI1608-220☐	22	20	40	0.7	0.11	100 KHz
HSPI1608-330☐	33	20	40	0.6	0.19	100 KHz
HSPI1608-470☐	47	20	40	0.5	0.23	100 KHz
HSPI1608-680☐	68	20	40	0.4	0.29	100 KHz
HSPI1608-101☐	100	20	40	0.3	0.48	100 KHz
HSPI1608-151☐	150	20	40	0.26	0.59	100 KHz
HSPI1608-221☐	220	20	40	0.22	0.77	100 KHz
HSPI1608-331☐	330	20	40	0.2	1.4	100 KHz
HSPI1608-471☐	470	20	40	0.19	1.8	100 KHz
HSPI1608-681☐	680	20	40	0.18	2.2	100 KHz
HSPI1608-102☐	1000	20	40	0.15	3.4	100 KHz
HSPI1608-152☐	1500	20	50	0.12	4.2	100 KHz
HSPI1608-222☐	2200	20	50	0.1	8.5	100 KHz
HSPI1608-332☐	3300	20	50	0.08	11	100 KHz
HSPI1608-472☐	4700	20	50	0.06	13.9	100 KHz
HSPI1608-682☐	6800	20	50	0.04	25	100 KHz
HSPI1608-103☐	10000	20	50	0.02	32.8	100 KHz

Electrical Characteristics（HSPI3316 TYPE）

Part No.	INDUCTANCE （μH）	Tolerance (±%)	SRF Typ. （MHz） Min	Rated Current （A） Max	DCR (Ω) Max	Test Condition
HSPI3316-1R0☐	1	20	140	5	0.021	100 KHz
HSPI3316-1R5☐	1.5	20	120	4.5	0.022	100 KHz
HSPI3316-2R2☐	2.2	20	80	3.8	0.032	100 KHz
HSPI3316-3R3☐	3.3	20	70	3.3	0.039	100 KHz
HSPI3316-4R7☐	4.7	20	40	2.7	0.054	100 KHz
HSPI3316-6R8☐	6.8	20	38	2.2	0.075	100 KHz
HSPI3316-100☐	10	20	35	2	0.101	100 KHz
HSPI3316-150☐	15	20	25	1.5	0.15	100 KHz
HSPI3316-220☐	22	20	19	1.3	0.207	100 KHz
HSPI3316-330☐	33	20	15	1.1	0.334	100 KHz

SMD shielded Power Inductors / HSPI TYPE

Electrical Characteristics（HSPI3316 TYPE）

Part No.	INDUCTANCE （μH）	Tolerance (±%)	SRF Typ. （MHz） Min	Rated Current （A） Max	DCR (Ω) Max	Test Condition
HSPI3316-470☐	47	20	13	0.8	0.472	100 KHz
HSPI3316-680☐	68	20	10	0.7	0.66	100 KHz
HSPI3316-101☐	100	20	7	0.6	1.11	100 KHz
HSPI3316-151☐	150	20	6	0.5	1.55	100 KHz
HSPI3316-221☐	220	20	5	0.4	2	100 KHz
HSPI3316-102☐	1000	20	2	0.2	8.3	100 KHz

Electrical Characteristics（HSPI5022 TYPE）

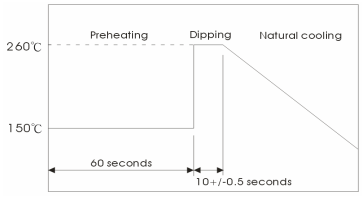
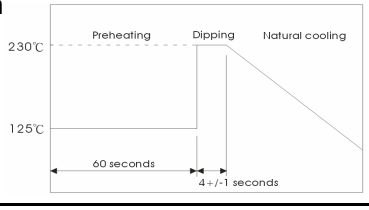
Part No.	INDUCTANCE （μH）	Tolerance (±%)	SRF Typ. （MHz） Min	Rated Current （A） Max	DCR (Ω) Max	Test Condition
HSPI5022-100☐	10	20	30	3.9	0.04	100 KHz
HSPI5022-150☐	15	20	20	3.4	0.048	100 KHz
HSPI5022-220☐	22	20	18	3.1	0.059	100 KHz
HSPI5022-330☐	33	20	14	2.8	0.075	100 KHz
HSPI5022-470☐	47	20	10	2.4	0.097	100 KHz
HSPI5022-680☐	68	20	9	2	0.138	100 KHz
HSPI5022-101☐	100	20	7	1.7	0.207	100 KHz
HSPI5022-151☐	150	20	6	1.3	0.293	100 KHz
HSPI5022-221☐	220	20	5	1.1	0.47	100 KHz
HSPI5022-331☐	330	20	4	0.86	0.78	100 KHz
HSPI5022-471☐	470	20	3	0.73	1.08	100 KHz
HSPI5022-681☐	680	20	2.5	0.64	1.4	100 KHz
HSPI5022-102☐	1000	20	2	0.53	2.01	100 KHz

NOTE:

1. Inductance tested at 100 kHz, 0.1 Vrms.
2. Operating temperature range -40°C to +85°C.
3. Electrical specifications at 25°C.
4. ☐Tolerance：K=10％；M=20％；N=30％

SMD shielded Power Inductors / HSPI TYPE

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

ITEM	Performance	Test Condition
Operating Temperature 操作溫度	-40~+85℃	
Storage temperature 儲存溫度	-40~+85℃	
Rated Current 額定電流	Refer to standard electrical characteristics list. 參考標準特性規格表	
Temperature Rise Test 溫昇測試	40℃ max.(△t) 40度最大	
Electrical Performance Test		
Solder Heat Resistance 耐焊錫熱	Appearance:No significant abnormality. Inductance change:Within ± 20%. 外觀:無顯著異常. 電感值:變異性在初始值20%內	Preheat:150℃,60sec. Solder: H63A Solder temperature:260±5℃ Flux for lead free: rosin Dip time:10±0.5sec. 預熱:150℃,60sec. 錫爐溫度: 260±5℃ 時間: 10±0.5sec. 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±1sec. 預熱:125±25℃,60sec. 錫爐溫度: 230±5℃ 時間:4±1sec. 助焊劑:rosin 
High Temperature Resistance Test 高溫放置測試	Appearance: no damage. Inductance: within±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%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±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%內. 電性無短路或斷線	Temperature:40±2℃. Applied current: rated current. Duration: 500 hrs. Humidity: 90~95%

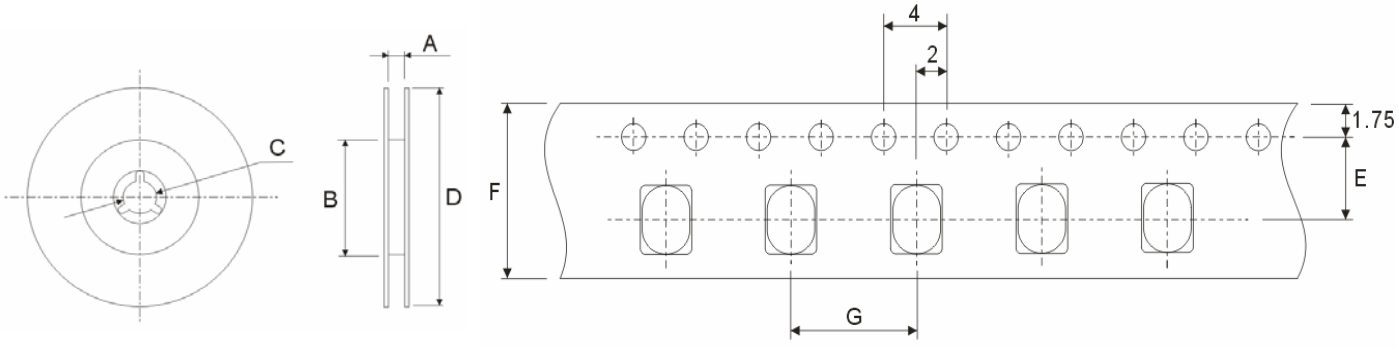
SMD shielded Power Inductors / HSPI TYPE

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

<table>
<tr><th>ITEM</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Thermal shock
熱衝擊試驗</td><td>Appearance: no damage.
Inductance: within±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%內.
電性無短路或斷線</td><td>Condition for 1 cycle
Step1:-25±2℃，30±3 min.
Step2:Room temperature within 15 min.
Step3:+85±5℃，30±3 min.
Step4: Room temperature within 15 min.
Number of cycles: 50
<table>
<tr><th>Phase</th><th>Temperature(℃)</th><th>Time(min)</th></tr>
<tr><td>1</td><td>-25±2℃</td><td>30±3</td></tr>
<tr><td>2</td><td>Room Temp.</td><td>15</td></tr>
<tr><td>3</td><td>+85±2℃</td><td>30±3</td></tr>
<tr><td>4</td><td>Room Temp.</td><td>15</td></tr>
</table>
</td></tr>
</table>

SMD shielded Power Inductors / HSPI TYPE

.Packing Specifications



TYPE	Packaging Quantity			Tape and Reel Dimension						
	Pcs / Reel	Inner box	Carton	A	B	C	D	E	F	G
HSPI1608	2000	8000	16000	16.5	100	13±0.2	330	7.5	16	8
HSPI3316	700	2100	4200	24.5	100	13±0.2	330	11.5	24	12
HSPI5022	250	500	1000	32.5	100	13±0.2	330	15.5	32	20