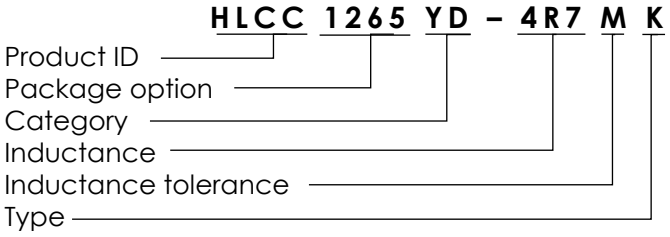
■ Description

- Halogen Free
- 14.0x12.8x6.5mm maximum surface mount package
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- RoHS compliant

■ Ordering Information



■ Electrical Characteristics

Part Number	Inductance (uH) ± 20%	I rms (A)	I sat (A)	DCR (mΩ)	
		Typ	Typ	Typ	Max
HLCC1265YD-4R7MK	4.70	13.5	28.0	7.00	8.40

Note.

1、Test frequency ，Ls： 100KHz /1.0V。

2、All test data referenced to 25℃ ambient。

3、Testing Instrument(or equ) : Agilent 4284A，E4991A，4339B，KEYSIGHT E4980A/AL，chroma3302，3250，16502。

4、Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40℃。

5、Saturation Current (Isat) will cause L0 to drop approximately 30%。

6、The part temperature (ambient + temp rise) should not exceed 125℃under worst case operating conditions，Circuit design、component、PCB trace size andthickness、airflow and other cooling provisions all affect the part temperature， Part temperature should be verified in the end application。

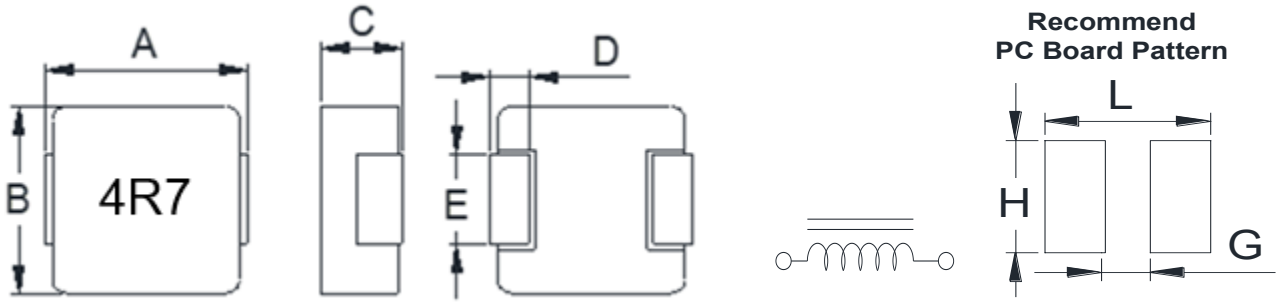
7、Irms Testing : Temperature rise is highly dependent on many factors including pcb land pattern、 trace size、and proximity to other components， Therefore temperature rise should be verified in application conditions。

8、Rated DC Current : The less value whith is Irms or Isat。

9、Operating temperature range: -40˚C to +125˚C（Including self - temperature rise）。

10、Storage temperature range: -40˚C to +125˚C（on board）。

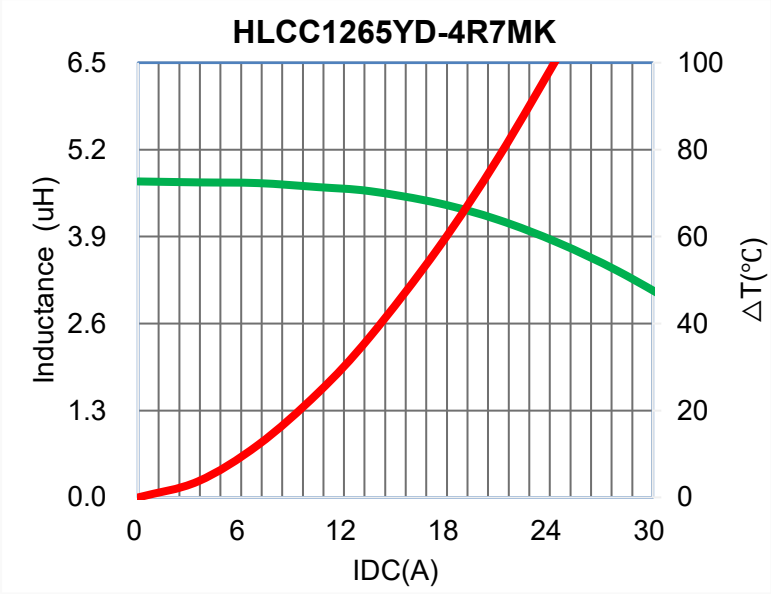
■ Dimensions



Series	A	B	C	D	E	L	G	H
HLCC1265YD	13.5±0.5	12.5±0.3	6.20±0.3	2.30±0.3	4.70±0.3	14.2 Ref	8.0 Ref	5.0 Ref

■ Current curve

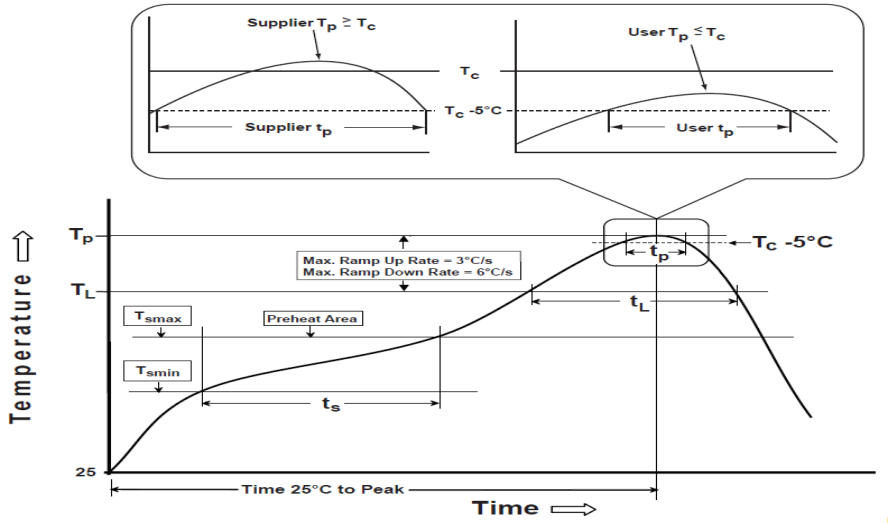
Performance Graphs	
Test Instruments	Test Condition
LCR Meter：Agilent 4284A or Chroma3302, 3250, 16502 or EQU DC Current：Chroma1320+1320S+3250 or EQU	Temperature: 26 ± 3℃ Humidity: < 70% RH Frequency: 100 KHz, 1.0V



■ Soldering Specifications

1、Please keep temperature about 350℃ while hand soldering，and 1 times max。

2、Soldering Reflow（Reflow times: 3 times max）



Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat -Temperature Min(T_{smin}) -Temperature Max(T_{smax}) -Time(t_s)from(T_{smin} to T_{smax})	150℃ 200℃ 60-120seconds
Ramp-up rate($T_L$to T_p)	3℃/second max.
Liquidus temperature(T_L) Time(t_L)maintained above T_L	217℃ 60-150 seconds
Classification temperature(T_c)	See Table (1.2)
Time(t_p) at Tc- 5℃ (Tp should be equal to or less than Tc.)	* > 30 seconds
Ramp-down rate(T_p to T_L)	6℃ / second max.
Time 25℃ to peak temperature	8 minutes max.

Tp: maximum peak package body temperature, **Tc**: the classification temperature。
For user (customer) **Tp** should be equal to or less than **Tc**。
* Tolerance for peak profile temperature (**Tp**) is defined as a supplier minimum and a user maximum。

Package Thickness/Volume and Classification Temperature (Tc)

	Package Thickness	Volume mm3 <350	Volume mm3 350-2000	Volume mm3 >2000
PB-Free Assembly	<1.6mm	260℃	260℃	260℃
	1.6-2.5mm	260℃	250℃	245℃
	≥2.5mm	250℃	245℃	245℃

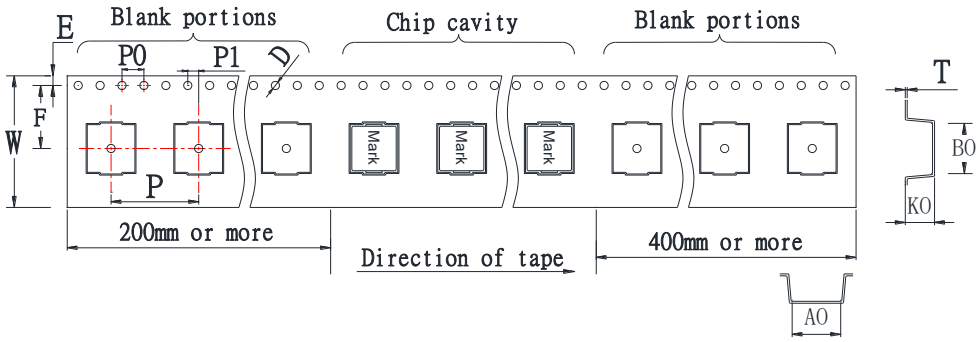
Reflow is referred to standard IPC/JEDEC J-STD-020E。

■ Reliability and Test

Reliability Test Referred to standard：MIL-STD-202G

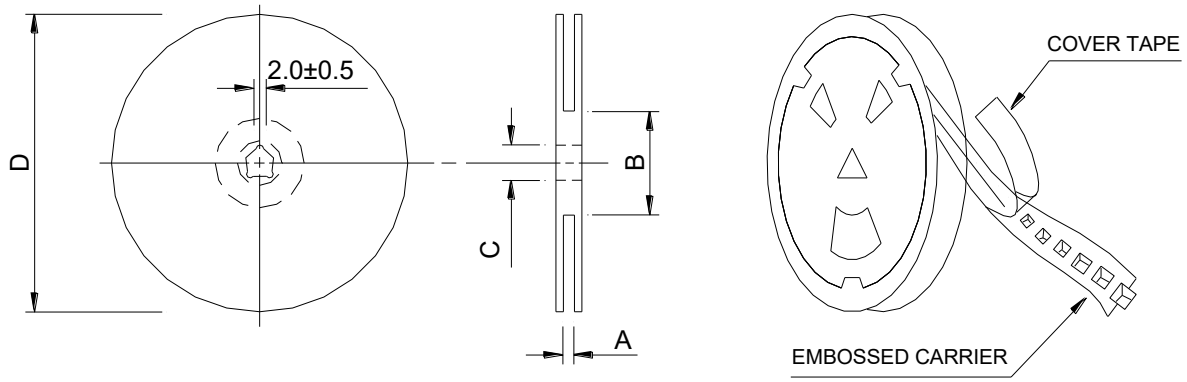
NO.	ITEM	Performance	Test Condition
1	Life Test	1、Appearance：No damage 2、Inductance：within± 10% of initial value 3、Q：Shall not exceed the specification value 4、DCR：within ±15% of initial value and shall not exceed the specification value 5、More than 95% of the terminal electrode should be covered with solder	1、Temperature：125±2℃(Inductor)。 2、Applied current：rated current。 3、Duration：1000±12hrs，Referred to standard：MIL-PRF-27 4、Measured at room temperature after placing for 24±2 hrs。
2	Thermal shock		1、Referred to standard：JESD22 Method JA-104。 2、Condition for 1 cycle。 3、Step1：-40±2℃，30±5min，Step2：25±2℃，≦0.5min 4、Step3：125±2℃，30±5min，Number of cycles：500 5、Measured at room temperature after placing for 24±2 hrs。
3	Biased Humidity		1、Humidity：85±2%R.H，Temperature：85℃±2℃ 2、Duration：1000±12hrs，Unpowered。 3、Referred to standard：MIL-STD-202 Method 103 4、Measured at room temperature after placing for 24±2 hrs。
4	Moisture Resistance		1、Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs。 2、Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours，cool down to 25℃ in 2.5hrs。 3、Raise temperature to 65±2℃ 90-100%RH in 2.5hrs，and keep 3 hours，cool down to 25℃ in 2.5hrs，keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs。 4、Keep at 25℃ 80-100%RH for 15min and vibrate at the。frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs。 5、Referred to standard：MIL-STD-202 Method 106。
5	High Temperature Exposure (Storage)		at rated operating temperature，part can be stored for 1000 hrs，Unpowered，Referred to standard：MIL-STD-202 Method 108 Measurement at 24±4 hours after test conclusion。
6	Resistance to Soldering Heat		1、Temperature：260 ±5°C (solder temp) 2、Time：10 ±1s，Temperature ramp/immersion and emersion rate：25mm/s ±6 mm/s 3、Number of heat cycles：1 4、Referred to standard：MIL-STD-202 Method 210F。
7	Terminal Strength		IPC/JEDEC J-STD-020E Classification Reflow Profiles With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg，≤0805:0.5kg)to the side of a device being tested，This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested，Referred to standard：MIL-STD-202 Method 211A。
8	Vibration test		1、Oscillation Frequency: 10 ~ 2K ~ 10Hz for 20 minutes 2、Total Amplitude: 10g，1.52mm±10% 3、Test Time:12hrs(20 min, 12 cycles each of 3 orientations) 4、Referred to standard：MIL-STD-202 Method 204D。
9	Solder ability		1、Steam aging:8±0.5hr/93±3℃，Drying:100℃/60min max, 2、Solder: Sn96.5% Ag3% Cu0.5%。 3、Temperature: 245±5℃，Dip time: 4±1sec。 4、Flux for lead free: #2 Rosin. 25±0.5% 。 5、Referred to standard：ANSI /J-STD-002C。

■ Tape Dimensions (unit: mm)



Series	Bo	Ao	Ko	P	W	D	E	F	P1	P0	T	Reel (PCS)
1265	14.8±0.1	13.0±0.1	7.0±0.1	16.0±0.1	24±0.3	1.5±0.1	1.75±0.1	11.5±0.1	2.0±0.1	4.0±0.1	0.50±0.05	500

■ Reel Dimensions (unit: mm)



Series	Type	A	B	C	D
1265	13”x24mm	24.4+2/-0	100±2	13+0.5/-0.2	330

Peel force of top cover tape