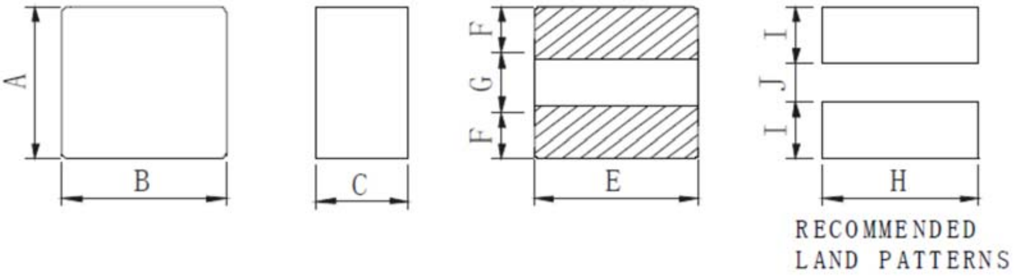
Featurs

- Metal material for large current and low loss.
- High performance (Isat) realized by metal dust core.
- Low loss realized with low Rdc.
- Closed magnetic circuit design reduces leakage flux.
- Vinyl thermal spray, better surface compactness.
- 100% lead (Pb) free meet RoHS standard.

CONFIGRLRATIONS & DIMENSIONS (unit in mm)

Recommend Land Pattern



Series	A	B	C	E	F	G	H	I	J
HIM201610	2.0±0.2	1.6±0.2	1.0MAX	1.6 Typ.	0.7 Typ.	0.6 Typ.	1.8 Typ.	0.85Typ.	0.5 Typ.

Part Number	Inductance (μH)	Tolerance	Test Freq.	Direct Current Resistance DCR(mΩ)Max	Saturation Current Isat (A)	Temperature Rise Current Irms (A)
HIM201610-R22M	0.22	±20%	1MHz	19	6.30	5.80
HIM201610-R24M	0.24	±20%	1MHz	19	6.30	5.80
HIM201610-R33M	0.33	±20%	1MHz	22	6.20	5.30
HIM201610-R47M	0.47	±20%	1MHz	25	6.00	5.60
HIM201610-R68M	0.68	±20%	1MHz	32	5.50	5.00
HIM201610-1R0M	1.00	±20%	1MHz	43	4.20	4.10
HIM201610-1R5M	1.50	±20%	1MHz	100	2.90	2.30
HIM201610-2R2M	2.20	±20%	1MHz	150	2.80	2.10
HIM201610-3R3M	3.30	±20%	1MHz	180	2.00	1.50
HIM201610-4R7M	4.70	±20%	1MHz	250	1.50	1.15

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 △T 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 and thickness,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. Absolute maximum voltage 25V DC Buck

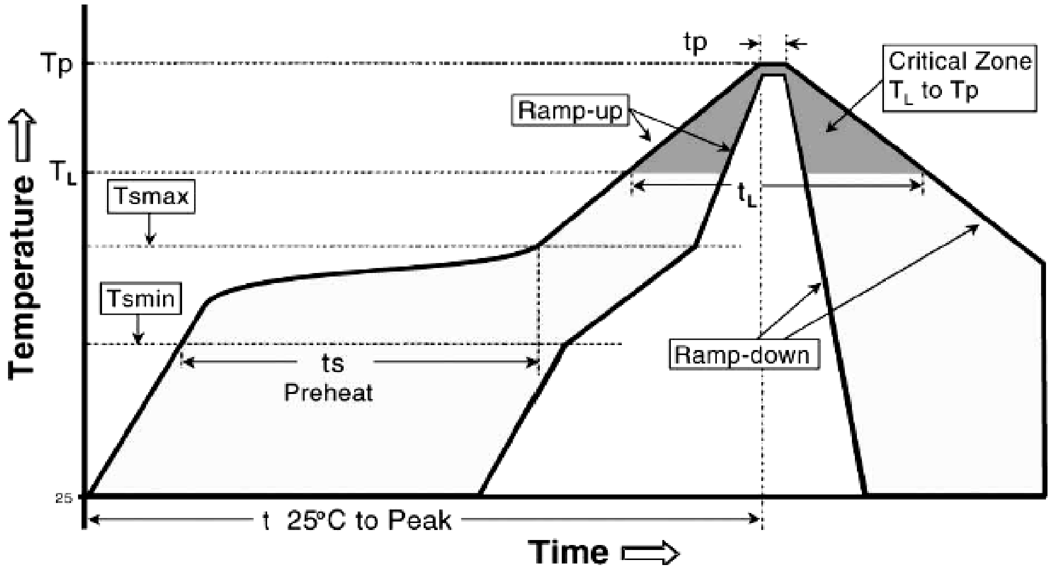
Reliability

Item	Requirements	Test Methods and Remarks
Insulation Resistance	≥100MΩ	100 VDC between inductor coil and The middle of the top surface of the body for 60 seconds.
Solderability	90% or more of electrode area shall be coated by new solde.	Dip pads in flux . Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free). Solder Temperature: 245±5℃. Immersion Time: (5±1) s.
Resistance to Soldering Heat	No visible mechanical damage. Inductance change: Within ±10%.	Dip pads in flux. Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free). Solder Temperature: 260±5℃. Immersion Time: 10±1sec.
Adhesion of teral electrode	Strong bond between the pad and the core, without come off PCB.	Inductors shall be subjected to (260±5)℃ for (20±5)s Soldering in the base whit 0.3mm solder. And then aplombelectrode way plus tax 10 N for (10±1) seconds.
High temperature	No case deformation or change in appearance. Inductance change: Within ±10%	Temperature: 125±2℃. Time : 1000 hours. Measurement at 24±4 hours after test conclusion.
Low temperature	No visible mechanical damage. Inductance change: Within ±10%	Temperature: -40±2℃. Time : 1000 hours. Measurement at 24±4 hours after test conclusion.
Thermal shock	No visible mechanical damage. Inductance change: Within ±10%	The test sample shall be placed at (-55±3) ℃ and (125±3)℃ for (30±3) , different temperature conversion time is 2~3 utes. The temperature cycle shall be repeated 32 cycles. Placed at room temperature for 2 hours, within 48±4 hours of testing.
Temperature characteristic	Inductance change Pc-b,Pc-d: Within ±10%	a: +20 ℃ （30~45） → b: -40 ℃ （30~45） → c: +20 ℃ （30~45） → d: +125 ℃ （30~45） → e: +20 ℃ （30~45） $P_{c-b} = \frac{L_b - L_c}{L_c} \times 100\%$; $P_{c-d} = \frac{L_d - L_c}{L_c} \times 100\%$
Static Humidity	No visible mechanical damage. Inductance change: Within ±10%	Inductors shall be subjected to (95±3)%RH . at(60±2)℃for (1000±4) h.Placed at room temperature for 2 hours, within 48 hours of testing.
Life	No visible mechanical damage. Inductance change: Within ±10%	Inductors shall be store at (85±2)℃for (1000±4) hours with Irms applied. Placed at room temperature for 2 hours, within 48 hours of testing

Soldering Condition

(This is for recommendation, please customer perform adjustment according to actual application)

Recommend Reflow Soldering Profile : (solder : Sn96.5 / Ag3 / Cu0.5)



Profile Feature	Lead (Pb)-Free solder
Preheat: Temperature Min (Ts_{min}) Temperature Max (Ts_{max}) Time (Ts_{min} to Ts_{max}) (ts)	150℃ 200℃ 60 -120 seconds
Average ramp-up rate: (Ts max to Tp)	3℃ / second max.
Time maintained above : Temperature (T_L) Time (t_L)	217℃ 60-150 seconds
Peak Temperature (Tp)	260℃
Time within $^{+0}_{-5}$°C of actual peak Temperature (tp)^2	10 seconds
Ramp-down Rate	6℃/second max.
Time 25℃ to Peak Temperature	8minutes max.

Allowed Re-flow times : 2 times

Remark : To avoid discoloration phenomena of chip on terminal electrodes, please use N_2 Re-flow furnace .

Note

- recommend products store in warehouse with temperature between 15 to 35℃ under humidity between 25 to 75%RH. Even under storage conditions recommended above, solder ability of products will be degraded stored over 1 year old.
- Cartons must be placed in correct direction which indicated on carton, otherwise the reel or wire will be deformed.
- Storage conditions as below are inappropriate:
  - a. Stored in high electrostatic environment
  - b. Stored in direct sunshine, rain, snow or condensation.
  - c. Exposed to sea wind or corrosive gases, such as Cl_2, H_2S, NH_3, SO_2, NO_2, etc.
- The products are used in circuit board thickness greater than 1.6mm. If customers use less than the thickness of the circuit board that you should confirm with the company, in order to recommend a more suitable product.