

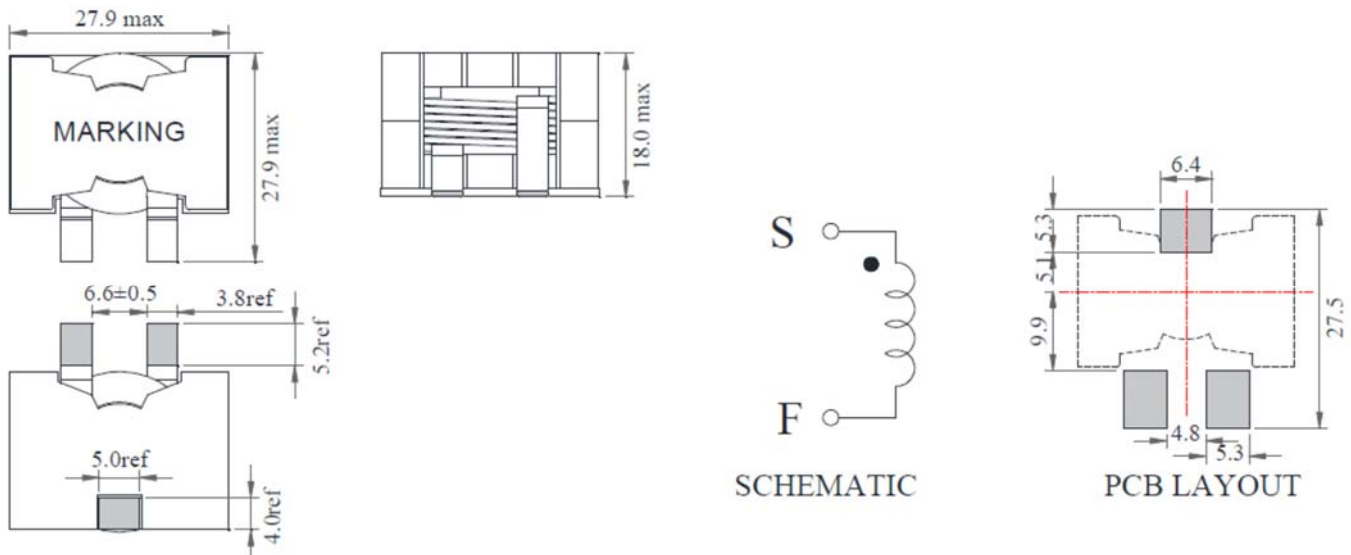
FEATURES

- Susing flat wire, and SMD type.
- Low radiation noise by magnetically shielded construction
- High current, Low resistance.
- Operating temperature : $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$.

APPLICATIONS

- high efficiency DC/DC converters.
- Single and polyphase buck converters.
- Filter for audio applications.
- Optimized for high current boost applications.

CONFIGURATIONS & DIMENSIONS (unit in mm)



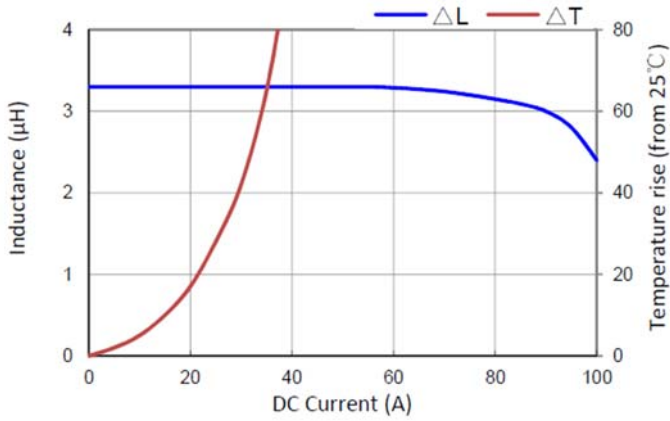
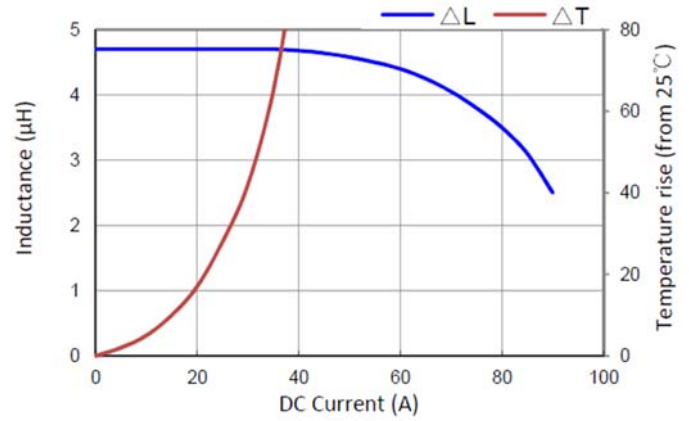
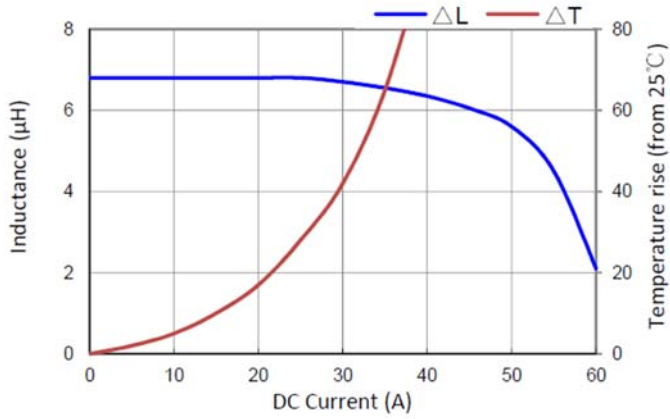
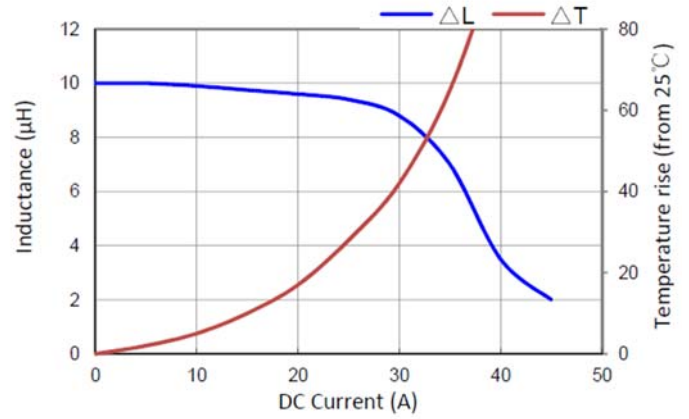
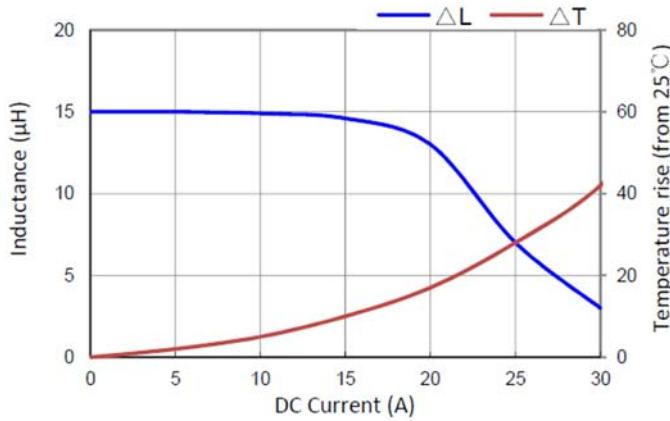
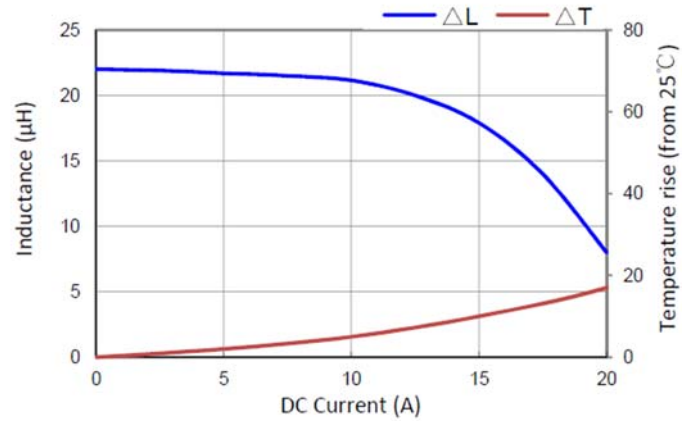
ELECTRICAL CHARACTERISTICS

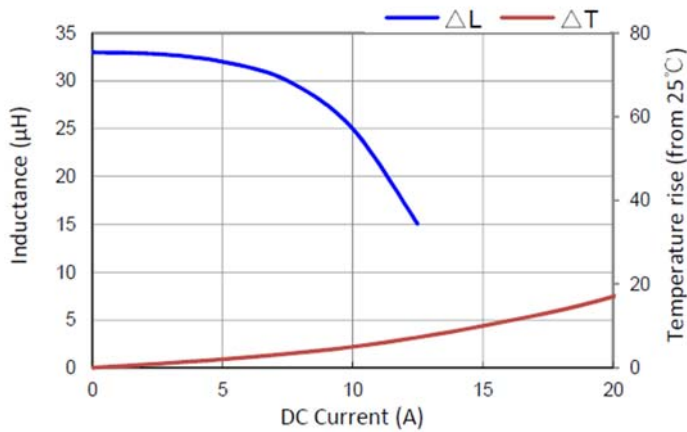
Part number	Inductance μH	DC resistance $\text{m}\Omega$ max. (typ.)	DC saturation current			Temperature rise	
			A max.(typ.)			current A	
			$\Delta L \leq 10\%$	$\Delta L \leq 20\%$	$\Delta L \leq 30\%$	$\Delta T \leq 20^{\circ}\text{C}$	$\Delta T \leq 40^{\circ}\text{C}$
HAPH26A-332M	$3.3 \pm 20\%$	2.86(2.3)	91.0(92.7)	92.5(95.0)	93.6(96.5)	20	28
HAPH26A-472M	$4.7 \pm 20\%$	2.86(2.3)	59.0(62.0)	61.2(65.0)	62.4(66.4)	20	28
HAPH26A-682M	$6.8 \pm 20\%$	2.86(2.3)	42.0(44.5)	45.0(47.2)	45.9(47.8)	20	28
HAPH26A-103K	$10 \pm 10\%$	2.86(2.3)	28.0(30.5)	31.2(32.5)	32.1(34.0)	20	28
HAPH26A-153K	$15 \pm 10\%$	2.86(2.3)	18.0(19.7)	21.2(22.8)	21.9(23.3)	20	28
HAPH26A-223K	$22 \pm 10\%$	2.86(2.3)	12.0(13.6)	14.0(15.2)	15.0(15.9)	20	28
HAPH26A-333K	$33 \pm 10\%$	2.86(2.3)	7.0(8.3)	8.7(9.4)	9.6(10.2)	20	28

Remark

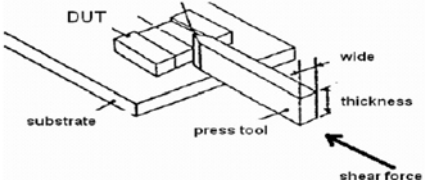
Inductance is measured with a LCR meter 4284A or equivalent. Test frequency at 100kHz

DC resistance is measured with 16502 Milliohm Meter , or equivalent. Reference ambient temperature 25°C

Electrical Characteristic Curve
HAPH26A-332

HAPH26A-472

HAPH26A-682

HAPH26A-103

HAPH26A-153

HAPH26A-223


HAPH26A-333

Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~+125°C (Including self - temperature rise)	
Storage temperature	1. -10~+40°C, 50~60%RH (Product with taping) 2. -40~+125°C (on board)	
Electrical Performance Test		
Inductance	Refer to standard electrical characteristics list.	HP4284A, CH11025, CH3302, CH1320, CH1320S LCR Meter.
DCR		CH16502, Agilent33420A Micro-Ohm Meter.
Saturation Current (Isat)	Approximately ΔL 30%	Saturation DC Current (Isat) will cause L0 to drop ΔL (%)
Heat Rated Current (Irms)	Approximately ΔT 40°C	Heat Rated Current (Irms) will cause the coil temperature rise ΔT (°C). 1. Applied the allowed DC current 2. Temperature measured by digital surface thermometer
Reliability Test		
Life Test	Appearance : No damage. Inductance : within $\pm 10\%$ of initial value Q : Shall not exceed the specification value. RDC : within $\pm 15\%$ of initial value and shall not exceed the specification value	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Temperature : 125 ± 2 °C (Inductor) Applied current : rated current Duration : 1000 ± 12 hrs Measured at room temperature after placing for 24 ± 2 hrs
Load Humidity		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) Humidity : 85 ± 2 %R.H. Temperature : 85°C ± 2 °C Duration : 1000hrs Min. with 100% rated current Measured at room temperature after placing for 24 ± 2 hrs
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020D Classification Reflow Profiles) 1. Baked at 50°C for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65 ± 2 °C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs. 3. Raise temperature to 65 ± 2 °C 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25°C in 2.5hrs, keep at 25°C for 2 hrs then keep at -10°C for 3 hrs 4. Keep at 25°C 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.

Thermal shock		<p>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Condition for 1 cycle Step1 : -40±2°C 30±5min Step2 : 25±2°C ≤0.5min Step3 : 125±2°C 30±5min Number of cycles : 500 Measured at room temperature after placing for 24±2 hrs</p>															
Vibration		<p>Oscillation Frequency: 10 ~ 2K ~ 10Hz for 20 minutes Equipment : Vibration checker Total Amplitude:1.52mm±10% Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)。</p>															
Bending		<p>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm <0805 inch(2012mm):40x100x0.8mm Bending depth: >=0805 inch(2012mm):1.2mm <0805 inch(2012mm):0.8mm duration of 10 sec.</p>															
Shock	<p>Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value</p>	<table border="1"> <thead> <tr> <th>Type</th> <th>Peak value (g's)</th> <th>Normal duration (D) (ms)</th> <th>Wave form</th> <th>Velocity change (Vi)ft/sec</th> </tr> </thead> <tbody> <tr> <td>SMD</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> <tr> <td>Lead</td> <td>50</td> <td>11</td> <td>Half-sine</td> <td>11.3</td> </tr> </tbody> </table>	Type	Peak value (g's)	Normal duration (D) (ms)	Wave form	Velocity change (Vi)ft/sec	SMD	50	11	Half-sine	11.3	Lead	50	11	Half-sine	11.3
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Solder ability	<p>More than 95% of the terminal electrode should be covered with solder.</p>	<p>Preheat: 150°C,60sec.。 Solder: Sn96.5% Ag3% Cu0.5% Temperature: 245±5°C ◦ Flux for lead free: Rosin, 9.5% ◦ Dip time: 4±1sec ◦ Depth: completely cover the termination Depth: completely cover the termination</p>															
Resistance to Soldering Heat		<table border="1"> <thead> <tr> <th>Temperature(°C)</th> <th>Time(s)</th> <th>Temperature ramp/immersion and emersion rate</th> <th>Number of heat cycles</th> </tr> </thead> <tbody> <tr> <td>260 ±5 (solder temp)</td> <td>10 ±1</td> <td>25mm/s ±6 mm/s</td> <td>1</td> </tr> </tbody> </table>	Temperature(°C)	Time(s)	Temperature ramp/immersion and emersion rate	Number of heat cycles	260 ±5 (solder temp)	10 ±1	25mm/s ±6 mm/s	1							
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Terminal Strength	<p>Appearance : No damage. Impedance : within±15% of initial value Inductance : within±10% of initial value Q : Shall not exceed the specification value. RDC : within ±15% of initial value and shall not exceed the specification value e</p>	<p>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification 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.</p> 															

Note : When there are questions concerning measurement result : measurement shall be made after 48 ± 2 hours of recovery under the standard condition.