

Flat Wire / Hot Pressed Molded Power Inductor



AMELH4020S

Request Samples



Check Inventory



4.2 x 4.2 x 1.9 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- Low-DCR
- Ultra-low AC losses
- High saturation current
- Soft saturation characteristics
- Minimal audible buzzing

Applications

- Consumer Electronics
- Industrial Electronics
- Telecom equipment's

Electrical Specifications

Part Number	Inductance	Tolerance	DC Resistance		Saturation Current		Temperature Rise Current		SRF
	0.1MHz/1.0V		Max	Typ.	Typ.	Max.	Typ.	Max.	
Units	μH	%	mΩ		A		A		MHz
Symbol	L	M	DCR		Isat		Irms		F
AMELH4020S-42NMT	0.042	20	1.0	0.8	52.0	48.0	40.0	36.0	660
AMELH4020S-R10MT	0.1	20	1.5	1.2	34.0	31.0	34.0	31.0	230
AMELH4020S-R11MT	0.11	20	1.6	1.3	33.0	30.0	33.0	30.0	230
AMELH4020S-R12MT	0.12	20	1.7	1.4	32.0	29.0	32.0	29.0	230
AMELH4020S-R20MT	0.2	20	2.4	2.0	26.0	23.0	27.0	24.0	130
AMELH4020S-R22MT	0.22	20	2.6	2.2	25.0	22.0	26.0	23.0	130
AMELH4020S-R25MT	0.25	20	3.0	2.5	23.0	21.0	24.0	22.0	120
AMELH4020S-R33MT	0.33	20	4.2	3.5	20.0	18.0	22.0	19.0	102
AMELH4020S-R47MT	0.47	20	5.1	4.2	17.0	15.0	19.0	16.0	85
AMELH4020S-R56MT	0.56	20	5.6	4.7	15.5	13.5	18.5	15.0	75
AMELH4020S-R60MT	0.60	20	5.9	5.1	15.0	13.0	18.0	14.0	72
AMELH4020S-R68MT	0.68	20	7.0	6.1	12.0	10.5	15.0	12.0	55
AMELH4020S-R82MT	0.82	20	8.6	7.7	11.5	10.0	14.0	11.5	50
AMELH4020S-1R0MT	1.00	20	9.0	8.1	9.5	8.5	12.5	10.5	43
AMELH4020S-1R2MT	1.20	20	11.8	10.5	9.0	8.0	11.5	9.5	40
AMELH4020S-1R5MT	1.50	20	14.3	13.0	8.5	7.5	10.5	9.0	37
AMELH4020S-2R0MT	2.00	20	20.0	17.8	7.0	6.0	8.5	7.5	30
AMELH4020S-2R2MT	2.20	20	21.5	19.5	6.2	5.7	8.0	7.0	27
AMELH4020S-3R3MT	3.30	20	34.0	30.8	5.5	5.0	6.6	5.6	25
AMELH4020S-4R7MT	4.70	20	44.0	40.0	4.8	4.3	5.7	5.2	21



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Test Conditions

Test frequency: 1.0V/100KHz

Test Temp: 25°C Ambient

Isat: DC current at which the inductance drops 30% from its value without current.

Irms: DC current that causes the temperature rise (ΔT , approximate 40 °C) from 25°C ambient.

Operating Voltage: 40V

Operating Temperature: -40°C ~ +125°C. (including self-temperature rise)

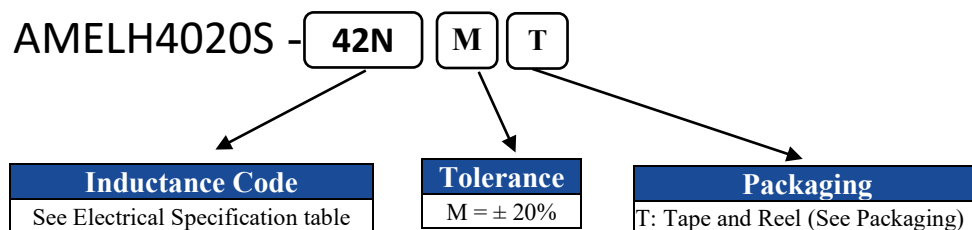
Rated DC Current: The lower value of Irms and Isat

Part Temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions

Storage Condition: -40°C ~ +125°C (on board), -10°C ~ +40°C (with packaging) and R.H. 85 max

AMELH4020S Series is **RoHS Compliant and Pb free.**

Part Identification



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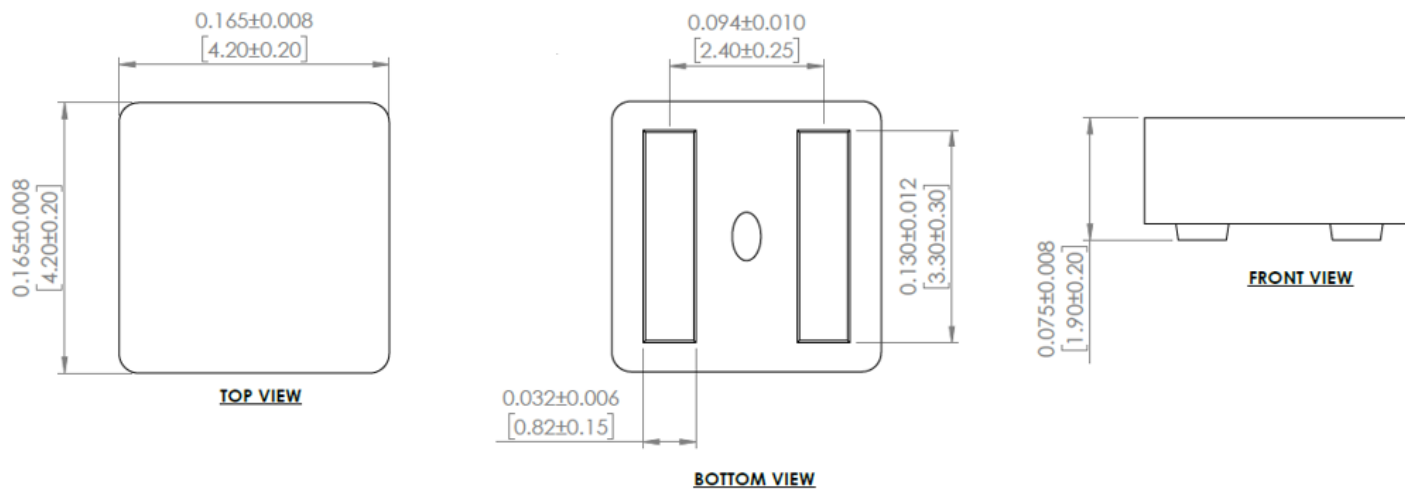


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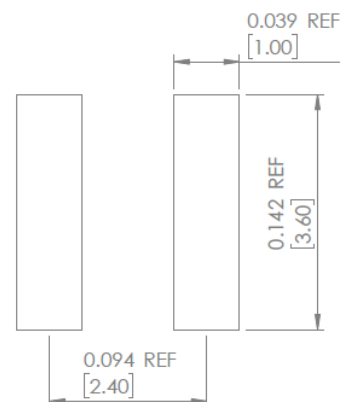


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Mechanical Specifications



RECOMMENDED LAND PATTERN



DIMENSIONS: INCHES[mm]

NOTES:

1. THE ABOVE PCB LAYOUT REFERENCE ONLY.
2. RECOMMEND SOLDER PASTE THICKNESS AT .004[0.12] AND ABOVE.



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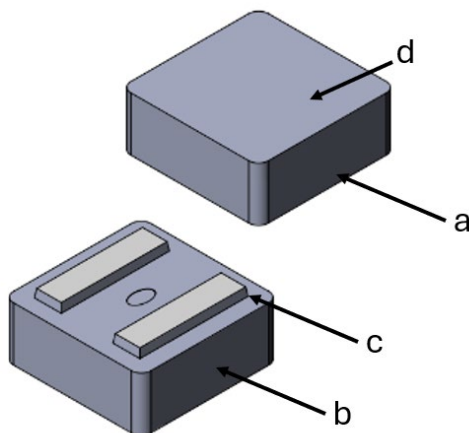


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Materials



a	Core
b	Wire
c	Solder
d	Coating

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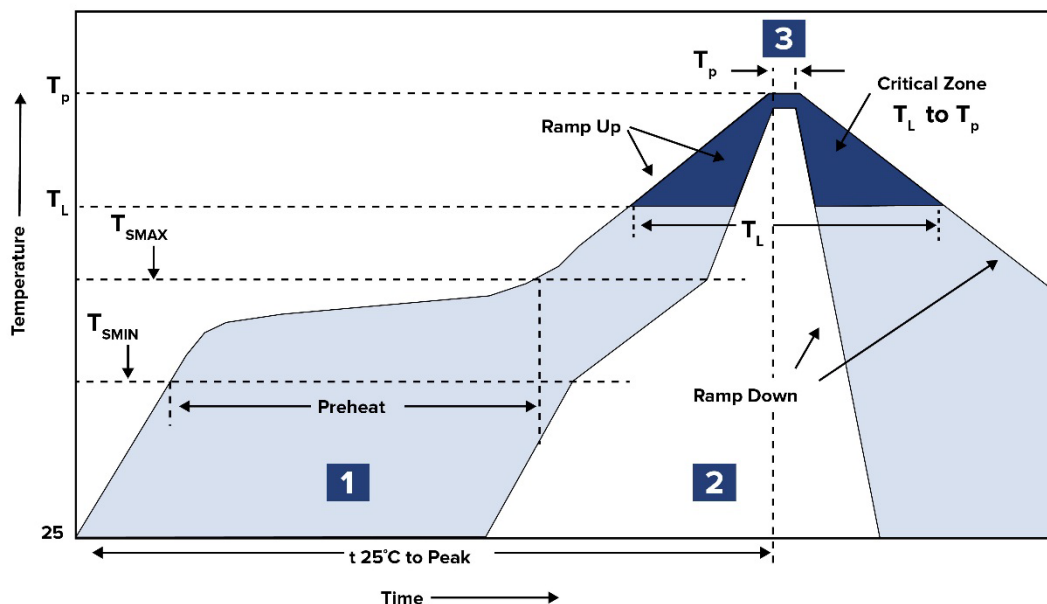


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Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 120 sec.
2	Reflow	T_L 217°C	60 ~ 150 sec.
3	Peak heat	T_P 260°C-5°C	30 sec. MAX

Ref. Solder paste: Sn/3.0Ag/0.5Cu

Ramp up rate: 3°C/s Max.

Ramp down rate: 6°C/s Max.



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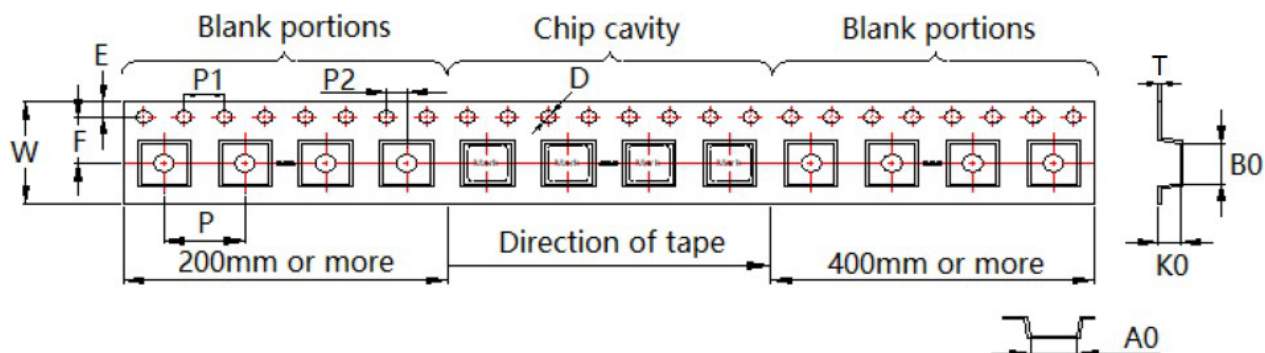
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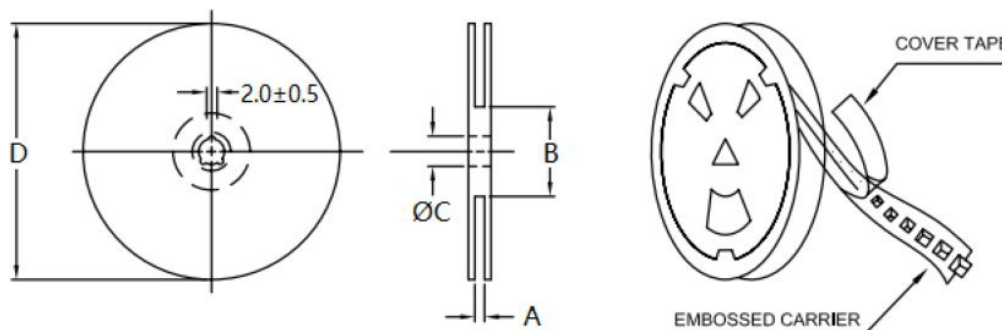
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Packaging

Tape & Reel: 3000 pcs/reel



A0	B0	W	E	F	P	P1	P2	D	T	K0
4.7±0.1	4.7±0.1	12±0.3	1.75±0.1	5.5±0.1	8±0.1	4±0.1	2±0.1	1.5±0.1	0.35±0.1	2.3±0.1



Type	A	B	C	D
13"x12mm	12.4+2.0/-0.0	100.0±2.0	13.0+0.5/-0.2	330.0

Dimensions: mm

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf (COTS, which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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<u>AMELH4020S-4R7MT</u>	<u>AMELH4020S-R56MT</u>	<u>AMELH4020S-R82MT</u>	<u>AMELH4020S-R25MT</u>	<u>AMELH4020S-1R2MT</u>
<u>AMELH4020S-R68MT</u>	<u>AMELH4020S-1R5MT</u>	<u>AMELH4020S-R22MT</u>	<u>AMELH4020S-R33MT</u>	<u>AMELH4020S-R20MT</u>
<u>AMELH4020S-R11MT</u>	<u>AMELH4020S-2R0MT</u>	<u>AMELH4020S-R60MT</u>	<u>AMELH4020S-2R2MT</u>	<u>AMELH4020S-R47MT</u>