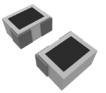


Ultra-High Q Multi-layer RF Inductor



AIMC-04UHQ

Request Samples



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0.4 x 0.2 x 0.3 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- Ceramic base with high SRF
- Excellent DCR and current carrying characteristics
- Multilayer monolithic construction yields high reliability
- Tight tolerances down to $\pm 0.05\text{nH}$
- Wide range of inductors options

Applications

- Wireless communication, RF amplifiers, filters, oscillators, and mobile devices, satellite communication and IoT technologies
- TV transmitters, RFID systems, medical devices, GPS systems, drones, and Bluetooth
- Impedance matching networks, low-noise amplifiers (LNAs), signal coupler, mixers
- Tuned circuits, phase-locked loops (PLLs), RF combiners and diplexers

Electrical Specifications

Part Number*	Inductance	Tolerance	Quality Factor	L/Q Test Freq.	Typical Q @ Freq. (GHz)					Self-resonant Frequency	DC Resistance	Rated Current
			Min		0.5	0.8	1.8	2.0	2.4			
Units	nH	%, nH	-	MHz	-					Min.	Max.	Typ.
Symbol	L	W, B, C, S, H, J	Q	Freq.	Q					SRF	DCR	I _{rms}
AIMC-04UHQ-0N2	0.2	W, B, C, S	-	500	-	-	-	-	-	17000	0.01	1000
AIMC-04UHQ-0N3	0.3	W, B, C, S	-	500	-	-	-	-	-	17000	0.015	1000
AIMC-04UHQ-0N4	0.4	W, B, C, S	-	500	-	-	-	-	-	17000	0.03	1000
AIMC-04UHQ-0N5	0.5	W, B, C, S	-	500	-	-	-	-	-	17000	0.04	1000
AIMC-04UHQ-0N6	0.6	W, B, C, S	14	500	28	31	44	48	55	17000	0.05	950
AIMC-04UHQ-0N7	0.7	W, B, C, S	14	500	25	29	41	44	51	15500	0.05	900
AIMC-04UHQ-0N8	0.8	W, B, C, S	14	500	23	27	39	43	48	15500	0.05	900
AIMC-04UHQ-0N9	0.9	W, B, C, S	14	500	21	25	37	40	45	14600	0.05	900
AIMC-04UHQ-1N0	1.0	W, B, C, S	14	500	20	24	36	39	44	13200	0.05	900
AIMC-04UHQ-1N1	1.1	W, B, C, S	14	500	22	26	40	42	48	13000	0.07	850
AIMC-04UHQ-1N2	1.2	W, B, C, S	14	500	20	25	37	20	46	13000	0.07	800
AIMC-04UHQ-1N3	1.3	W, B, C, S	14	500	21	26	39	42	48	12700	0.80	700
AIMC-04UHQ-1N4	1.4	W, B, C, S	14	500	21	25	38	42	47	12700	0.80	700
AIMC-04UHQ-1N5	1.5	W, B, C, S	14	500	20	25	37	40	46	12700	0.80	700
AIMC-04UHQ-1N6	1.6	W, B, C, S	14	500	19	23	35	37	42	11000	0.80	700
AIMC-04UHQ-1N7	1.7	W, B, C, S	14	500	20	24	37	39	44	11000	0.80	700
AIMC-04UHQ-1N8	1.8	W, B, C, S	14	500	22	28	43	46	50	10200	0.80	700
AIMC-04UHQ-1N9	1.9	W, B, C, S	14	500	24	30	46	50	55	10200	0.08	700
AIMC-04UHQ-2N0	2.0	W, B, C, S	14	500	22	27	41	44	48	10100	0.10	700
AIMC-04UHQ-2N1	2.1	W, B, C, S	14	500	24	29	45	48	54	10100	0.10	650
AIMC-04UHQ-2N2	2.2	W, B, C, S	14	500	22	27	42	45	49	9800	0.20	500
AIMC-04UHQ-2N3	2.3	W, B, C, S	14	500	24	30	46	50	55	9800	0.20	450
AIMC-04UHQ-2N4	2.4	W, B, C, S	14	500	20	25	19	42	46	9500	0.20	450
AIMC-04UHQ-2N5	2.5	W, B, C, S	14	500	19	24	19	42	46	9500	0.20	450
AIMC-04UHQ-2N6	2.6	B, C, S	14	500	19	24	19	42	46	9500	0.20	450
AIMC-04UHQ-2N7	2.7	B, C, S	14	500	20	25	19	41	45	8800	0.20	450
AIMC-04UHQ-2N8	2.8	B, C, S	14	500	19	25	40	44	47	8800	0.20	450
AIMC-04UHQ-2N9	2.9	B, C, S	14	500	19	25	40	44	47	8800	0.20	450

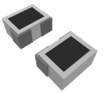


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AIMC-04UHQ

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0.4 x 0.2 x 0.3 mm
RoHS/RoHS II Compliant
MSL Level = 1

Electrical Specifications (Cont'd)

Part Number*	Inductance	Tolerance	Quality Factor	L/Q Test Freq.	Typical Q @ Freq. (GHz)					Self-resonant Frequency	DC Resistance		Rated Current
			Min		0.5	0.8	1.8	2.0	2.4		Min.	Max.	
Units	nH	%	-	MHz	-					MHz	Ω		mA
Symbol	L	W, B, C, S, H, J	Q	Freq.	Q					SRF	DCR		I _{rms}
AIMC-04UHQ-3N0	3.0	B, C, S	14	500	20	26	40	43	46	8500	0.20		450
AIMC-04UHQ-3N1	3.1	B, C, S	14	500	20	25	41	43	45	8500	0.25		400
AIMC-04UHQ-3N2	3.2	B, C, S	14	500	20	26	41	44	47	8500	0.25		400
AIMC-04UHQ-3N3	3.3	B, C, S	14	500	20	26	42	44	48	8200	0.25		400
AIMC-04UHQ-3N4	3.4	B, C, S	14	500	20	26	42	44	48	8200	0.30		400
AIMC-04UHQ-3N5	3.5	B, C, S	14	500	20	26	42	44	48	8200	0.30		350
AIMC-04UHQ-3N6	3.6	B, C, S	14	500	20	27	42	44	48	8200	0.30		350
AIMC-04UHQ-3N7	3.7	B, C, S	14	500	19	25	41	43	49	8200	0.35		350
AIMC-04UHQ-3N8	3.8	B, C, S	14	500	18	23	37	39	43	8200	0.35		350
AIMC-04UHQ-3N9	3.9	B, C, S	14	500	19	24	37	39	42	7700	0.35		350
AIMC-04UHQ-4N0	4.0	B, C, S	14	500	18	24	38	41	44	6900	0.35		350
AIMC-04UHQ-4N1	4.1	B, C, S	14	500	19	24	38	41	44	6900	0.35		350
AIMC-04UHQ-4N2	4.2	B, C, S	14	500	18	23	37	39	45	6900	0.35		350
AIMC-04UHQ-4N3	4.3	H, J, S	14	500	19	24	37	39	42	6900	0.35		350
AIMC-04UHQ-4N7	4.7	H, J, S	14	500	18	23	36	38	41	6700	0.35		350
AIMC-04UHQ-5N1	5.1	H, J, S	14	500	18	24	36	38	41	6600	0.35		350
AIMC-04UHQ-5N6	5.6	H, J	14	500	18	24	35	37	40	6100	0.40		300
AIMC-04UHQ-6N2	6.2	H, J	14	500	17	22	32	34	37	6000	0.40		300
AIMC-04UHQ-6N8	6.8	H, J	14	500	17	22	33	35	37	5700	0.40		300
AIMC-04UHQ-7N5	7.5	H, J	14	500	17	23	34	36	38	5600	0.50		300
AIMC-04UHQ-8N2	8.2	H, J	14	500	17	21	30	31	33	5100	0.50		300
AIMC-04UHQ-9N1	9.1	H, J	14	500	17	22	31	32	33	4900	0.50		300
AIMC-04UHQ-10N	10	H, J	14	500	17	22	32	33	34	4900	0.60		250
AIMC-04UHQ-11N	11	H, J	14	500	15	20	30	31	33	4000	0.80		250
AIMC-04UHQ-12N	12	H, J	14	500	17	21	30	31	32	4000	0.82		230
AIMC-04UHQ-13N	13	H, J	14	500	15	20	30	31	32	4000	0.99		210
AIMC-04UHQ-15N	15	H, J	12	500	16	20	29	30	30	4000	1.53		170
AIMC-04UHQ-16N	16	H, J	12	500	17	21	29	30	29	4000	1.53		170
AIMC-04UHQ-18N	18	H, J	12	500	16	19	29	29	29	3700	1.63		160
AIMC-04UHQ-20N	20	H, J	12	500	16	19	25	24	23	3000	2.26		140
AIMC-04UHQ-22N	22	H, J	12	500	15	18	25	24	22	3000	2.26		140
AIMC-04UHQ-24N	24	H, J	12	500	15	18	23	21	20	2900	2.6		120
AIMC-04UHQ-27N	27	H, J	12	500	13	16	22	20	17	2900	2.6		120
AIMC-04UHQ-30N	30	H, J	10	300	13	16	18	19	20	2600	3.2		120
AIMC-04UHQ-33N	33	H, J	10	300	13	15	20	19	20	2600	3.2		120
AIMC-04UHQ-36N	36	H, J	10	300	13	15	16	15	12	2400	3.6		110
AIMC-04UHQ-39N	39	H, J	10	300	13	14	16	15	10	2400	3.6		120
AIMC-04UHQ-43N	43	H, J	8	300	12	14	13	12	7	2100	4.0		100
AIMC-04UHQ-47N	47	H, J	8	300	12	41	13	11	6	2100	4.0		100
AIMC-04UHQ-51N	51	H, J	8	300	12	14	11	9	4	1900	4.2		100
AIMC-04UHQ-56N	56	H, J	8	300	12	14	10	8	-	1900	4.2		100

*For orderable part numbers, please select the tolerance and packaging option as described in the [Part Identification](#) section.

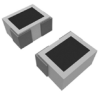


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AIMC-04UHQ

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0.4 x 0.2 x 0.3 mm

RoHS/RoHS II Compliant

MSL Level = 1

Electrical Specifications (Cont'd)

Test Conditions:

L, Q, SRF Test signal: -20dBm, or 50mV.

Ir: DC current that causes the temperature rise (ΔT , approximate 20 °C) from 20°C ambient.

Operating Temperature: -55°C ~ +125°C. (including self-temperature rise)

Storage Condition: -55°C ~ +125°C (on board), -10°C ~ +40°C (with packaging) and R.H. 70% max.

AIMC-04UHQ Series is **RoHS Compliant and Pb free.**

Part Identification

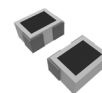
AIMC - 04UHQ - -

Inductance Code
Please refer to Electrical Spec. table. E.g., 4N7

Tolerance
W: $\pm 0.05\text{nH}$
B: $\pm 0.1\text{nH}$
C: $\pm 0.2\text{nH}$
S: $\pm 0.3\text{nH}$
H: $\pm 3\%$
J: $\pm 5\%$

Packaging
T: Tape and Reel (15kpcs / reel)
Blank: Bulk

Ultra-High Q Multi-layer RF Inductor



AIMC-04UHQ

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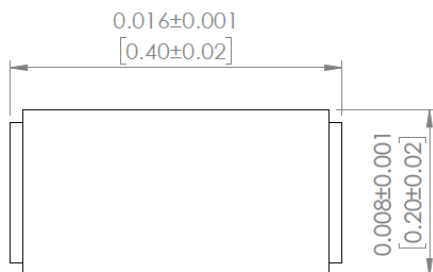


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0.4 x 0.2 x 0.3 mm
RoHS/RoHS II Compliant
MSL Level = 1

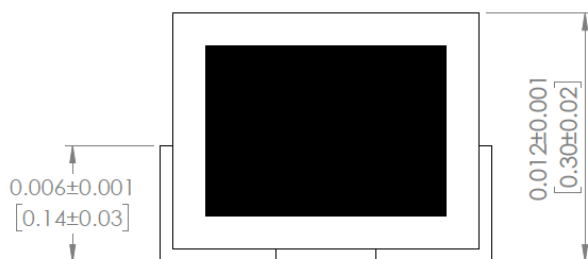
Mechanical Specifications



TOP VIEW

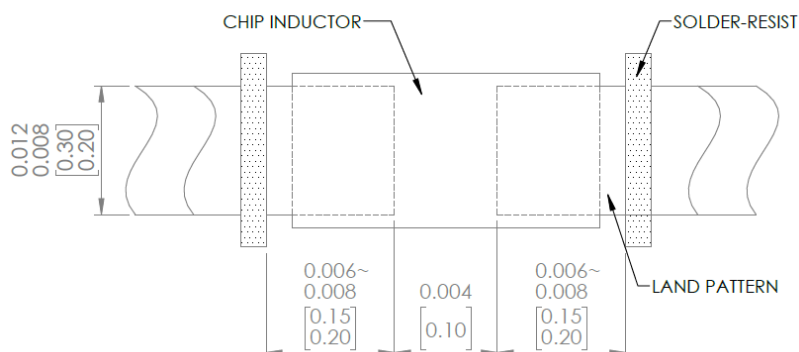


BOTTOM VIEW



FRONT VIEW

RECOMMENDED LAND PATTERN



Dimensions Unit: Inches [mm]

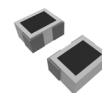


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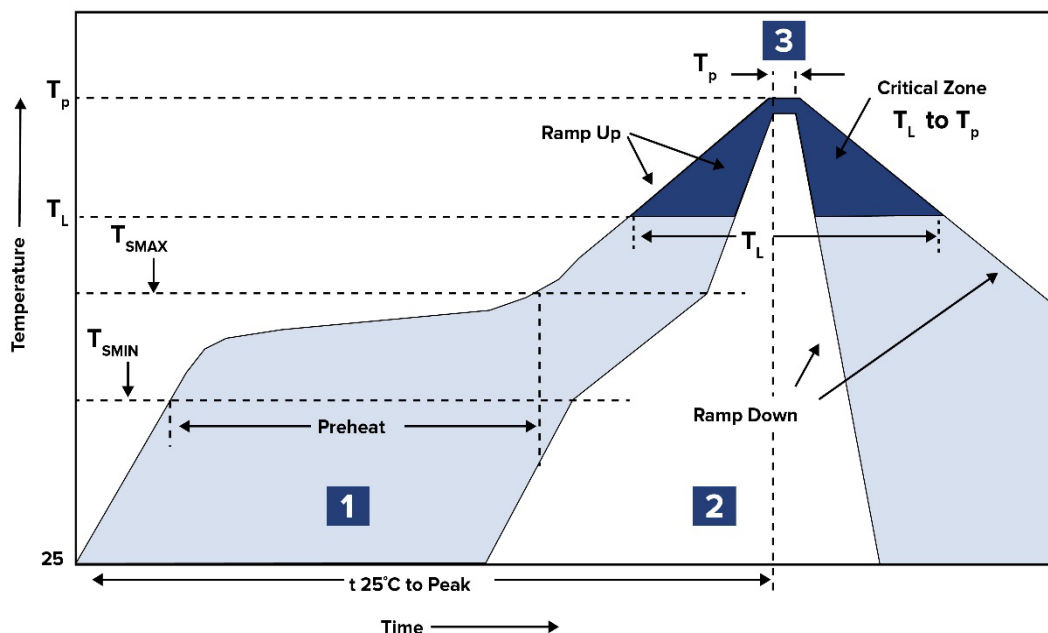


Check Inventory



0.4 x 0.2 x 0.3 mm
RoHS/RoHS II Compliant
MSL Level = 1

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 ~ 90 sec.
3	Peak heat	T_p 260°C Max	10 sec. MAX

Ref. Solder paste: Pb-free Sn/3.0Ag/0.5Cu

Ramp up rate: 3°C/s Max.

Ramp down rate: 6°C/s Max.

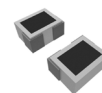


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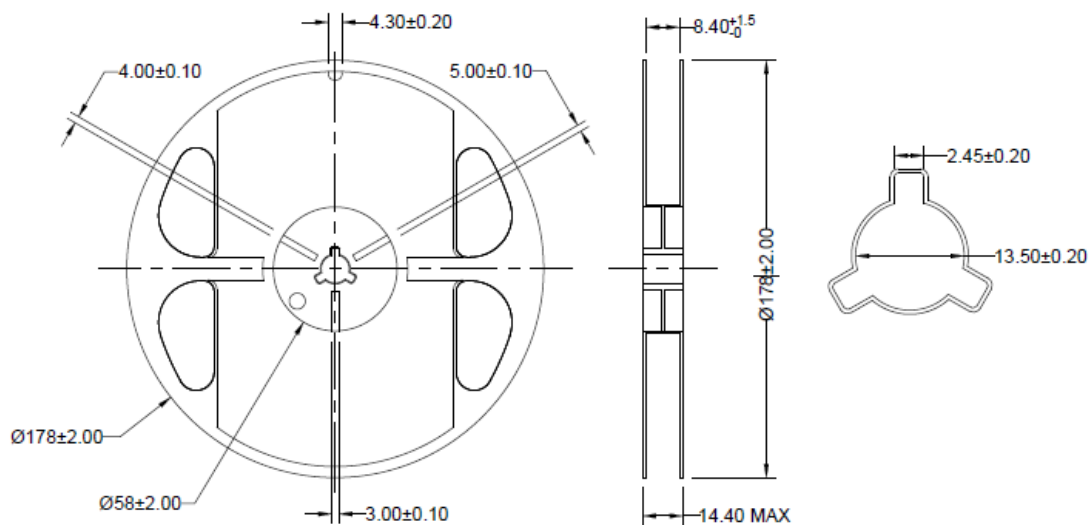
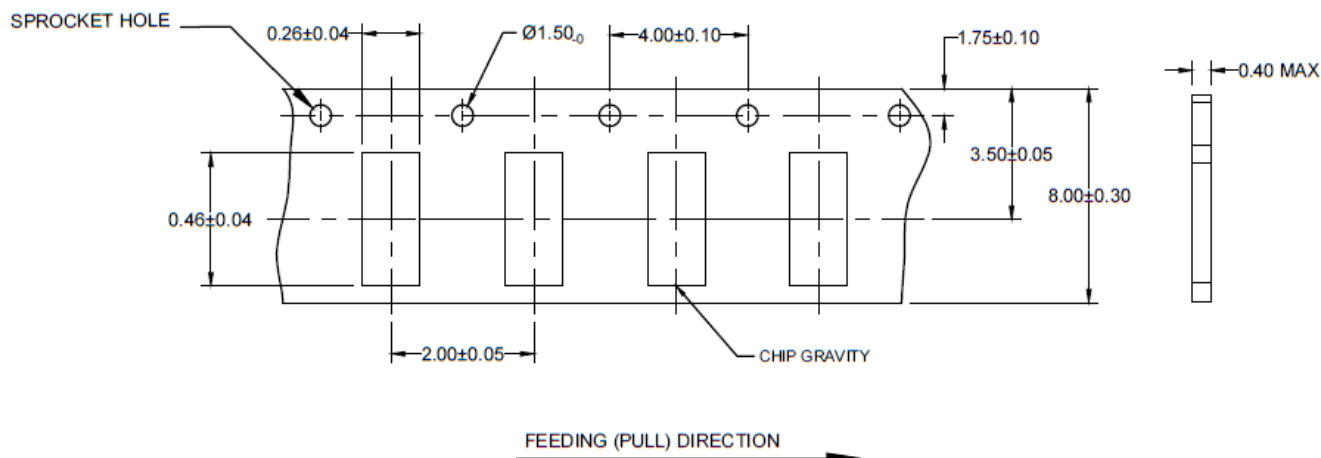
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0.4 x 0.2 x 0.3 mm
RoHS/RoHS II Compliant
MSL Level = 1

Packaging

Tape & Reel: 15,000 pcs/reel



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>AIMC-04UHQ-1N5C-T</u>	<u>AIMC-04UHQ-20NJ-T</u>	<u>AIMC-04UHQ-0N7C-T</u>	<u>AIMC-04UHQ-3N3B-T</u>	<u>AIMC-04UHQ-47NH-T</u>
<u>AIMC-04UHQ-3N5B-T</u>	<u>AIMC-04UHQ-1N2C-T</u>	<u>AIMC-04UHQ-0N3W-T</u>	<u>AIMC-04UHQ-18NH-T</u>	<u>AIMC-04UHQ-30NH-T</u>
<u>AIMC-04UHQ-1N4S-T</u>	<u>AIMC-04UHQ-0N8W-T</u>	<u>AIMC-04UHQ-0N5W-T</u>	<u>AIMC-04UHQ-0N8B-T</u>	<u>AIMC-04UHQ-3N8S-T</u>
<u>AIMC-04UHQ-56NJ-T</u>	<u>AIMC-04UHQ-24NH-T</u>	<u>AIMC-04UHQ-4N0C-T</u>	<u>AIMC-04UHQ-2N4B-T</u>	<u>AIMC-04UHQ-2N9B-T</u>
<u>AIMC-04UHQ-3N2B-T</u>	<u>AIMC-04UHQ-51NH-T</u>	<u>AIMC-04UHQ-0N6S-T</u>	<u>AIMC-04UHQ-2N6B-T</u>	<u>AIMC-04UHQ-11NJ-T</u>
<u>AIMC-04UHQ-2N3C-T</u>	<u>AIMC-04UHQ-5N1S-T</u>	<u>AIMC-04UHQ-3N4B-T</u>	<u>AIMC-04UHQ-0N2C-T</u>	<u>AIMC-04UHQ-1N0C-T</u>
<u>AIMC-04UHQ-3N7S-T</u>	<u>AIMC-04UHQ-0N7S-T</u>	<u>AIMC-04UHQ-2N7B-T</u>	<u>AIMC-04UHQ-13NJ-T</u>	<u>AIMC-04UHQ-1N8B-T</u>
<u>AIMC-04UHQ-2N1B-T</u>	<u>AIMC-04UHQ-1N8W-T</u>	<u>AIMC-04UHQ-1N3B-T</u>	<u>AIMC-04UHQ-8N2H-T</u>	<u>AIMC-04UHQ-3N1C-T</u>
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<u>AIMC-04UHQ-1N1W-T</u>	<u>AIMC-04UHQ-3N0B-T</u>	<u>AIMC-04UHQ-1N2S-T</u>	<u>AIMC-04UHQ-1N6W-T</u>	<u>AIMC-04UHQ-2N0B-T</u>
<u>AIMC-04UHQ-39NH-T</u>	<u>AIMC-04UHQ-0N3B-T</u>	<u>AIMC-04UHQ-2N5W-T</u>	<u>AIMC-04UHQ-11NH-T</u>	<u>AIMC-04UHQ-1N9B-T</u>
<u>AIMC-04UHQ-9N1H-T</u>	<u>AIMC-04UHQ-9N1J-T</u>	<u>AIMC-04UHQ-2N1S-T</u>	<u>AIMC-04UHQ-7N5H-T</u>	<u>AIMC-04UHQ-39NJ-T</u>
<u>AIMC-04UHQ-2N1C-T</u>	<u>AIMC-04UHQ-2N5S-T</u>	<u>AIMC-04UHQ-1N1B-T</u>	<u>AIMC-04UHQ-6N8J-T</u>	<u>AIMC-04UHQ-47NJ-T</u>
<u>AIMC-04UHQ-3N8B-T</u>	<u>AIMC-04UHQ-3N4C-T</u>	<u>AIMC-04UHQ-1N6B-T</u>	<u>AIMC-04UHQ-0N8C-T</u>	<u>AIMC-04UHQ-0N9W-T</u>
<u>AIMC-04UHQ-1N9W-T</u>	<u>AIMC-04UHQ-0N2S-T</u>	<u>AIMC-04UHQ-15NJ-T</u>	<u>AIMC-04UHQ-0N9S-T</u>	<u>AIMC-04UHQ-2N4W-T</u>
<u>AIMC-04UHQ-3N5C-T</u>	<u>AIMC-04UHQ-4N1B-T</u>	<u>AIMC-04UHQ-4N0S-T</u>	<u>AIMC-04UHQ-0N6B-T</u>	<u>AIMC-04UHQ-3N9B-T</u>
<u>AIMC-04UHQ-4N3J-T</u>	<u>AIMC-04UHQ-1N0S-T</u>	<u>AIMC-04UHQ-1N7C-T</u>	<u>AIMC-04UHQ-2N2B-T</u>	<u>AIMC-04UHQ-2N4S-T</u>
<u>AIMC-04UHQ-2N3W-T</u>	<u>AIMC-04UHQ-4N0B-T</u>	<u>AIMC-04UHQ-3N8C-T</u>	<u>AIMC-04UHQ-2N6S-T</u>	<u>AIMC-04UHQ-6N8H-T</u>
<u>AIMC-04UHQ-16NJ-T</u>	<u>AIMC-04UHQ-0N9C-T</u>	<u>AIMC-04UHQ-33NJ-T</u>	<u>AIMC-04UHQ-3N4S-T</u>	<u>AIMC-04UHQ-5N6H-T</u>