ASRF SERIES

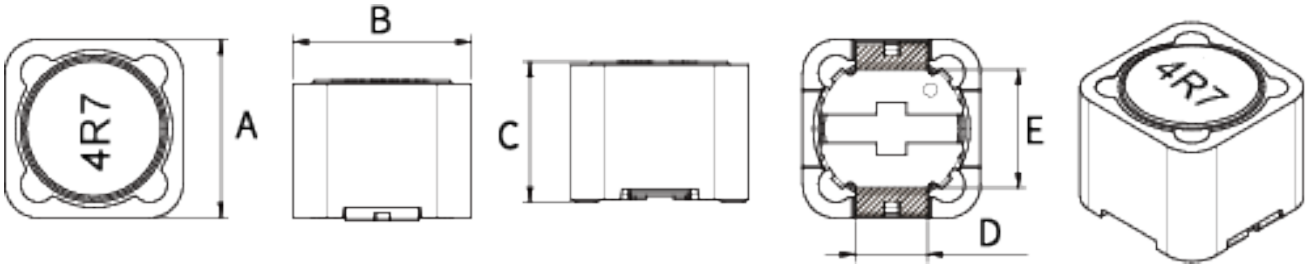
Applications:

- Switch mode power supplies from 0.1 W up to 300 W.
- Integrated DC/DC converter.
- Ideal for switch mode power supplies with extreme high efficiency (>95%).

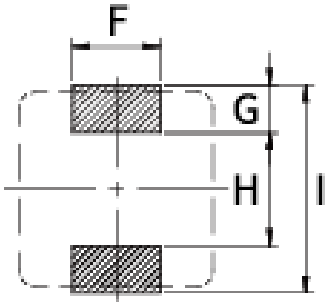
Explanation of part numbers:

ASRF	1205	P	-	7R7	M
Series Codes	Size Codes	Plastic base		Inductance Codes	Tolerance

Boundary dimension:



Recommended Land Pattern:



Schematic:

(unit: mm)

Size / Series	A	B	C	D	E	F	G	H	I
ASRF0703	7.3±0.5	7.3±0.5	3.3±0.2	2.0	4.5	3.0	2.0	4.0	7.8
ASRF0704	7.3±0.5	7.3±0.5	4.2±0.3	2.0	4.5	3.0	2.0	4.0	7.8
ASRF1204	12.0±0.3	12.0±0.3	4.6±0.2	5.0	7.6	5.4	2.9	7.0	12.7
ASRF1205	12.0±0.3	12.0±0.3	6.0±0.2	5.0±0.2	8.0±0.3	5.4	2.9	7.0	12.7
ASRF1207	12.0±0.3	12.0±0.3	8.0max.	5.0±0.2	8.0±0.3	5.4	2.9	7.0	12.7
ASRF1207P	12.0±0.5	12.0±0.5	7.8±0.3	5.0	7.0	6.0	3.5	6.0	12.7
ASRF1209	12.0±0.5	12.0±0.5	10.0max.	5.0±0.2	8.0±0.3	5.4	2.9	7.0	12.7

Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF0703-1R2N	1.2±30%	17.5	21	7.5	4.69
ASRF0703-2R2N	2.2±30%	21.6	25.9	5.5	4.28
ASRF0703-3R3N	3.3±30%	26	31.1	4.5	3.91
ASRF0703-4R7N	4.7±30%	31.2	37.4	4.1	3.49
ASRF0703-6R8N	6.8±30%	41.7	50	3.4	3.08
ASRF0703-8R2N	8.2±30%	52	62.4	2.9	2.62
ASRF0703-100M	10±20%	55.6	66.7	2.7	2.55
ASRF0703-120M	12±20%	72.2	86.7	2.4	2.4
ASRF0703-150M	15±20%	82	98	2.2	2.1
ASRF0703-180M	18±20%	103	123	2	1.95
ASRF0703-220M	22±20%	120	144	1.85	1.78
ASRF0703-270M	27±20%	159	191	1.7	1.58
ASRF0703-330M	33±20%	185	222	1.55	1.45
ASRF0703-390M	39±20%	206	247	1.45	1.34
ASRF0703-470M	47±20%	248	298	1.3	1.23
ASRF0703-560M	56±20%	295	354	1.2	1.14
ASRF0703-680M	68±20%	366	439	1.08	1.02
ASRF0703-820M	82±20%	423	507	0.96	0.94
ASRF0703-101M	100±20%	516	619	0.88	0.85
ASRF0703-121M	120±20%	578	694	0.8	0.79
ASRF0703-151M	150±20%	755	906	0.72	0.72
ASRF0703-181M	180±20%	937	1124	0.65	0.65
ASRF0703-221M	220±20%	1350	1620	0.59	0.54
ASRF0703-271M	270±20%	1513	1816	0.53	0.51
ASRF0703-331M	330±20%	1700	2040	0.49	0.48
ASRF0703-391M	390±20%	1877	2252	0.45	0.46
ASRF0703-471M	470±20%	2775	3330	0.41	0.38
ASRF0703-561M	560±20%	2958	3550	0.37	0.37
ASRF0703-681M	680±20%	3558	4270	0.34	0.34
ASRF0703-821M	820±20%	4500	5400	0.31	0.3
ASRF0703-102M	1000±20%	4938	5926	0.28	0.27

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

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Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF0704-1R2N	1.2±30%	12.9	15.4	7.5	6
ASRF0704-2R5N	2.5±30%	17.2	20.7	5.2	5.1
ASRF0704-3R3N	3.3±30%	19.8	23.7	4.6	4.8
ASRF0704-4R7N	4.7±30%	23.9	28.7	3.8	4.25
ASRF0704-6R8N	6.8±30%	31	37.2	3.3	3.83
ASRF0704-8R2N	8.2±30%	38	45.6	3	3.2
ASRF0704-100M	10±20%	43.4	52.1	2.6	2.9
ASRF0704-120M	12±20%	49	58.8	2.3	2.69
ASRF0704-150M	15±20%	61.5	73.8	2.1	2.5
ASRF0704-180M	18±20%	75.3	90	1.9	2.2
ASRF0704-220M	22±20%	82.7	99	1.75	2.1
ASRF0704-270M	27±20%	101	121	1.6	2
ASRF0704-330M	33±20%	115	138	1.5	1.85
ASRF0704-390M	39±20%	138	166	1.4	1.67
ASRF0704-470M	47±20%	170	204	1.25	1.5
ASRF0704-560M	56±20%	190	228	1.1	1.43
ASRF0704-680M	68±20%	255	306	1	1.25
ASRF0704-820M	82±20%	311	373	0.9	1.15
ASRF0704-101M	100±20%	323	388	0.85	1.08
ASRF0704-121M	120±20%	403	484	0.75	0.98
ASRF0704-151M	150±20%	510	612	0.7	0.9
ASRF0704-181M	180±20%	575	690	0.65	0.85
ASRF0704-221M	220±20%	693	832	0.58	0.75
ASRF0704-271M	270±20%	890	1068	0.53	0.68
ASRF0704-331M	330±20%	1090	1308	0.48	0.62
ASRF0704-391M	390±20%	1220	1464	0.43	0.58
ASRF0704-471M	470±20%	1540	1848	0.4	0.52
ASRF0704-561M	560±20%	2100	2520	0.36	0.45
ASRF0704-681M	680±20%	2380	2856	0.32	0.42
ASRF0704-821M	820±20%	3100	3720	0.29	0.37
ASRF0704-102M	1000±20%	3323	3988	0.27	0.33

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF1204-1R0N	1±30%	6.52	7.83	19.4	8.62
ASRF1204-2R2N	2.2±30%	10	12	13.42	6.97
ASRF1204-3R3N	3.3±30%	12	14.4	10.96	6.37
ASRF1204-4R7N	4.7±30%	15.1	18.1	9.18	5.68
ASRF1204-5R6N	5.6±30%	17.3	20.7	8.41	5.25
ASRF1204-6R8N	6.8±30%	22.7	27.2	7.63	4.63
ASRF1204-8R2N	8.2±30%	25.4	30.5	6.95	4.37
ASRF1204-100M	10±20%	28.1	33.7	6.4	4.16
ASRF1204-120M	12±20%	31.1	37.3	5.74	3.95
ASRF1204-150M	15±20%	40.3	48.3	5.14	3.47
ASRF1204-180M	18±20%	47.5	57	4.69	3.2
ASRF1204-220M	22±20%	57.8	69.3	4.24	2.9
ASRF1204-270M	27±20%	65.3	78.3	3.83	2.73
ASRF1204-330M	33±20%	74.4	89.3	3.46	2.55
ASRF1204-390M	39±20%	89	107	3.18	2.33
ASRF1204-470M	47±20%	114	137	2.9	2.06
ASRF1204-560M	56±20%	130	156	2.66	1.93
ASRF1204-680M	68±20%	158	190	2.41	1.75
ASRF1204-820M	82±20%	178	214	2.19	1.65
ASRF1204-101M	100±20%	227	272	1.99	1.46
ASRF1204-121M	120±20%	257	308	1.81	1.37
ASRF1204-151M	150±20%	326	391	1.62	1.22
ASRF1204-181M	180±20%	374	449	1.48	1.13
ASRF1204-221M	220±20%	505	606	1.34	0.98
ASRF1204-271M	270±20%	559	671	1.21	0.93
ASRF1204-331M	330±20%	672	806	1.09	0.84
ASRF1204-391M	390±20%	804	964	1	0.78
ASRF1204-471M	470±20%	955	1146	0.91	0.71
ASRF1204-561M	560±20%	1172	1406	0.84	0.64
ASRF1204-681M	680±20%	1382	1658	0.76	0.6
ASRF1204-821M	820±20%	1623	1947	0.69	0.55
ASRF1204-102M	1000±20%	2120	2544	0.62	0.47

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
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Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF1205-1R0N	1±30%	5.1	6.12	22.41	10.35
ASRF1205-2R5N	2.5±30%	9.4	11.3	15.11	7.63
ASRF1205-3R3N	3.3±30%	11.2	13.4	12.5	6.97
ASRF1205-4R7N	4.7±30%	12.7	15.2	10.34	6.57
ASRF1205-5R6N	5.6±30%	15.8	18.9	9.47	5.87
ASRF1205-6R8N	6.8±30%	17.6	21.1	8.59	5.57
ASRF1205-8R2N	8.2±30%	20.1	24.1	7.82	5.2
ASRF1205-100M	10±20%	22.2	26.6	7.08	4.59
ASRF1205-120M	12±20%	24	28.8	6.47	4.76
ASRF1205-150M	15±20%	28.7	34.4	5.78	4.26
ASRF1205-180M	18±20%	31.1	37.3	5.28	4.18
ASRF1205-220M	22±20%	40.7	48.8	4.77	3.65
ASRF1205-270M	27±20%	44	52.8	4.31	3.51
ASRF1205-330M	33±20%	52.1	62.5	3.9	3.23
ASRF1205-390M	39±20%	69.5	83.4	3.58	2.79
ASRF1205-470M	47±20%	76.7	92	3.27	2.85
ASRF1205-560M	56±20%	85.7	103	2.99	2.52
ASRF1205-680M	68±20%	108	115	2.71	2.23
ASRF1205-820M	82±20%	120	144	2.47	2.12
ASRF1205-101M	100±20%	139	167	2.24	1.98
ASRF1205-121M	120±20%	186	223	2.04	1.71
ASRF1205-151M	150±20%	214	257	1.83	1.59
ASRF1205-181M	180±20%	236	283	1.67	1.52
ASRF1205-221M	220±20%	302	362	1.51	1.32
ASRF1205-271M	270±20%	378	454	1.36	1.2
ASRF1205-331M	330±20%	461	553	1.23	1.08
ASRF1205-391M	390±20%	538	607	1.13	1
ASRF1205-471M	470±20%	642	770	1.03	0.91
ASRF1205-561M	560±20%	800	960	0.94	0.82
ASRF1205-681M	680±20%	907	1088	0.85	0.77
ASRF1205-821M	820±20%	1150	1380	0.78	0.68
ASRF1205-102M	1000±20%	1432	1718	0.7	0.61

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF1207-1R4N	1.4±30%	6.37	7.64	26.2	11
ASRF1207-2R2N	2.2±30%	9.54	11.5	21.3	9.1
ASRF1207-3R3N	3.3±30%	11.2	13.4	18.3	8.4
ASRF1207-4R7N	4.7±30%	13	15.6	15.2	7.8
ASRF1207-5R6N	5.6±30%	14.7	17.6	13.7	7.3
ASRF1207-6R8N	6.8±30%	16.2	19.4	12.7	7
ASRF1207-8R2N	8.2±30%	18	21.6	11.5	6.6
ASRF1207-100M	10±20%	19.8	23.7	10.42	6.3
ASRF1207-120M	12±20%	21.7	26.1	9.61	6
ASRF1207-150M	15±20%	28.7	34.4	8.4	5.1
ASRF1207-180M	18±20%	31.2	37.4	7.6	5
ASRF1207-220M	22±20%	39	46.8	6.9	4.5
ASRF1207-270M	27±20%	44.1	52.9	6.22	4.2
ASRF1207-330M	33±20%	56.3	67.5	5.68	3.7
ASRF1207-390M	39±20%	62.7	75.2	5.14	3.5
ASRF1207-470M	47±20%	71.5	85.8	4.6	3.3
ASRF1207-560M	56±20%	83.4	100	4.46	3
ASRF1207-680M	68±20%	103	123	3.9	2.7
ASRF1207-820M	82±20%	119	143	3.51	2.5
ASRF1207-101M	100±20%	137	164	3.36	2.4
ASRF1207-121M	120±20%	182	218	2.91	2.1
ASRF1207-151M	150±20%	206	247	2.6	1.9
ASRF1207-181M	180±20%	250	300	2.57	1.75
ASRF1207-221M	220±20%	300	360	2.22	1.63
ASRF1207-271M	270±20%	380	456	1.94	1.4
ASRF1207-331M	330±20%	467	560	1.79	1.2
ASRF1207-391M	390±20%	525	630	1.63	1.1
ASRF1207-471M	470±20%	683	819	1.48	1
ASRF1207-561M	560±20%	767	920	1.36	0.98
ASRF1207-681M	680±20%	986	1183	1.25	0.9
ASRF1207-821M	820±20%	1172	1406	1.16	0.8
ASRF1207-102M	1000±20%	1322	1586	1.01	0.7

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

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Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF1207P-6R8N	6.8±30%	20.3	24.4	12	5.23
ASRF1207P-8R2N	8.2±30%	22.2	26.6	10.9	5.08
ASRF1207P-100M	10±20%	24.1	28.9	10.2	4.95
ASRF1207P-120M	12±20%	28.6	34.3	9	4.61
ASRF1207P-150M	15±20%	31	37.2	8.4	4.49
ASRF1207P-180M	18±20%	32.9	39.5	7.8	4.42
ASRF1207P-220M	22±20%	38	45.6	7	4.17
ASRF1207P-270M	27±20%	43	51.6	6.2	3.97
ASRF1207P-330M	33±20%	48.5	58.2	5.5	3.74
ASRF1207P-390M	39±20%	60.8	73	5.2	3.34
ASRF1207P-470M	47±20%	70	84	4.6	3.11
ASRF1207P-560M	56±20%	75.4	90.5	4.3	3
ASRF1207P-680M	68±20%	94.8	114	3.9	2.67
ASRF1207P-820M	82±20%	105	126	3.6	2.54
ASRF1207P-101M	100±20%	137	164	3.2	2.22
ASRF1207P-121M	120±20%	176	211	2.9	1.96
ASRF1207P-151M	150±20%	202	242	2.6	1.83
ASRF1207P-181M	180±20%	258	310	2.4	1.62
ASRF1207P-221M	220±20%	288	346	2.2	1.53
ASRF1207P-271M	270±20%	370	444	2	1.35
ASRF1207P-331M	330±20%	410	492	1.8	1.29
ASRF1207P-391M	390±20%	508	610	1.65	1.15
ASRF1207P-471M	470±20%	630	756	1.45	1.04
ASRF1207P-561M	560±20%	760	912	1.35	0.94
ASRF1207P-681M	680±20%	954	1145	1.2	0.84
ASRF1207P-821M	820±20%	1065	1278	1.1	0.8
ASRF1207P-102M	1000±20%	1315	1578	1	0.71

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

Electrical characteristics:

Test condition:at 25℃ 100KHz/0.1V

Part No.	L(0A)(μh)	DCR (mΩ)		Isat(A)	Irms(A)
		Typ	Max	Typ	Typ
ASRF1209-1R0N	1±30%	5.23	6.28	33	10.23
ASRF1209-2R2N	2.2±30%	7.9	9.48	23.2	9.1
ASRF1209-3R3N	3.3±30%	9.18	11	19.1	8.44
ASRF1209-4R7N	4.7±30%	10.2	12.2	16.08	8.01
ASRF1209-6R8N	6.8±30%	12.8	15.4	13.37	7.15
ASRF1209-8R2N	8.2±30%	14	16.8	12.17	6.79
ASRF1209-100M	10±20%	15.6	18.7	11.02	6.48
ASRF1209-120M	12±20%	16.9	20.3	10.06	6.22
ASRF1209-150M	15±20%	19.8	23.8	9	5.75
ASRF1209-180M	18±20%	21.3	25.6	8.21	5.54
ASRF1209-220M	22±20%	28.2	33.8	7.5	4.82
ASRF1209-270M	27±20%	31.8	38.2	7	4.54
ASRF1209-330M	33±20%	41.4	49.7	6.3	4.05
ASRF1209-390M	39±20%	44.6	53.5	6	3.83
ASRF1209-470M	47±20%	55.2	66.2	5.2	3.42
ASRF1209-560M	56±20%	60.1	72.1	4.7	3.28
ASRF1209-680M	68±20%	79.7	95.6	4.3	2.85
ASRF1209-820M	82±20%	85.8	103	4.1	2.76
ASRF1209-101M	100±20%	121	145	3.5	2.31
ASRF1209-121M	120±20%	131	157	3.3	2.23
ASRF1209-151M	150±20%	176	211	2.9	1.91
ASRF1209-181M	180±20%	191	229	2.6	1.84
ASRF1209-221M	220±20%	209	250	2.35	1.77
ASRF1209-271M	270±20%	314	377	2.2	1.43
ASRF1209-331M	330±20%	335	402	2.05	1.39
ASRF1209-391M	390±20%	363	436	1.85	1.34
ASRF1209-471M	470±20%	475	570	1.55	1.17
ASRF1209-561M	560±20%	505	606	1.5	1.13
ASRF1209-681M	680±20%	564	677	1.4	1.07
ASRF1209-821M	820±20%	773	927	1.25	0.92
ASRF1209-102M	1000±20%	938	1126	1.1	0.83

NOTE:

- All data is tested based on 25℃ ambient temperature.
- Inductance measure condition at 100kHz,0.1V.
- Saturation current: the actual value of DC current when the inductance decrease 20% of its initial value.
- Temperature rise current: the actual value of DC current when the temperature rise is ΔT40℃ (Ta=25℃).
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will affect the product temperature. Please verify the product temperature in the final application.

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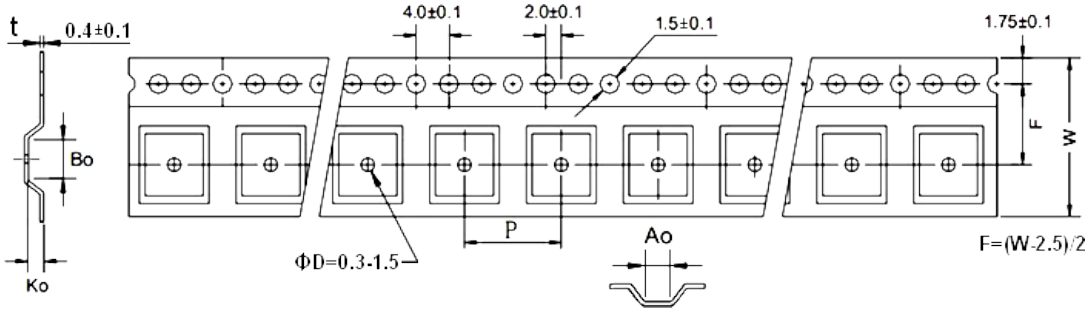
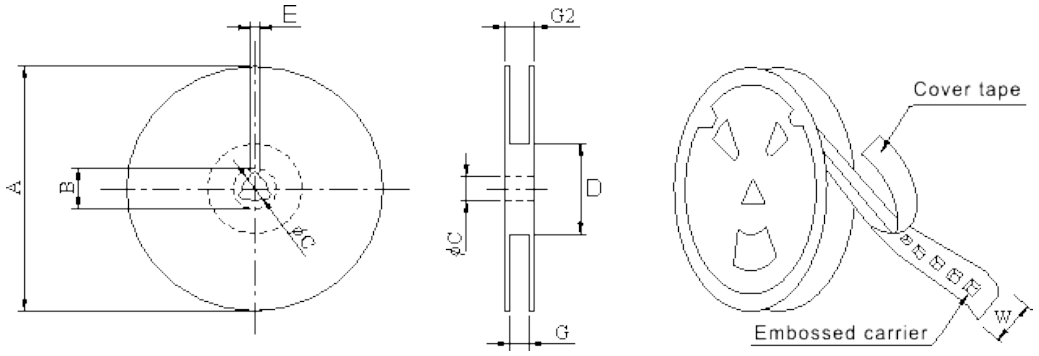
Packing Information:



(unit: mm)

Series	QTY (Pcs/Reel)	Ao	Bo	Ko	W	P
ASRF0703	1000	7.8±0.1	7.8±0.1	3.6±0.1	16	12.0
ASRF0704	1000	7.8±0.1	7.8±0.1	4.6±0.1	16	12.0
ASRF1204	500	12.7±0.1	12.7±0.1	4.8±0.1	24	16.0
ASRF1205	500	12.7±0.1	12.7±0.1	6.2±0.1	24	16.0
ASRF1207	500	12.7±0.1	12.7±0.1	8.2±0.1	24	16.0
ASRF1207P	500	12.7±0.1	12.7±0.1	8.2±0.1	24	16.0
ASRF1209	250	12.7±0.1	12.7±0.1	10.2±0.1	24	20



(unit: mm)

Series	TYPE	A(Ref.)	B(Ref.)	C(Ref.)	D(Ref.)	E(Ref.)	G(Ref.)	G2(Ref.)
ASRF0703	330*16mm	330	20.5	13	100	2	16.5±0.5	21
ASRF0704	330*16mm	330	20.5	13	100	2	16.5±0.5	21
ASRF1204	330*24mm	330	20.5	13	100	2	24.5±0.5	29
ASRF1205	330*24mm	330	20.5	13	100	2	24.5±0.5	29
ASRF1207	330*24mm	330	20.5	13	100	2	24.5±0.5	29
ASRF1207P	330*24mm	330	20.5	13	100	2	24.5±0.5	29
ASRF1209	330*24mm	330	20.5	13	100	2	24.5±0.5	29

Typical Pulling Force: 10-130 grams: