

Data Sheet

Customer:

Product: Shielded SMD Power Inductor – PDRH Series

Sizes.: 0302/0303/0502/0503/0603

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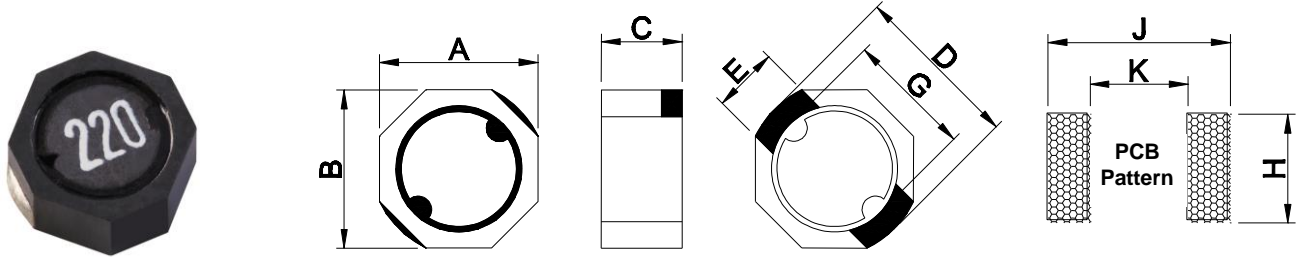
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Shielded SMD Power Inductor



Dimensions

Unit: mm

Type	A	B	C max.	D	E	G	H	K	J
PDRH0302	3.85±0.3	3.85±0.3	2.00	3.9±0.2	1.6	3.2	1.9	3.0	4.55
PDRH0303	3.85±0.3	3.85±0.3	3.00	3.9±0.2	1.6	3.2	1.9	3.0	4.55
PDRH0502	5.30max.	5.30max.	2.00	5.7±0.4	1.6	4.2	1.9	3.9	5.7
PDRH0503	5.30max.	5.30max.	3.00	5.7±0.4	1.6	4.2	1.9	3.9	5.7
PDRH0603	5.90±0.2	5.90±0.2	3.00	6.4±0.3	2.4	4.7	2.7	4.4	6.5

Features

- Directly connected electrode on ferrite core
- Excellent property with high saturation for surface mounting

Applications

- OA Equipment
- Notebook PCs
- LCD Monitor
- Portable Terminal Equipment
- DC/DC Converters, etc.
- Power Supply for VTR

Characteristics

- Rated DC Current: The current when the inductance becomes 30% lower than its initial value.
- Operating temperature: -40~125°C

Inductance and rated current ranges

- PDRH0302 0.47~1800µH 1.84~0.036A
- PDRH0303 1.0~3300µH 1.90~0.026A
- PDRH0502 0.47~820µH 2.33~0.120A
- PDRH0503 0.47~2500µH 4.82~0.045A
- PDRH0603 1.0~3300µH 4.70~0.078A
- Test equipment:
L: HP4284A LCR meter
DCR: Milli-ohm meter
- Electrical specifications at 25°C

Product Identification

PDRH	0303	M	T	101
Product Type	Dimensions (AxBxC)	Inductor Tolerance	Packaging Style	Inductance
	0302: 3.85x3.85x2.0 0303: 3.85x3.85x3.0 0502: 5.3x5.3x2.0 0503: 5.3x5.3x3.0 0603: 5.9x5.9x3.0	M: ±20% N: ±30%	T: Tape and Reel	1R0: 1.0µH 470: 47µH 101: 100µH

■Electrical Characteristics

PDRH 0302 Type(□:Tolerance):

Part No	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PDRH0302□TR47	0.47	N	100 KHz, 0.25V	0.017	1.84
PDRH0302□T1R0	1.0	N	100 KHz, 0.25V	0.030	1.80
PDRH0302□T1R2	1.2	N	100 KHz, 0.25V	0.043	1.70
PDRH0302□T1R5	1.5	N	100 KHz, 0.25V	0.052	1.60
PDRH0302□T1R8	1.8	N	100 KHz, 0.25V	0.056	1.55
PDRH0302□T2R0	2.0	N	100 KHz, 0.25V	0.057	1.51
PDRH0302□T2R2	2.2	N	100 KHz, 0.25V	0.058	1.50
PDRH0302□T2R4	2.4	N	100 KHz, 0.25V	0.059	1.41
PDRH0302□T2R5	2.5	N	100 KHz, 0.25V	0.059	1.40
PDRH0302□T2R7	2.7	N	100 KHz, 0.25V	0.060	1.35
PDRH0302□T3R3	3.3	N	100 KHz, 0.25V	0.064	1.30
PDRH0302□T3R5	3.5	N	100 KHz, 0.25V	0.127	1.30
PDRH0302□T4R7	4.7	N	100 KHz, 0.25V	0.146	1.10
PDRH0302□T5R6	5.6	N	100 KHz, 0.25V	0.176	0.95
PDRH0302□T6R2	6.2	N	100 KHz, 0.25V	0.220	0.91
PDRH0302□T6R8	6.8	N	100 KHz, 0.25V	0.238	0.90
PDRH0302□T8R2	8.2	N	100 KHz, 0.25V	0.272	0.80
PDRH0302□T100	10	M	1KHz, 0.25V	0.299	0.70
PDRH0302□T120	12	M	1KHz, 0.25V	0.350	0.62
PDRH0302□T150	15	M	1KHz, 0.25V	0.472	0.61
PDRH0302□T180	18	M	1KHz, 0.25V	0.552	0.58
PDRH0302□T220	22	M	1KHz, 0.25V	0.592	0.52
PDRH0302□T270	27	M	1KHz, 0.25V	0.630	0.44
PDRH0302□T330	33	M	1KHz, 0.25V	1.075	0.43
PDRH0302□T390	39	M	1KHz, 0.25V	1.269	0.37
PDRH0302□T470	47	M	1KHz, 0.25V	1.309	0.34
PDRH0302□T560	56	M	1KHz, 0.25V	1.960	0.29
PDRH0302□T680	68	M	1KHz, 0.25V	2.613	0.25
PDRH0302□T820	82	M	1KHz, 0.25V	2.950	0.20
PDRH0302□T101	100	M	1KHz, 0.25V	3.255	0.19
PDRH0302□T121	120	M	1KHz, 0.25V	3.350	0.15
PDRH0302□T151	150	M	1KHz, 0.25V	3.550	0.12
PDRH0302□T181	180	M	1KHz, 0.25V	4.000	0.10
PDRH0302□T221	220	M	1KHz, 0.25V	4.900	0.09
PDRH0302□T271	270	M	1KHz, 0.25V	5.300	0.085
PDRH0302□T331	330	M	1KHz, 0.25V	7.280	0.08
PDRH0302□T391	390	M	1KHz, 0.25V	8.200	0.078
PDRH0302□T471	470	M	1KHz, 0.25V	9.200	0.075
PDRH0302□T561	560	M	1KHz, 0.25V	11.00	0.072
PDRH0302□T681	680	M	1KHz, 0.25V	13.37	0.07
PDRH0302□T821	820	M	1KHz, 0.25V	16.50	0.068
PDRH0302□T102	1000	M	1KHz, 0.25V	19.55	0.065
PDRH0302□T122	1200	M	1KHz, 0.25V	25.50	0.045
PDRH0302□T152	1522	M	1KHz, 0.25V	36.15	0.038
PDRH0302□T182	1800	M	1KHz, 0.25V	57.62	0.036

■Electrical Characteristics

PDRH0303 Type(□:Tolerance):

Part No	L (μ H)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PDRH0303□T1R0	1.0	N	100 KHz, 0.25V	0.009	1.90
PDRH0303□T1R2	1.2	N	100 KHz, 0.25V	0.010	1.75
PDRH0303□T1R5	1.5	N	100 KHz, 0.25V	0.013	1.45
PDRH0303□T2R0	2.0	N	100 KHz, 0.25V	0.016	1.25
PDRH0303□T2R2	2.2	N	100 KHz, 0.25V	0.025	1.15
PDRH0303□T2R5	2.5	N	100 KHz, 0.25V	0.018	1.05
PDRH0303□T2R7	2.7	N	100 KHz, 0.25V	0.020	1.00
PDRH0303□T3R3	3.3	N	100 KHz, 0.25V	0.030	0.96
PDRH0303□T3R5	3.5	N	100 KHz, 0.25V	0.025	0.95
PDRH0303□T3R9	3.9	N	100 KHz, 0.25V	0.033	0.87
PDRH0303□T4R7	4.7	N	100 KHz, 0.25V	0.039	0.78
PDRH0303□T5R6	5.6	N	100 KHz, 0.25V	0.044	0.74
PDRH0303□T6R8	6.8	N	100 KHz, 0.25V	0.051	0.68
PDRH0303□T8R2	8.2	N	100 KHz, 0.25V	0.065	0.57
PDRH0303□T100	10	M	1KHz, 0.25V	0.092	0.43
PDRH0303□T120	12	M	1KHz, 0.25V	0.100	0.38
PDRH0303□T150	15	M	1KHz, 0.25V	0.113	0.33
PDRH0303□T180	18	M	1KHz, 0.25V	0.125	0.30
PDRH0303□T220	22	M	1KHz, 0.25V	0.146	0.28
PDRH0303□T270	27	M	1KHz, 0.25V	0.176	0.26
PDRH0303□T330	33	M	1KHz, 0.25V	0.214	0.23
PDRH0303□T390	39	M	1KHz, 0.25V	0.225	0.21
PDRH0303□T470	47	M	1KHz, 0.25V	0.304	0.19
PDRH0303□T560	56	M	1KHz, 0.25V	0.324	0.170
PDRH0303□T680	68	M	1KHz, 0.25V	0.472	0.156
PDRH0303□T820	82	M	1KHz, 0.25V	0.539	0.142
PDRH0303□T101	100	M	1KHz, 0.25V	0.608	0.128
PDRH0303□T121	120	M	1KHz, 0.25V	0.757	0.116
PDRH0303□T151	150	M	1KHz, 0.25V	0.882	0.106
PDRH0303□T181	180	M	1KHz, 0.25V	1.130	0.095
PDRH0303□T221	220	M	1KHz, 0.25V	1.269	0.087
PDRH0303□T271	270	M	1KHz, 0.25V	1.570	0.080
PDRH0303□T331	330	M	1KHz, 0.25V	1.930	0.078
PDRH0303□T391	390	M	1KHz, 0.25V	2.360	0.073
PDRH0303□T471	470	M	1KHz, 0.25V	2.770	0.068
PDRH0303□T561	560	M	1KHz, 0.25V	3.520	0.065
PDRH0303□T681	680	M	1KHz, 0.25V	4.250	0.056
PDRH0303□T821	820	M	1KHz, 0.25V	4.830	0.050
PDRH0303□T102	1000	M	1KHz, 0.25V	6.260	0.047
PDRH0303□T122	1200	M	1KHz, 0.25V	7.860	0.043
PDRH0303□T152	1522	M	1KHz, 0.25V	9.980	0.039
PDRH0303□T182	1800	M	1KHz, 0.25V	12.17	0.036
PDRH0303□T272	2700	M	1KHz, 0.25V	16.12	0.029
PDRH0303□T332	3300	M	1KHz, 0.25V	38.00	0.026

■Electrical Characteristics

PDRH 0502 Type(□:Tolerance):

Part No	L (μ H)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PDRH0502□TR47	0.47	N	100KHz, 0.25V	0.015	2.33
PDRH0502□T1R0	1.0	N	100KHz, 0.25V	0.024	2.27
PDRH0502□T1R2	1.2	N	100KHz, 0.25V	0.044	2.15
PDRH0502□T1R5	1.5	N	100KHz, 0.25V	0.045	2.00
PDRH0502□T2R0	2.0	N	100KHz, 0.25V	0.046	1.90
PDRH0502□T2R2	2.2	N	100KHz, 0.25V	0.059	1.63
PDRH0502□T3R3	3.3	N	100KHz, 0.25V	0.073	1.34
PDRH0502□T3R5	3.5	N	100KHz, 0.25V	0.073	1.34
PDRH0502□T4R1	4.1	N	100KHz, 0.25V	0.087	1.14
PDRH0502□T4R7	4.7	N	100KHz, 0.25V	0.087	1.14
PDRH0502□T6R8	6.8	N	100KHz, 0.25V	0.105	0.95
PDRH0502□T8R2	8.2	N	100KHz, 0.25V	0.139	0.90
PDRH0502□T100	10	M	1KHz, 0.25V	0.150	0.76
PDRH0502□T150	15	M	1KHz, 0.25V	0.210	0.63
PDRH0502□T180	18	M	1KHz, 0.25V	0.270	0.60
PDRH0502□T220	22	M	1KHz, 0.25V	0.275	0.56
PDRH0502□T270	27	M	1KHz, 0.25V	0.452	0.48
PDRH0502□T330	33	M	1KHz, 0.25V	0.455	0.44
PDRH0502□T470	47	M	1KHz, 0.25V	0.730	0.35
PDRH0502□T680	68	M	1KHz, 0.25V	0.935	0.30
PDRH0502□T820	82	M	1KHz, 0.25V	1.300	0.27
PDRH0502□T101	100	M	1KHz, 0.25V	1.500	0.23
PDRH0502□T121	120	M	1KHz, 0.25V	1.910	0.22
PDRH0502□T151	150	M	1KHz, 0.25V	2.680	0.21
PDRH0502□T181	180	M	1KHz, 0.25V	3.040	0.20
PDRH0502□T221	220	M	1KHz, 0.25V	3.520	0.195
PDRH0502□T271	270	M	1KHz, 0.25V	4.380	0.193
PDRH0502□T331	330	M	1KHz, 0.25V	5.560	0.190
PDRH0502□T391	390	M	1KHz, 0.25V	6.850	0.185
PDRH0502□T471	470	M	1KHz, 0.25V	7.820	0.180
PDRH0502□T821	820	M	1KHz, 0.25V	15.00	0.120

■Electrical Characteristics

PDRH0503 Type(□:Tolerance):

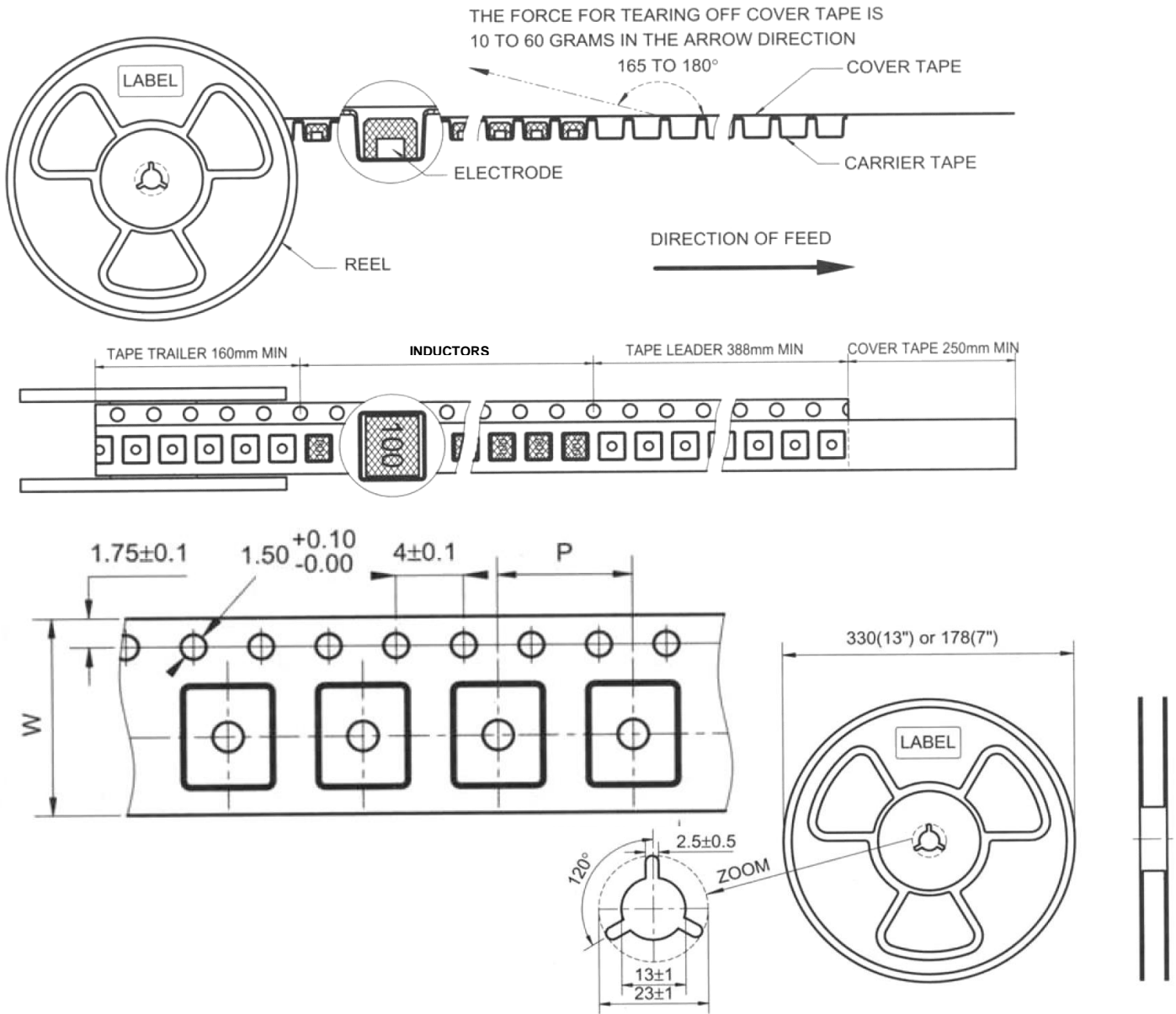
Part No	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PDRH0503□TR47	0.47	N	100KHz, 0.25V	0.010	4.82
PDRH0503□T1R0	1.0	N	100KHz, 0.25V	0.015	4.00
PDRH0503□T1R1	1.1	N	100KHz, 0.25V	0.020	3.87
PDRH0503□T1R2	1.2	N	100KHz, 0.25V	0.022	3.80
PDRH0503□T1R5	1.5	N	100KHz, 0.25V	0.026	3.00
PDRH0503□T2R0	2.0	N	100KHz, 0.25V	0.027	2.92
PDRH0503□T2R2	2.2	N	100KHz, 0.25V	0.029	2.41
PDRH0503□T3R3	3.3	N	100KHz, 0.25V	0.040	1.95
PDRH0503□T3R5	3.5	N	100KHz, 0.25V	0.040	1.95
PDRH0503□T3R9	3.9	N	100KHz, 0.25V	0.042	1.93
PDRH0503□T4R7	4.7	N	100KHz, 0.25V	0.052	1.60
PDRH0503□T5R6	5.6	N	100KHz, 0.25V	0.052	1.60
PDRH0503□T6R2	6.2	N	100KHz, 0.25V	0.062	1.55
PDRH0503□T6R8	6.8	N	100KHz, 0.25V	0.068	1.51
PDRH0503□T8R2	8.2	N	100KHz, 0.25V	0.084	1.38
PDRH0503□T100	10	M	1KHz, 0.25V	0.090	1.33
PDRH0503□T120	12	M	1KHz, 0.25V	0.120	1.06
PDRH0503□T150	15	M	1KHz, 0.25V	0.142	1.05
PDRH0503□T180	18	M	1KHz, 0.25V	0.192	0.90
PDRH0503□T220	22	M	1KHz, 0.25V	0.208	0.86
PDRH0503□T270	27	M	1KHz, 0.25V	0.222	0.75
PDRH0503□T330	33	M	1KHz, 0.25V	0.257	0.72
PDRH0503□T390	39	M	1KHz, 0.25V	0.320	0.64
PDRH0503□T470	47	M	1KHz, 0.25V	0.352	0.62
PDRH0503□T560	56	M	1KHz, 0.25V	0.459	0.53
PDRH0503□T680	68	M	1KHz, 0.25V	0.525	0.51
PDRH0503□T820	82	M	1KHz, 0.25V	0.770	0.48
PDRH0503□T101	100	M	1KHz, 0.25V	0.801	0.43
PDRH0503□T121	120	M	1KHz, 0.25V	0.850	0.34
PDRH0503□T151	150	M	1KHz, 0.25V	1.100	0.26
PDRH0503□T181	180	M	1KHz, 0.25V	1.190	0.24
PDRH0503□T221	220	M	1KHz, 0.25V	1.530	0.20
PDRH0503□T331	330	M	1KHz, 0.25V	2.030	0.19
PDRH0503□T391	390	M	1KHz, 0.25V	3.000	0.16
PDRH0503□T471	470	M	1KHz, 0.25V	3.500	0.15
PDRH0503□T561	560	M	1KHz, 0.25V	4.080	0.14
PDRH0503□T122	1200	M	1KHz, 0.25V	8.500	0.070
PDRH0503□T152	1522	M	1KHz, 0.25V	10.00	0.065
PDRH0503□T182	1800	M	1KHz, 0.25V	13.15	0.062
PDRH0503□T222	2200	M	1KHz, 0.25V	19.00	0.050
PDRH0503□T252	2500	M	1KHz, 0.25V	20.00	0.045

■Electrical Characteristics

PDRH0603 Type(□:Tolerance):

Part No	L (μH)	Tolerance	Test Condition	DCR (Ω) max.	IDC (A) max.
PDRH0603□TR82	0.82	N	100KHz, 0.25V	0.013	4.80
PDRH0603□T1R0	1.0	N	100KHz, 0.25V	0.014	4.70
PDRH0603□T1R2	1.2	N	100KHz, 0.25V	0.016	3.90
PDRH0603□T1R5	1.5	N	100KHz, 0.25V	0.018	3.52
PDRH0603□T1R8	1.8	N	100KHz, 0.25V	0.019	3.25
PDRH0603□T2R0	2.0	N	100KHz, 0.25V	0.022	2.95
PDRH0603□T2R2	2.2	N	100KHz, 0.25V	0.022	2.95
PDRH0603□T2R5	2.5	N	100KHz, 0.25V	0.024	2.75
PDRH0603□T3R0	3.0	N	100KHz, 0.25V	0.027	2.55
PDRH0603□T3R3	3.3	N	100KHz, 0.25V	0.030	2.45
PDRH0603□T3R9	3.9	N	100KHz, 0.25V	0.034	2.35
PDRH0603□T4R7	4.7	N	100KHz, 0.25V	0.042	2.25
PDRH0603□T5R6	5.6	N	100KHz, 0.25V	0.048	2.05
PDRH0603□T6R8	6.8	N	100KHz, 0.25V	0.054	1.85
PDRH0603□T8R2	8.2	N	100KHz, 0.25V	0.058	1.65
PDRH0603□T100	10	M	1KHz, 0.25V	0.065	1.45
PDRH0603□T120	12	M	1KHz, 0.25V	0.082	1.35
PDRH0603□T150	15	M	1KHz, 0.25V	0.096	1.25
PDRH0603□T180	18	M	1KHz, 0.25V	0.110	1.15
PDRH0603□T220	22	M	1KHz, 0.25V	0.140	0.98
PDRH0603□T270	27	M	1KHz, 0.25V	0.170	0.90
PDRH0603□T330	33	M	1KHz, 0.25V	0.210	0.80
PDRH0603□T390	39	M	1KHz, 0.25V	0.240	0.72
PDRH0603□T470	47	M	1KHz, 0.25V	0.280	0.70
PDRH0603□T560	56	M	1KHz, 0.25V	0.340	0.66
PDRH0603□T680	68	M	1KHz, 0.25V	0.410	0.58
PDRH0603□T820	82	M	1KHz, 0.25V	0.490	0.52
PDRH0603□T101	100	M	1KHz, 0.25V	0.550	0.46
PDRH0603□T121	120	M	1KHz, 0.25V	0.700	0.42
PDRH0603□T151	150	M	1KHz, 0.25V	0.780	0.36
PDRH0603□T181	180	M	1KHz, 0.25V	0.960	0.34
PDRH0603□T221	220	M	1KHz, 0.25V	1.080	0.32
PDRH0603□T271	270	M	1KHz, 0.25V	1.360	0.28
PDRH0603□T331	330	M	1KHz, 0.25V	1.820	0.24
PDRH0603□T391	390	M	1KHz, 0.25V	2.050	0.22
PDRH0603□T471	470	M	1KHz, 0.25V	2.580	0.20
PDRH0603□T561	560	M	1KHz, 0.25V	3.160	0.18
PDRH0603□T681	680	M	1KHz, 0.25V	4.040	0.16
PDRH0603□T821	820	M	1KHz, 0.25V	4.900	0.14
PDRH0603□T102	1000	M	1KHz, 0.25V	6.000	0.13
PDRH0603□T122	1200	M	1KHz, 0.25V	7.600	0.12
PDRH0603□T152	1522	M	1KHz, 0.25V	9.440	0.10
PDRH0603□T182	1800	M	1KHz, 0.25V	11.70	0.098
PDRH0603□T222	2200	M	1KHz, 0.25V	13.40	0.095
PDRH0603□T272	2700	M	1KHz, 0.25V	17.30	0.086
PDRH0603□T332	3300	M	1KHz, 0.25V	22.10	0.078

■Tape and Reel specifications



Unit: mm

Type	Tape size		Parts Per Reel
	W	P	13'
PDRH0302	12	8	3500
PDRH0303	12	8	2500
PDRH0502	12	8	3500
PDRH0503	12	8	2500
PDRH0603	12	8	2000

■ SMT Power Inductor Environmental Specifications

General

Items	Specifications
Shelf Storage conditions	Temperature range: 15~28°C; Humidity: <80% relative humidity. Recommended product should be used within one year from the time of delivery.

Environmental test

Test Items	Specifications	Test Conditions / Test Methods
High temperature Storage test	No case deformation or change in appearance. $\Delta L/L \leq 10\%$	Temperature 85±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
Low temperature Storage test		Temperature -25±2°C, Time: 48±2 hours, Tested after 1hour at room temperature.
Humidity test		Temperature 40±2°C, 90~95% relative humidity Time: 96±2 hours, apply rated current, Tested after 1hour at room temperature.
Thermal shock test		First -25°C 30minutes then 25°C 10 minutes last 85°C 30 minutes, as 1 cycle. Go through 5 cycles. Tested after 1 hour at room temperature.

Mechanical test

Test Items	Specifications	Test Conditions / Test Methods
Solderability test	Terminal area must have 90% minimum solder coverage.	Product with Lead-free terminal: Dip pads in flux then dip in solder pot at 245±5°C for 3 seconds.
Resistance to Soldering Heat	No case deformation or change in appearance.	Flux should cover the whole of the sample before heating, then be preheated for about 2 minutes over temperature of 130~150°C. Immersing to 260±5°C for 10 seconds.
Vibration test	No case deformation or change in appearance.	Apply frequency 10~55Hz. 1.5mm amplitude in each of perpendicular direction for 2 hours.
Shock resistance	$\Delta L/L \leq 10\%$	Drop down with 981m/s ² (100G) shock attitude upon a rubber block method shock testing machine, for 1 time. In each of three orientations.

The condition of reflow (recommendation):

