NPIM Shielded Power Inductors

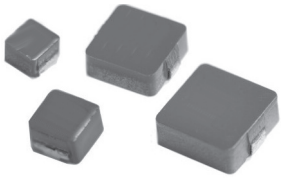
NPIM_W Series

FEATURES

- SHIELDED POWER INDUCTOR
- HIGH OPERATING TEMPERATURE (+180°C)
- AEC-Q200 QUALIFIED
- AUTOMATIC ASSEMBLY
- ROBUST CONSTRUCTION
- LOW PROFILE (2.8 ~ 3.8mm HEIGHTS)
- SURFACE MOUNTABLE CONSTRUCTION
- TAPED AND REELED FOR AUTOMATIC INSERTION

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details

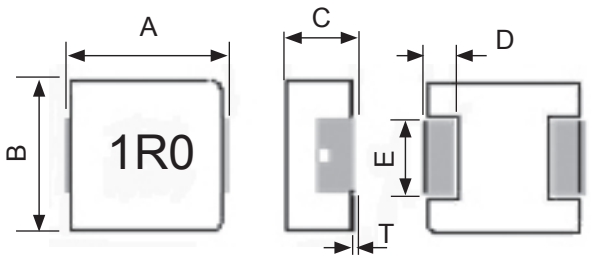


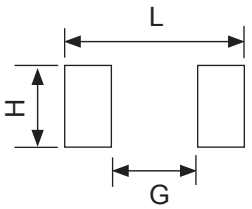
CHARACTERISTICS

Case Size	NPIM74W	NPIM104W
Inductance Range	0.47 ~ 22μH	1.0 ~ 68μH
Ambient Operating Temperature Range	-55°C ~ +180°C (including self-heating)	
Temperatrue Rise at Irms	Maximum +40°C Temperature Rise	
Inductance Change at Isat	Maximum -30% Inductance Drop From Initial Measured Value	
Inductance Tolerance	±10% (K), ±15% (L), ±20% (M), ±25% (N), ±30% (Y)	
Resistance to Solder Heat	+260°C for 10 seconds	

DIMENSIONS (mm)

Series	Component Dimensions						Land Pattern Dimensions		
	A	B	C	D	T	E	L	G	H
NPIM74W	7.1 ± 0.3	6.6 ± 0.2	2.8 ± 0.2	1.6 ± 0.3	0 ~ 0.15	3.0 ± 0.2	8.0	3.7	3.4
NPIM104W	11.0 ± 0.3	10.0 ± 0.3	3.8 ± 0.2	2.0 ± 0.3	0 ~ 0.20	3.0 ± 0.3	12.5	5.4	3.5





PART NUMBER SYSTEM

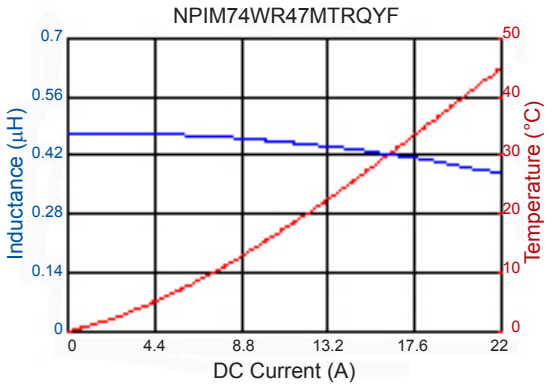
NPIM 74 W 4R7 M TR QY F

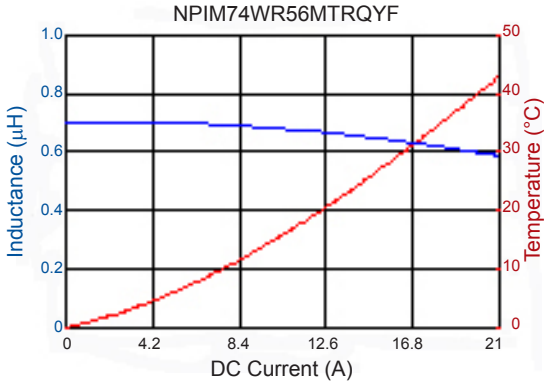
- F — RoHS Compliant
- QY — "QY" denotes AEC Q-200 qualified parts suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site.
- TR — Packaging: TR = Tape & Reel
- M — Inductance Tolerance Code: M=±20%
- 4R7 — Inductance Code (μH): 1st two digits are significant, 3rd digit is multiplier.
- W — Construction Code (see drawing for details)
- 74 — Size Code (see table for details)
- NPIM — Series

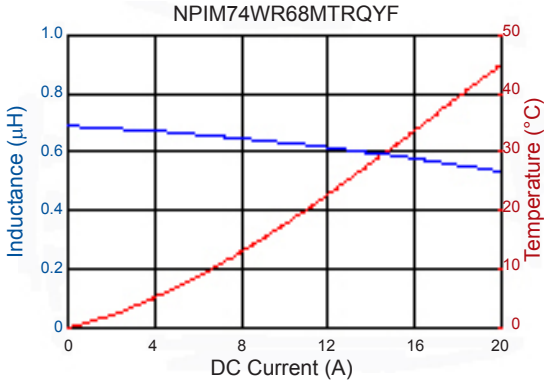
NPIM74W

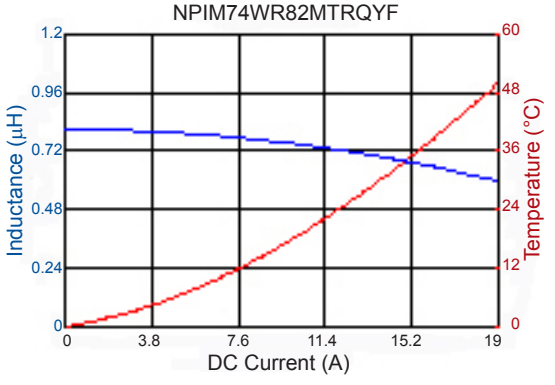
Series	Standard Values - Case Size 73 (7.1 × 6.6 × 2.8mm)							
	Inductance (µH)	Test Conditions	DCR (mΩ)		Irms (Amps)		Isat (Amps)	
			Typ.	Max.	Typ.	Max.	Typ.	Max.
NPIM74WR47MTRQYF	0.47 ± 20%	100KHz, 1V	3.5	4.0	18	20	21	18
NPIM74WR56MTRQYF	0.56 ± 20%		4.2	4.8	19	17	20	17
NPIM74WR68MTRQYF	0.68 ± 20%		4.8	5.6	17	15.5	19	16.5
NPIM74WR82MTRQYF	0.82 ± 20%		5.7	6.8	16	14	18	16
NPIM74W1R0MTRQYF	1.0 ± 20%		6.6	8.0	15	13	16	14
NPIM74W1R5MTRQYF	1.5 ± 20%		11.2	13.2	13	11	14	12
NPIM74W2R2MTRQYF	2.2 ± 20%		13.7	15.8	11	9.0	13	11
NPIM74W3R3MTRQYF	3.3 ± 20%		21.5	25.8	9.0	7.3	9.5	8.3
NPIM74W4R7MTRQYF	4.7 ± 20%		32	37	7.0	6.0	8.5	7.0
NPIM74W5R6MTRQYF	5.6 ± 20%		36	42	6.5	5.5	7.2	6.0
NPIM74W6R8MTRQYF	6.8 ± 20%		43	50	6.0	5.0	6.5	5.5
NPIM74W100MTRQYF	10 ± 20%		62	68	5.0	4.2	5.0	4.2
NPIM74W150MTRQYF	15 ± 20%		95	114	4.1	3.5	3.2	2.8
NPIM74W220MTRQYF	22 ± 20%		140	168	3.4	2.8	3.0	2.6

Maximum +40°C temperature rise at IDC. Maximum -30% inductance drop from initial measured value at Isat.









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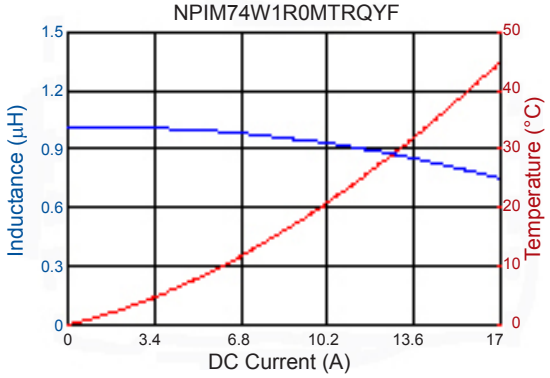

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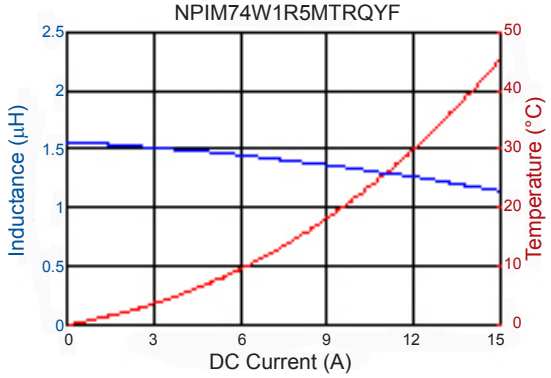

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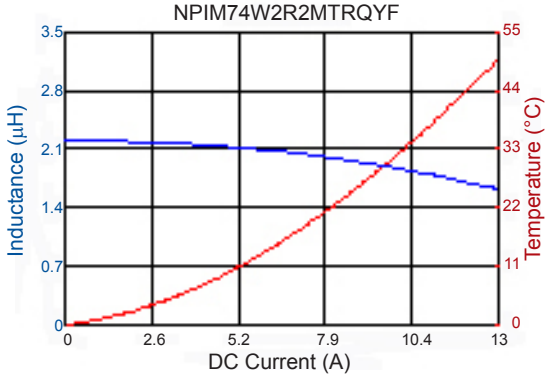

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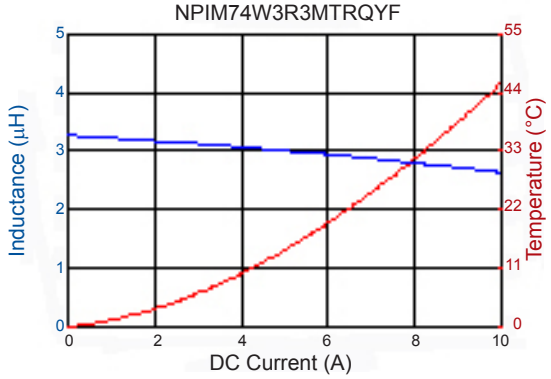

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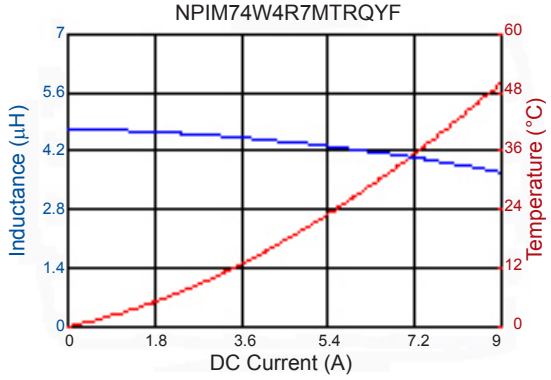

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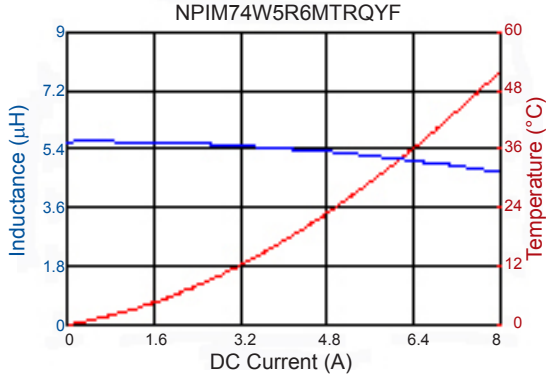

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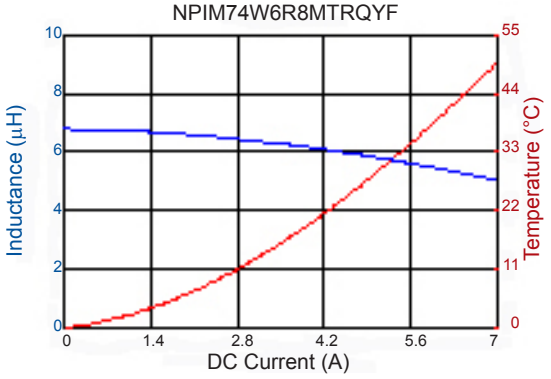

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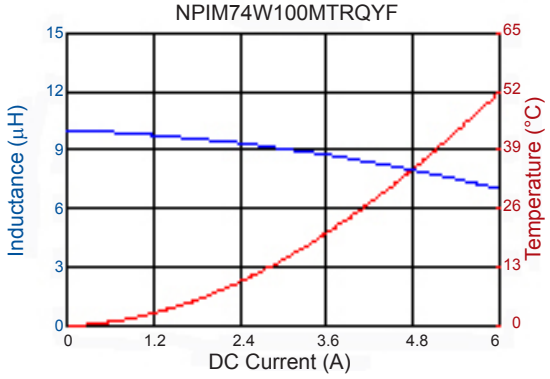
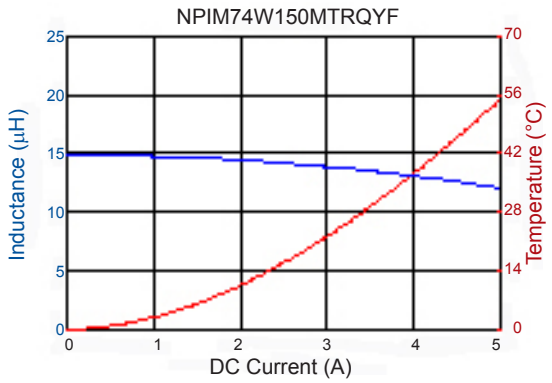
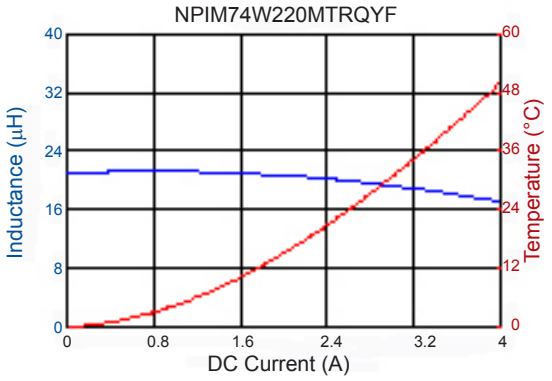


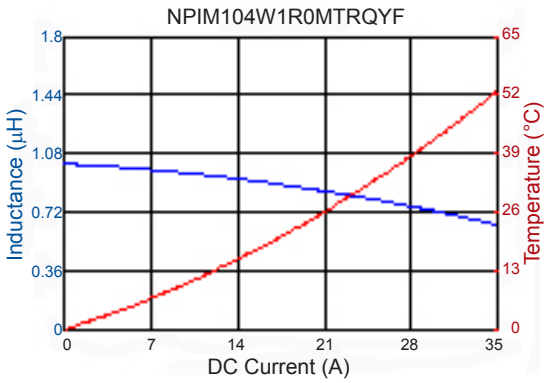


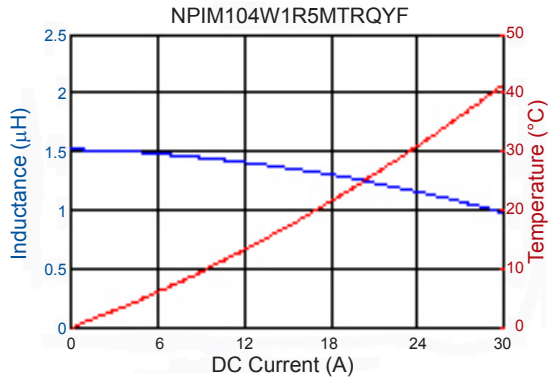


NPIM104W

Series	Standard Values - Case Size 104 (11.0 × 10.0 × 3.8mm)							
	Inductance (µH)	Test Conditions	DCR (mΩ)		Irms (Amps)		Isat (Amps)	
			Typ.	Max.	Typ.	Max.	Typ.	Max.
NPIM104W1R0MTRQYF	1.0 ± 20%	100KHz, 1V	2.8	3.07	27	24	29	26
NPIM104W1R5MTRQYF	1.5 ± 20%		4.2	4.5	22	19	27	24
NPIM104W2R2MTRQYF	2.2 ± 20%		6.5	7.2	18	15	21	18
NPIM104W3R3MTRQYF	3.3 ± 20%		10.2	11.8	15	12	18	16
NPIM104W4R7MTRQYF	4.7 ± 20%		14.3	15.3	13	10	15	13
NPIM104W5R6MTRQYF	5.6± 20%		15.5	17.5	12	9.6	13	11
NPIM104W6R8MTRQYF	6.8 ± 20%		20.2	22.3	10.5	9.0	11	10
NPIM104W100MTRQYF	10 ± 20%		29.3	33	8.0	7.0	9.0	8.0
NPIM104W150MTRQYF	15 ± 20%		45	50	7.0	6.0	7.6	6.5
NPIM104W220MTRQYF	22 ± 20%		64	72	6.0	5.0	6.5	5.7
NPIM104W330MTRQYF	33 ± 20%		110	117.7	5.0	4.2	5.3	4.5
NPIM104W470MTRQYF	47 ± 20%		145	167	4.0	3.4	4.5	4.0
NPIM104W680MTRQYF	68 ± 20%		210	240	3.5	3.0	3.5	2.8

Maximum +40°C temperature rise at IDC. Maximum -30% inductance drop from initial measured value at Isat.





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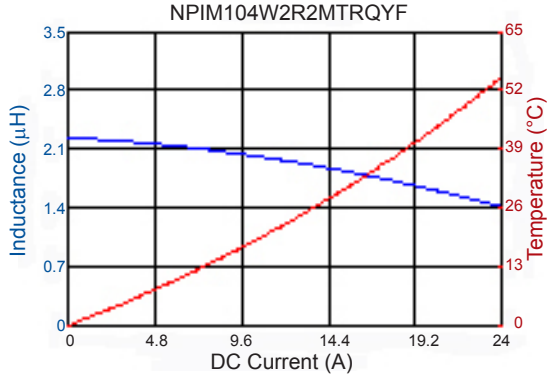

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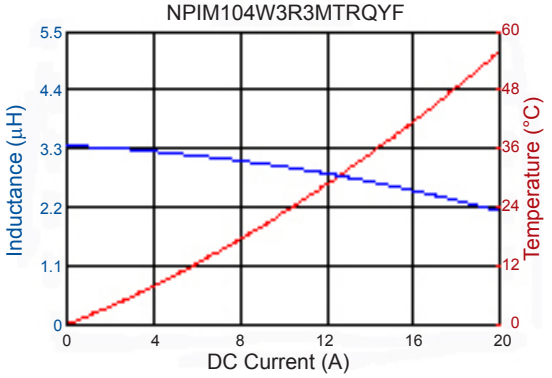

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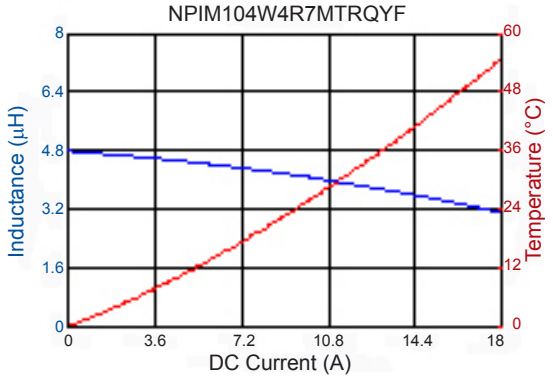

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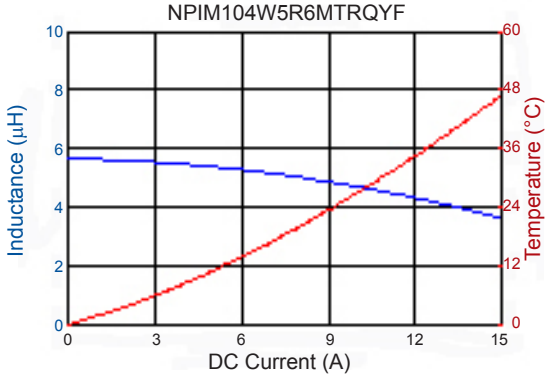

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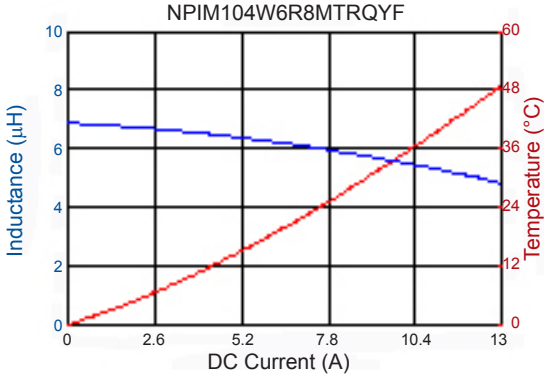

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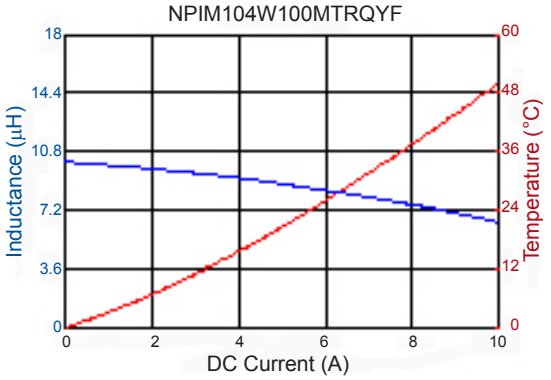

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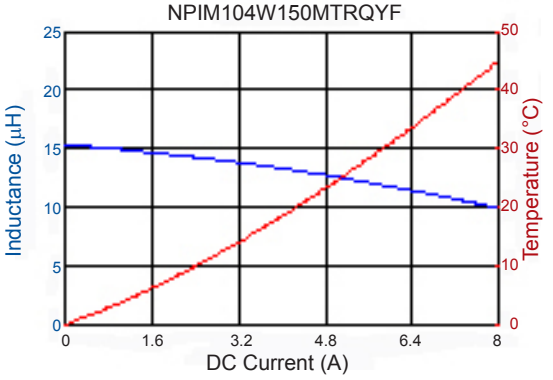

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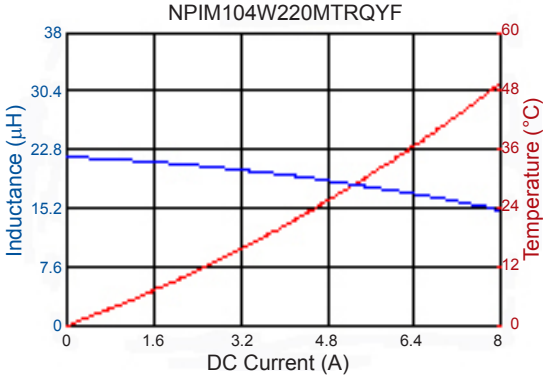
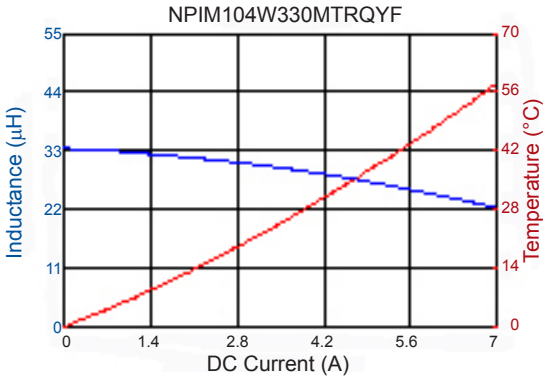
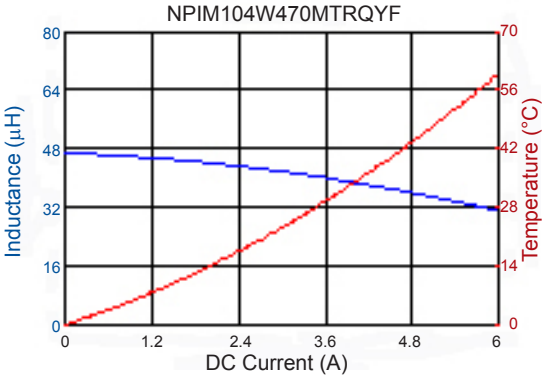



NPIM104W330MTRQYF
Inductance (µH)
Temperature (°C)
DC Current (A)
55
44
33
22
11
0
70
56
42
28
14
0
0
1.4
2.8
4.2
5.6
7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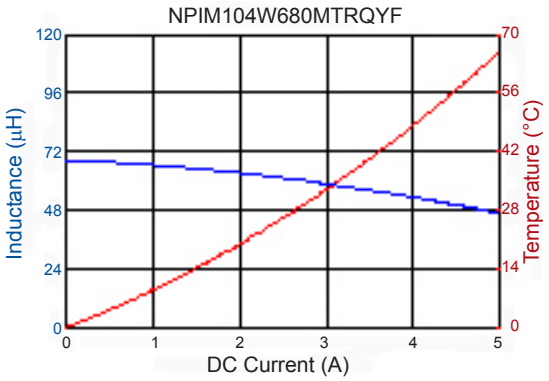
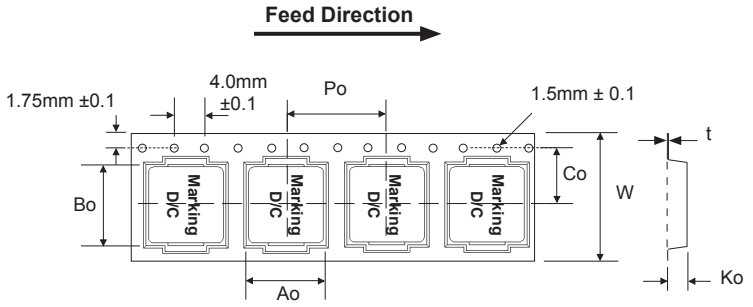
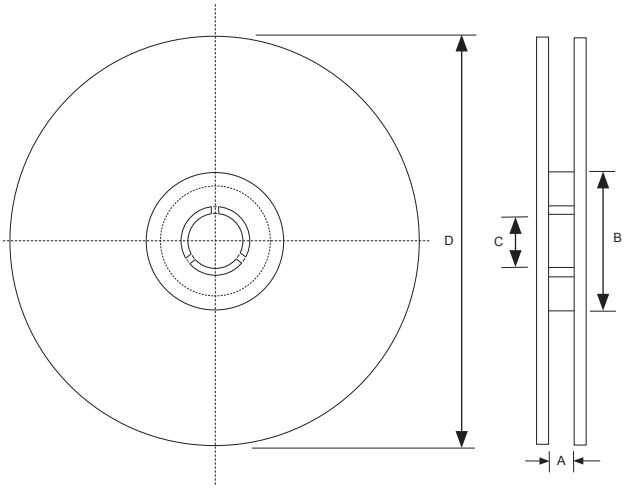
Inductance (µH)
Temperature (°C)
DC Current (A)
80
64
48
32
16
0
70
56
42
28
14
0
0
1.2
2.4
3.6
4.8
6


NPIM104W680MTRQYF
Inductance (µH)
Temperature (°C)
DC Current (A)
120
96
72
48
24
0
70
56
42
28
14
0
0
1
2
3
4
5

<table>
<tr><th>Item</th><th>Performance</th><th>Test Conditions</th></tr>
<tr><td>Mechanical Shock</td><td rowspan="2">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</td><td>
<table>
<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>
<tr><td>SMD</td><td>100</td><td>6</td><td>Half-sine</td><td>12.3</td></tr>
<tr><td>Lead</td><td>100</td><td>6</td><td>Half-sine</td><td>12.3</td></tr>
</table>
Shocks in each direction along 3 perpendicular axis
</td></tr>
<tr><td>Vibration</td><td>Oscillation Frequency: 10~2K~10Hz for 20 minute
Equipment: Vibration checker
Total Amplitude:1.52mm±10%
Testing Time: 12 hours (20 minutes, 12 cycles each of 3 orientations)</td></tr>
</table>

Case Size	CARRIER TAPING DIMENSIONS (mm) AND REEL QUANTITY							
	Ao	Bo	Ko	Co	W	Po	t	Quantity
NPIM74W	7.0 ± 0.1	7.7 ± 0.1	3.3 ± 0.1	7.5 ± 0.1	16.0 ± 0.3	12.0 ± 0.1	0.35 ± 0.05	1,000
NPIM104W	10.4 ± 0.1	11.6 ± 0.1	4.5 ± 0.1	11.5 ± 0.1	24.0 ± 0.3	16.0 ± 0.1	0.35 ± 0.05	500





Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
NPIM74W	16.4 +2.0/-0	100 ± 2.0	13.5 +0.5/-0.2	330 ± 3.0
NPIM104W	24.4 +2.0/-0			

REFLOW SOLDERING PROFILE