

### FEATURES

- SHIELDED POWER INDUCTOR
- MOLDED METAL COMPOSITE CONSTRUCTION
- HIGH SATURATION CURRENT CHARACTERISTICS (~ 118A)
- LOW PROFILE (1.2mm ~ 4.7mm)
- MEETS THE REQUIREMENTS OF AEC-Q200

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details

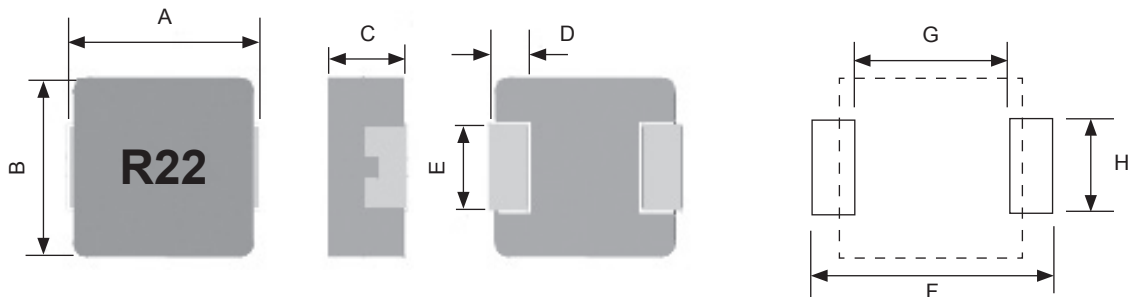


### CHARACTERISTICS

Case Code	32	42	74	104	145	146
Inductance Range (μH)	0.1 ~ 10	0.1 ~ 22	0.1 ~ 47	0.15 ~ 68	1.0 ~ 220	0.15 ~ 47
Ambient Operating Temperature Range	-55°C ~ +125°C					
Maximum Component Temperature (Ambient + Self-Heating)	+125°C					
Temperature Rise at Irms	+40°C					
Inductance Change at Isat	-20%					
Inductance Tolerance	See Specifications Tables					
Resistance to Solder Heat	260°C ±5°C for 10 seconds					

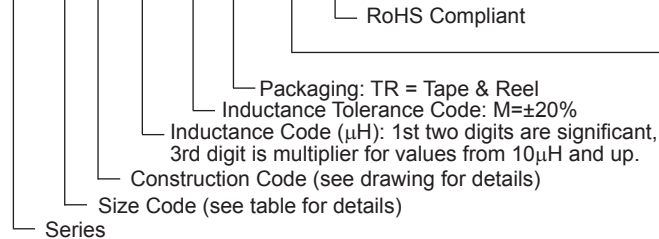
### DIMENSIONS (mm)

Series	A	B	C	D	E	F	G	H
NPIM32PA	3.50±0.20	3.20±0.20	1.80±0.20	0.70±0.20	1.20±0.20	4.10	1.90	1.45
NPIM42PA	4.45±0.25	4.06±0.25	1.80±0.20	0.76±0.30	2.00±0.20	5.20	2.20	2.40
NPIM74PA	7.30±0.30	6.60±0.30	2.80±0.20	1.80±0.30	3.00±0.30	8.40	2.50	3.50
NPIM104PA	11.00±0.50	10.00±0.30	3.80±0.20	2.30±0.30	3.00±0.30	13.60	5.40	3.50
NPIM145PA	13.50±0.50	12.50±0.30	5.70±0.30	2.30±0.30	4.70±0.30	14.20	8.00	5.00
NPIM146PA	13.50±0.50	12.50±0.30	6.20±0.30	2.30±0.30	4.70±0.30	14.20	8.00	5.00



### PART NUMBER SYSTEM

NPIM -- PA4R7 M TR QY F



"QY" denotes suitable for automotive equipment, sourced to special production and inspection at TS-16949 certified production site



Part Number	STANDARD VALUES - CASE SIZE 32PA ( 3.5 X 3.2 X 1.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM32PAR10YTRQYF	0.10	±30%	9.0	14.0	10.5	100KHz/1.0V
NPIM32PAR22YTRQYF	0.22	±30%	14.0	11.2	9.0	100KHz/1.0V
NPIM32PAR33MTRQYF	0.33	±20%	21.0	10.0	8.0	100KHz/1.0V
NPIM32PAR47MTRQYF	0.47	±20%	23.0	9.0	7.0	100KHz/1.0V
NPIM32PAR68MTRQYF	0.68	±20%	29.0	7.0	5.5	100KHz/1.0V
NPIM32PA1R0MTRQYF	1.0	±20%	38.0	5.0	4.0	100KHz/1.0V
NPIM32PA1R5MTRQYF	1.5	±20%	50.0	4.0	3.8	100KHz/1.0V
NPIM32PA2R2MTRQYF	2.2	±20%	75.0	3.7	3.5	100KHz/1.0V
NPIM32PA3R3MTRQYF	3.3	±20%	145.0	3.5	3.0	100KHz/1.0V
NPIM32PA4R7MTRQYF	4.7	±20%	200.0	3.0	2.6	100KHz/1.0V
NPIM32PA5R6MTRQYF	5.6	±20%	238.0	2.6	2.2	100KHz/1.0V
NPIM32PA6R8MTRQYF	6.8	±20%	300.0	2.2	1.9	100KHz/1.0V
NPIM32PA8R2MTRQYF	8.2	±20%	390.0	1.9	1.6	100KHz/1.0V
NPIM32PA100MTRQYF	10	±20%	422.0	1.6	1.4	100KHz/1.0V

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 42PA ( 4.45 X 4.06 X 1.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM42PAR10YTRQYF	0.10	±30%	4.0	35.0	12.0	100KHz/1.0V
NPIM42PAR18YTRQYF	0.18	±30%	5.4	28.0	13.5	100KHz/1.0V
NPIM42PAR22YTRQYF	0.22	±30%	7.3	24.0	13.0	100KHz/1.0V
NPIM42PAR33MTRQYF	0.33	±20%	8.6	18.0	10.0	100KHz/1.0V
NPIM42PAR47MTRQYF	0.47	±20%	14.0	12.0	8.0	100KHz/1.0V
NPIM42PAR56MTRQYF	0.56	±20%	16.0	10.0	7.3	100KHz/1.0V
NPIM42PAR68MTRQYF	0.68	±20%	19.0	10.0	7.0	100KHz/1.0V
NPIM42PA1R0MTRQYF	1.0	±20%	27.0	8.5	5.0	100KHz/1.0V
NPIM42PA1R2MTRQYF	1.2	±20%	30.0	7.8	4.8	100KHz/1.0V
NPIM42PA1R5MTRQYF	1.5	±20%	42.0	7.0	4.5	100KHz/1.0V
NPIM42PA2R2MTRQYF	2.2	±20%	61.0	6.0	4.0	100KHz/1.0V
NPIM42PA3R3MTRQYF	3.3	±20%	76.0	4.0	3.5	100KHz/1.0V
NPIM42PA4R7MTRQYF	4.7	±20%	105.0	3.5	2.6	100KHz/1.0V
NPIM42PA5R6MTRQYF	5.6	±20%	125.0	3.0	2.2	100KHz/1.0V
NPIM42PA6R8MTRQYF	6.8	±20%	172.0	2.8	2.1	100KHz/1.0V
NPIM42PA8R2MTRQYF	8.2	±20%	180.0	2.5	2.0	100KHz/1.0V
NPIM42PA100MTRQYF	10	±20%	243.0	2.3	1.8	100KHz/1.0V
NPIM42PA150MTRQYF	15	±20%	374.0	1.9	1.5	100KHz/1.0V
NPIM42PA220MTRQYF	22	±20%	500.0	1.4	1.2	100KHz/1.0V

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.



Part Number	STANDARD VALUES - CASE SIZE 74PA ( 7.3 X 6.6 X 2.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM74PAR10YTRQYF	0.10	±30%	1.7	60.0	32.5	100KHz/1.0V
NPIM74PAR15YTRQYF	0.15	±30%	1.9	45.0	27.0	100KHz/1.0V
NPIM74PAR16YTRQYF	0.16	±30%	1.9	45.0	27.0	100KHz/1.0V
NPIM74PAR20YTRQYF	0.20	±30%	2.5	41.0	24.0	100KHz/1.0V
NPIM74PAR22YTRQYF	0.22	±30%	2.8	40.0	23.0	100KHz/1.0V
NPIM74PAR33MTRQYF	0.33	±20%	3.9	32.0	20.0	100KHz/1.0V
NPIM74PAR36MTRQYF	0.36	±20%	4.2	32.0	19.0	100KHz/1.0V
NPIM74PAR47MTRQYF	0.47	±20%	4.2	26.0	17.5	100KHz/1.0V
NPIM74PAR56MTRQYF	0.56	±20%	5.0	25.5	16.5	100KHz/1.0V
NPIM74PAR60MTRQYF	0.60	±20%	5.2	25.5	16.0	100KHz/1.0V
NPIM74PAR68MTRQYF	0.68	±20%	5.5	25.0	15.5	100KHz/1.0V
NPIM74PAR75MTRQYF	0.75	±20%	6.6	24.5	14.5	100KHz/1.0V
NPIM74PAR82MTRQYF	0.82	±20%	8.0	24.0	13.0	100KHz/1.0V
NPIM74PA1R0MTRQYF	1.0	±20%	10.0	22.0	11.0	100KHz/1.0V
NPIM74PA1R2MTRQYF	1.2	±20%	12.0	20.0	10.0	100KHz/1.0V
NPIM74PA1R5MTRQYF	1.5	±20%	15.0	18.0	9.0	100KHz/1.0V
NPIM74PA1R8MTRQYF	1.8	±20%	17.0	16.0	8.5	100KHz/1.0V
NPIM74PA2R0MTRQYF	2.0	±20%	19.0	15.0	8.2	100KHz/1.0V
NPIM74PA2R2MTRQYF	2.2	±20%	20.0	14.0	8.0	100KHz/1.0V
NPIM74PA2R5MTRQYF	2.5	±20%	22.0	13.0	7.0	100KHz/1.0V
NPIM74PA3R3MTRQYF	3.3	±20%	30.0	13.5	6.0	100KHz/1.0V
NPIM74PA4R7MTRQYF	4.7	±20%	40.0	10.0	5.5	100KHz/1.0V
NPIM74PA5R6MTRQYF	5.6	±20%	48.0	9.0	5.0	100KHz/1.0V
NPIM74PA6R8MTRQYF	6.8	±20%	60.0	8.0	4.5	100KHz/1.0V
NPIM74PA8R2MTRQYF	8.2	±20%	68.0	7.5	4.0	100KHz/1.0V
NPIM74PA100MTRQYF	10	±20%	85.0	6.0	3.5	100KHz/1.0V
NPIM74PA220MTRQYF	22	±20%	190.0	3.5	2.0	100KHz/1.0V
NPIM74PA470MTRQYF	47	±20%	363.0	2.0	1.75	100KHz/1.0V

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.



Part Number	STANDARD VALUES - CASE SIZE 104PA (11.0 X 10.0 X 3.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM104PAR15MTRQYF	0.15	±20%	0.6	75.0	43.0	100KHz/1.0V
NPIM104PAR22MTRQYF	0.22	±20%	1.0	60.0	35.0	100KHz/1.0V
NPIM104PAR27MTRQYF	0.27	±20%	1.0	60.0	33.0	100KHz/1.0V
NPIM104PAR30MTRQYF	0.30	±20%	1.1	60.0	32.0	100KHz/1.0V
NPIM104PAR36MTRQYF	0.36	±20%	1.2	60.0	31.0	100KHz/1.0V
NPIM104PAR39MTRQYF	0.39	±20%	1.3	60.0	30.0	100KHz/1.0V
NPIM104PAR45MTRQYF	0.45	±20%	1.5	45.0	29.0	100KHz/1.0V
NPIM104PAR47MTRQYF	0.47	±20%	1.5	43.0	28.0	100KHz/1.0V
NPIM104PAR56MTRQYF	0.56	±20%	1.8	40.0	25.0	100KHz/1.0V
NPIM104PAR68MTRQYF	0.68	±20%	2.7	39.0	22.0	100KHz/1.0V
NPIM104PA1R0MTRQYF	1.0	±20%	3.3	36.0	18.0	100KHz/1.0V
NPIM104PA1R5MTRQYF	1.5	±20%	4.6	33.0	16.0	100KHz/1.0V
NPIM104PA2R2MTRQYF	2.2	±20%	7.0	27.0	12.0	100KHz/1.0V
NPIM104PA2R5MTRQYF	2.5	±20%	8.7	23.0	11.5	100KHz/1.0V
NPIM104PA3R3MTRQYF	3.3	±20%	11.8	20.0	11.0	100KHz/1.0V
NPIM104PA4R0MTRQYF	4.0	±20%	15.0	18.0	10.2	100KHz/1.0V
NPIM104PA4R7MTRQYF	4.7	±20%	15.5	17.0	10.0	100KHz/1.0V
NPIM104PA5R6MTRQYF	5.6	±20%	19.3	14.0	9.0	100KHz/1.0V
NPIM104PA6R8MTRQYF	6.8	±20%	23.3	13.5	8.5	100KHz/1.0V
NPIM104PA8R2MTRQYF	8.2	±20%	22.5	12.5	8.0	100KHz/1.0V
NPIM104PA100MTRQYF	10	±20%	30.0	12.0	7.5	100KHz/1.0V
NPIM104PA150MTRQYF	15	±20%	45.0	10.0	6.25	100KHz/1.0V
NPIM104PA220MTRQYF	22	±20%	74.0	7.0	5.0	100KHz/1.0V
NPIM104PA270MTRQYF	27	±20%	100.0	6.0	4.0	100KHz/1.0V
NPIM104PA330MTRQYF	33	±20%	112.0	5.0	3.5	100KHz/1.0V
NPIM104PA470MTRQYF	47	±20%	167.0	4.5	3.0	100KHz/1.0V
NPIM104PA680MTRQYF	68	±20%	240.0	3.0	2.0	100KHz/1.0V

Maximum +40°C temperature rise at Irms. Approximate -30% inductance change at Isat.



Part Number	STANDARD VALUES - CASE SIZE 145PA (13.5 X 12.5 X 5.7mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM145PA1R0MTRQYF	1.0	±20%	2.4	45.0	29.0	100KHz/1.0V
NPIM145PA1R2MTRQYF	1.2	±20%	2.8	44.0	28.0	100KHz/1.0V
NPIM145PA1R5MTRQYF	1.5	±20%	3.2	43.0	26.0	100KHz/1.0V
NPIM145PA2R2MTRQYF	2.2	±20%	4.7	34.0	21.0	100KHz/1.0V
NPIM145PA3R3MTRQYF	3.3	±20%	7.1	28.0	17.0	100KHz/1.0V
NPIM145PA4R7MTRQYF	4.7	±20%	11.5	25.0	16.0	100KHz/1.0V
NPIM145PA5R6MTRQYF	5.6	±20%	12.6	22.0	15.5	100KHz/1.0V
NPIM145PA6R8MTRQYF	6.8	±20%	13.8	19.0	15.0	100KHz/1.0V
NPIM145PA8R2MTRQYF	8.2	±20%	16.0	17.0	11.0	100KHz/1.0V
NPIM145PA100MTRQYF	10	±20%	20.7	15.5	11.0	100KHz/1.0V
NPIM145PA120MTRQYF	12	±20%	23.0	13.5	9.5	100KHz/1.0V
NPIM145PA150MTRQYF	15	±20%	29.0	13.0	9.0	100KHz/1.0V
NPIM145PA180MTRQYF	18	±20%	35.0	12.0	8.5	100KHz/1.0V
NPIM145PA220MTRQYF	22	±20%	39.5	11.0	8.0	100KHz/1.0V
NPIM145PA270MTRQYF	27	±20%	56.0	9.0	7.0	100KHz/1.0V
NPIM145PA330MTRQYF	33	±20%	75.0	8.0	6.0	100KHz/1.0V
NPIM145PA470MTRQYF	47	±20%	90.0	7.0	5.5	100KHz/1.0V
NPIM145PA560MTRQYF	56	±20%	118.0	6.5	5.3	100KHz/1.0V
NPIM145PA680MTRQYF	68	±20%	140.0	6.0	5.0	100KHz/1.0V
NPIM145PA820MTRQYF	82	±20%	161.0	5.5	4.5	100KHz/1.0V
NPIM145PA101MTRQYF	100	±20%	200.0	5.0	4.0	100KHz/1.0V
NPIM145PA121MTRQYF	120	±20%	235.0	4.5	3.5	100KHz/1.0V
NPIM145PA151MTRQYF	150	±20%	350.0	4.0	3.0	100KHz/1.0V
NPIM145PA221MTRQYF	220	±20%	550.0	3.0	2.0	100KHz/1.0V

Maximum +40°C temperature rise at Irms. Approximate -20% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 146PA (13.5 X 12.5 X 6.2mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ)	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM146PAR15MTRQYF	0.15	±20%	0.6	118.0	55.0	100KHz/1.0V
NPIM146PAR22MTRQYF	0.22	±20%	0.6	112.0	53.0	100KHz/1.0V
NPIM146PAR30MTRQYF	0.30	±20%	0.72	72.0	48.0	100KHz/1.0V
NPIM146PAR33MTRQYF	0.33	±20%	0.8	68.0	46.0	100KHz/1.0V
NPIM146PAR36MTRQYF	0.36	±20%	0.9	66.0	45.0	100KHz/1.0V
NPIM146PAR40MTRQYF	0.40	±20%	1.0	64.0	44.0	100KHz/1.0V
NPIM146PAR47MTRQYF	0.47	±20%	1.2	63.0	41.0	100KHz/1.0V
NPIM146PAR50MTRQYF	0.50	±20%	1.25	60.0	40.0	100KHz/1.0V
NPIM146PAR56MTRQYF	0.56	±20%	1.2	58.0	37.0	100KHz/1.0V
NPIM146PAR68MTRQYF	0.68	±20%	1.5	55.0	35.0	100KHz/1.0V
NPIM146PAR82MTRQYF	0.82	±20%	1.9	50.0	33.0	100KHz/1.0V
NPIM146PA1R0MTRQYF	1.0	±20%	2.3	48.0	30.0	100KHz/1.0V
NPIM146PA1R5MTRQYF	1.5	±20%	3.0	45.0	27.0	100KHz/1.0V
NPIM146PA1R8MTRQYF	1.8	±20%	4.0	40.0	24.0	100KHz/1.0V
NPIM146PA2R2MTRQYF	2.2	±20%	4.2	37.0	22.0	100KHz/1.0V
NPIM146PA3R3MTRQYF	3.3	±20%	6.8	30.0	18.0	100KHz/1.0V
NPIM146PA4R7MTRQYF	4.7	±20%	8.4	28.0	13.5	100KHz/1.0V
NPIM146PA5R6MTRQYF	5.6	±20%	10.0	23.0	12.5	100KHz/1.0V
NPIM146PA6R8MTRQYF	6.8	±20%	11.5	18.0	11.5	100KHz/1.0V
NPIM146PA8R2MTRQYF	8.2	±20%	15.5	16.0	10.5	100KHz/1.0V
NPIM146PA100MTRQYF	10	±20%	16.5	15.5	10.0	100KHz/1.0V
NPIM146PA130MTRQYF	13	±20%	24.0	13.0	9.0	100KHz/1.0V
NPIM146PA150MTRQYF	15	±20%	28.0	12.5	9.0	100KHz/1.0V
NPIM146PA220MTRQYF	22	±20%	37.0	12.0	9.0	100KHz/1.0V
NPIM146PA330MTRQYF	33	±20%	58.0	11.0	8.0	100KHz/1.0V
NPIM146PA470MTRQYF	47	±20%	90.0	9.5	6.5	100KHz/1.0V

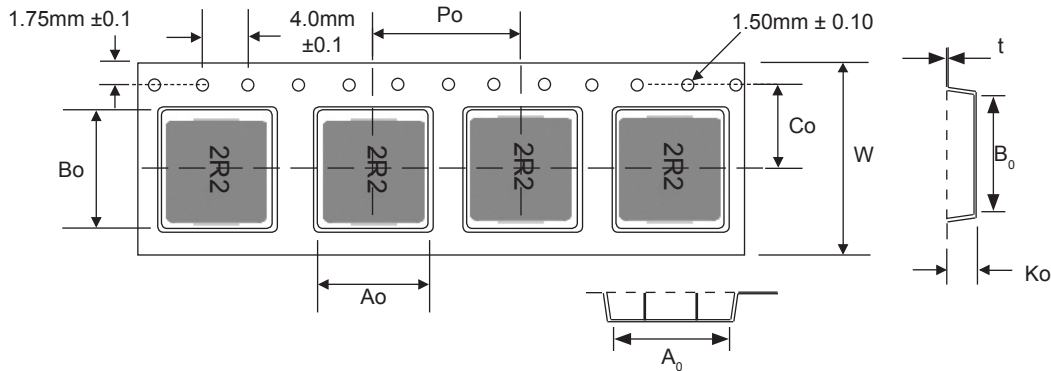
Maximum +40°C temperature rise at Irms. Approximate -20% inductance change at Isat.



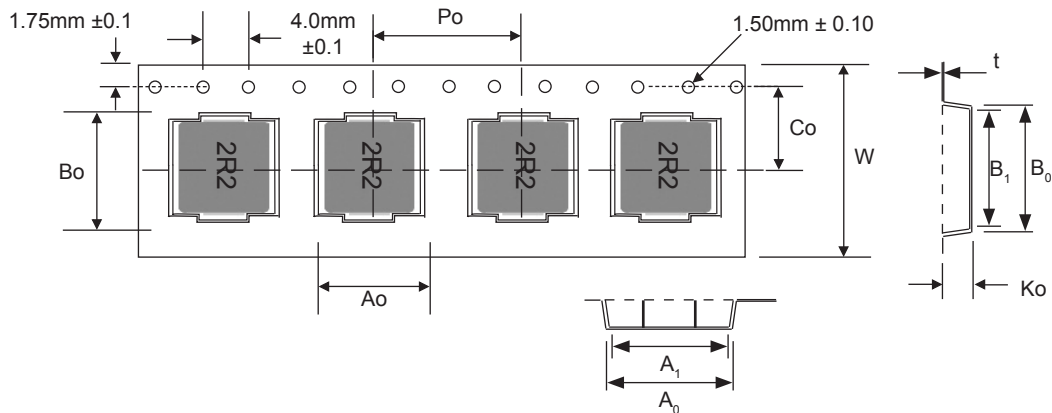
## CARRIER TAPE DIMENSIONS (mm)

Series	B <sub>0</sub>	B <sub>1</sub>	A <sub>0</sub>	A <sub>1</sub>	K <sub>0</sub>	P <sub>0</sub>	W	Co	t
NPIM32PA	3.8±0.1	n/a	3.5±0.1	n/a	2.3±0.1	8.0±0.1	12.0±0.3	5.5±0.1	0.35±0.05
NPIM42PA	5.0±0.1	n/a	4.4±0.1	n/a	2.3±0.1	8.0±0.1	12.0±0.3	5.5±0.1	0.35±0.05
NPIM74PA	7.8±0.1	n/a	7.1±0.1	n/a	3.3±0.1	12.0±0.1	16.0±0.3	7.5±0.1	0.35±0.05
NPIM104PA	11.6±0.1	n/a	10.4±0.1	n/a	4.5±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05
NPIM145PA	14.1±0.1	13.0±0.1	12.9±0.1	7.0±0.1	6.5±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05
NPIM146PA	14.1±0.1	13.0±0.1	12.9±0.1	7.0±0.1	7.0±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05

### CARRIER TAPE FOR SIZES 32, 42, 74 AND 104

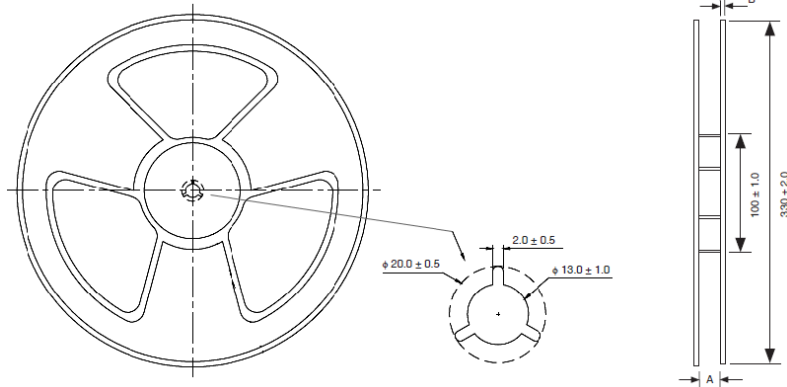


### CARRIER TAPE FOR SIZES 145 AND 146



### REEL DIMENSIONS (mm)

Series	A	B	C	D	Qty/Reel
NPIM32PA	12.4 +2.0/-0	100 ±2.0	13.5 ±0.5	330	3,000
NPIM42PA					3,000
NPIM74PA	16.4 +2.0/-0				1,000
NPIM104PA	24.4 +2.0/-0				500
NPIM145PA					500
NPIM146PA					500



### LAND PATTERN DIMENSIONS (mm)

Series	F	G	H
NPIM32PA	1.9	4.1	1.45
NPIM42PA	2.2	5.2	2.4
NPIM74PA	2.5	8.4	3.5
NPIM104PA	5.4	13.6	3.5
NPIM145PA	8.0	14.2	5.0
NPIM146PA	8.0	14.2	5.0

