

## FEATURES

- SHIELDED POWER INDUCTOR
- SMALL SIZE WITH CURRENT RATINGS TO 6.8 AMPS)
- SURFACE MOUNTABLE CONSTRUCTION
- HIGH INDUCTANCE (UP TO 1000μH)
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS

**RoHS  
Compliant**  
includes all homogeneous materials

\*See Part Number System for Details



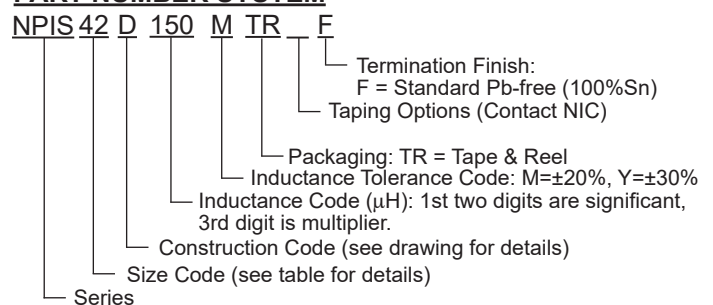
## CHARACTERISTICS

Case Size	NPIS20D	NPIS21D	NPIS24D	NPIS28D	NPIS33D	NPIS34D	NPIS35D
Inductance Range	1.2 ~ 10μH	1.2 ~ 100μH	1.5 ~ 12μH	2.2 ~ 47μH	2.7 ~ 39μH	1.2 ~ 22μH	1.5 ~ 33μH
Ambient Operating Temperature Range	-55°C ~ +85°C						
Maximum Component Temperature (Ambient + Self-Heating)	+125°C						
Temperature Rise at I <sub>rms</sub>	+40°C max.						
Inductance Change at I <sub>sat</sub>	-35% typical						
Inductance Tolerance	±20% (M), ±30% (Y)						
Resistance to Solder Heat	+250°C for 10 seconds						

Case Size	NPIS36D	NPIS39D	NPIS42D	NPIS43D	NPIS52D	NPIS53D	NPIS63D	NPIS64D
Inductance Range	1.5 ~ 47μH	3.3 ~ 47μH	1.0 ~ 180μH	1.2 ~ 270μH	3.3 ~ 220μH	2.2 ~ 680μH	3.3 ~ 680μH	1.5 ~ 1000μH
Ambient Operating Temperature Range	-55°C ~ +85°C							
Maximum Component Temperature (Ambient + Self-Heating)	+125°C							
Temperature Rise at I <sub>rms</sub>	+40°C max							
Inductance Change at I <sub>sat</sub>	-35% typical							
Inductance Tolerance	±20% (M), ±30% (Y)							
Resistance to Solder Heat	+250°C for 10 seconds							

Case Size	NPIS83D	NPIS84D	NPIS85D
Inductance Range	2.5 ~ 100μH	1.8 ~ 100μH	2.0 ~ 100μH
Ambient Operating Temperature Range	-55°C ~ +85°C		
Maximum Component Temperature (Ambient + Self-Heating)	+125°C		
Temperature Rise at I <sub>rms</sub>	+40°C max		
Inductance Change at I <sub>sat</sub>	-35% typical		
Inductance Tolerance	±20% (M), ±30% (Y)		
Resistance to Solder Heat	+250°C for 10 seconds		

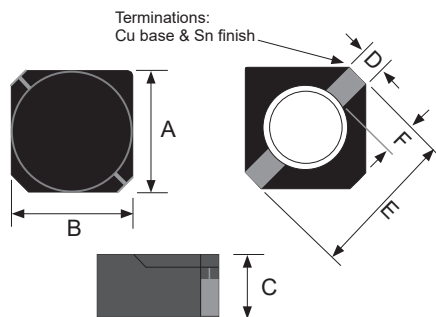
## PART NUMBER SYSTEM



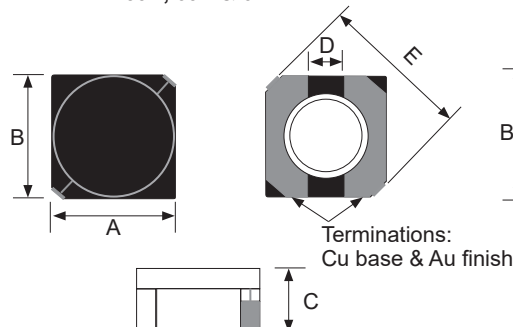
## DIMENSIONS (mm)

Series	A	B	C	D typ.	E	F typ.
NPIS20D	3.0 ± 0.3	3.0 ± 0.3	0.9 ± 0.2	1.2	3.9 ± 0.5	1.2
NPIS21D	3.0 ± 0.3	3.0 ± 0.3	1.1 ± 0.2	1.2	3.9 ± 0.5	1.2
NPIS24D	3.0 ± 0.3	3.0 ± 0.3	1.4 ± 0.2	1.2	3.9 ± 0.5	1.2
NPIS28D	3.0 ± 0.3	3.0 ± 0.3	1.9 ± 0.2	1.2	3.9 ± 0.5	1.2
NPIS33D	3.9 ± 0.3	3.9 ± 0.3	1.1 ± 0.2	1.4	5.0 ± 0.5	1.4
NPIS34D	3.9 ± 0.3	3.9 ± 0.3	1.4 ± 0.2	1.4	5.0 ± 0.5	1.4
NPIS35D	3.9 ± 0.3	3.9 ± 0.3	1.6 ± 0.2	1.4	5.0 ± 0.5	1.4
NPIS36D	3.9 ± 0.3	3.9 ± 0.3	1.9 ± 0.2	1.4	5.0 ± 0.5	/
NPIS39D	3.9 ± 0.3	3.9 ± 0.3	3.0 ± 0.2	1.2	5.0 ± 0.5	/
NPIS42D	4.7 ± 0.3	4.7 ± 0.3	1.8 ± 0.2	1.4	6.4 ± 0.5	/
NPIS43D	4.7 ± 0.3	4.7 ± 0.3	2.8 ± 0.2	1.4	6.4 ± 0.5	/
NPIS52D	5.7 ± 0.3	5.7 ± 0.3	1.8 ± 0.2	1.8	7.7 ± 0.5	/
NPIS53D	5.7 ± 0.3	5.7 ± 0.3	2.8 ± 0.2	1.8	7.7 ± 0.5	/
NPIS63D	6.7 ± 0.3	6.7 ± 0.3	2.8 ± 0.2	2.0	9.0 ± 0.5	/
NPIS64D	6.7 ± 0.3	6.7 ± 0.3	3.8 ± 0.2	2.0	9.0 ± 0.5	/
NPIS83D	9.6 ± 0.5	8.0 ± 0.3	2.7 ± 0.3	8.3	/	/
NPIS84D	9.6 ± 0.5	8.0 ± 0.3	3.7 ± 0.3	8.3	/	/
NPIS85D	9.6 ± 0.5	8.0 ± 0.3	4.2 ± 0.3	8.3	/	/

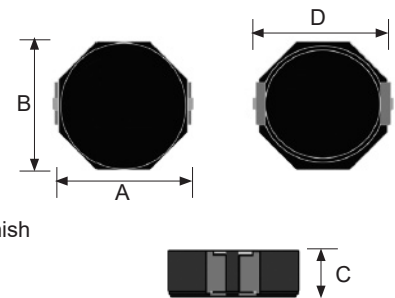
NPIS20D, 21D, 24D, 28D, 33D  
34D & 35D



NPIS36D, 39D, 42D, 43D, 52D,  
53D, 63D & 64D



NPIS83D, 84D & 85D



Part Number	Standard Values - Case Size 20 (3.3 x 3.3 x 1.1mm)			
	Inductance Value (μH)	Test Conditions (L)	DC Resistance (Ω)	DC Current Isat/Irms (Amps)
NPIS20D1R2YTRF	1.2 ± 30%*	100KHz, 0.3V	0.097	0.8
NPIS20D1R5YTRF	1.5 ± 30%*	100KHz, 0.3V	0.11	0.73
NPIS20D1R8YTRF	1.8 ± 30%*	100KHz, 0.3V	0.131	0.65
NPIS20D2R2YTRF	2.2 ± 30%*	100KHz, 0.3V	0.144	0.6
NPIS20D2R5YTRF	2.5 ± 30%*	100KHz, 0.3V	0.15	0.53
NPIS20D3R0YTRF	3.0 ± 30%*	100KHz, 0.3V	0.194	0.47
NPIS20D3R9YTRF	3.9 ± 30%*	100KHz, 0.3V	0.225	0.45
NPIS20D4R7YTRF	4.7 ± 30%*	100KHz, 0.3V	0.288	0.4
NPIS20D5R6YTRF	5.6 ± 30%*	100KHz, 0.3V	0.325	0.37
NPIS20D6R8YTRF	6.8 ± 30%*	100KHz, 0.3V	0.425	0.33
NPIS20D8R2YTRF	8.2 ± 30%*	100KHz, 0.3V	0.457	0.3
NPIS20D100MTRF	10 ± 20%	1KHz, 0.3V	0.538	0.28

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in ± 20% tolerance (M)



Part Number	Standard Values - Case Size 21 (3.3 x 3.3 x 1.3mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS21D1R2YTRF	1.2 $\pm$ 30%*	100KHz, 0.3V	0.068	0.9
NPIS21D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.098	0.78
NPIS21D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.15	0.6
NPIS21D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.17	0.5
NPIS21D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.26	0.44
NPIS21D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.4	0.35
NPIS21D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.65	0.25
NPIS21D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	1	0.22
NPIS21D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	1.6	0.2
NPIS21D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	2	0.15

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 24 (3.3 x 3.3 x 1.55mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS24D1R5YTRF	1.5 $\pm$ 30%*	100KHz, 0.3V	0.063	1.8
NPIS24D1R8YTRF	1.8 $\pm$ 30%*	100KHz, 0.3V	0.075	1.65
NPIS24D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.094	1.5
NPIS24D2R7YTRF	2.7 $\pm$ 30%*	100KHz, 0.3V	0.106	1.35
NPIS24D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.125	1.2
NPIS24D3R9YTRF	3.9 $\pm$ 30%*	100KHz, 0.3V	0.138	1.1
NPIS24D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.169	1
NPIS24D5R6YTRF	5.6 $\pm$ 30%*	100KHz, 0.3V	0.188	0.95
NPIS24D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.213	0.85
NPIS24D8R2YTRF	8.2 $\pm$ 30%*	100KHz, 0.3V	0.281	0.8
NPIS24D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.294	0.7
NPIS24D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.394	0.62

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 28 (3.2 x 3.2 x 2.1mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS28D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.041	0.85
NPIS28D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.054	0.75
NPIS28D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.078	0.63
NPIS28D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.106	0.52
NPIS28D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.18	0.43
NPIS28D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.22	0.35
NPIS28D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.32	0.3
NPIS28D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.46	0.24
NPIS28D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.66	0.2

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)



Part Number	Standard Values - Case Size 33 (4.2 x 4.2 x 1.3mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS33D2R7YTRF	2.7 $\pm$ 30%*	100KHz, 0.3V	0.078	0.5
NPIS33D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.123	0.4
NPIS33D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.18	0.34
NPIS33D8R2YTRF	8.2 $\pm$ 30%*	100KHz, 0.3V	0.204	0.32
NPIS33D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.24	0.28
NPIS33D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.276	0.25
NPIS33D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.372	0.23
NPIS33D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.468	0.21
NPIS33D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.54	0.19
NPIS33D270MTRF	27 $\pm$ 20%	1KHz, 0.3V	0.726	0.17
NPIS33D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.822	0.15
NPIS33D390MTRF	39 $\pm$ 20%	1KHz, 0.3V	0.942	0.14

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 34 (4.2 x 4.2 x 1.6mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS34D1R2YTRF	1.2 $\pm$ 30%*	100KHz, 0.3V	0.045	2.15
NPIS34D1R7YTRF	1.7 $\pm$ 30%*	100KHz, 0.3V	0.063	1.85
NPIS34D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.069	1.6
NPIS34D2R7YTRF	2.7 $\pm$ 30%*	100KHz, 0.3V	0.088	1.45
NPIS34D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.1	1.35
NPIS34D3R9YTRF	3.9 $\pm$ 30%*	100KHz, 0.3V	0.135	1.15
NPIS34D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.15	1.1
NPIS34D8R2YTRF	8.2 $\pm$ 30%*	100KHz, 0.3V	0.238	0.82
NPIS34D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.262	0.75
NPIS34D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.35	0.67
NPIS34D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.488	0.6
NPIS34D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.575	0.52

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 35 (4.2 x 4.2 x 1.8mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS35D1R5YTRF	1.5 $\pm$ 30%*	100KHz, 0.3V	0.052	1.55
NPIS35D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.072	1.2
NPIS35D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.085	1.1
NPIS35D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.105	0.9
NPIS35D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.17	0.73
NPIS35D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.21	0.55
NPIS35D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.295	0.45
NPIS35D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.43	0.4
NPIS35D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.66	0.32

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)



Part Number	Standard Values - Case Size 36 (4.2 x 4.2 x 2.1mm)			
	Inductance Value (μH)	Test Conditions (L)	DC Resistance (Ω)	DC Current Isat/Irms (Amps)
NPIS36D1R5YTRF	1.5 ± 30%*	100KHz, 0.3V	0.052	1.55
NPIS36D2R2YTRF	2.2 ± 30%*	100KHz, 0.3V	0.072	1.2
NPIS36D3R0YTRF	3.0 ± 30%*	100KHz, 0.3V	0.069	1.6
NPIS36D3R3YTRF	3.3 ± 30%*	100KHz, 0.3V	0.085	1.1
NPIS38D4R7YTRF	4.7 ± 30%*	100KHz, 0.3V	0.1075	1.35
NPIS36D6R8YTRF	6.8 ± 30%*	100KHz, 0.3V	0.15	1.1
NPIS36D100MTRF	10 ± 20%	1KHz, 0.3V	0.205	0.9
NPIS36D150MTRF	15 ± 20%	1KHz, 0.3V	0.301	0.75
NPIS36D220MTRF	22 ± 20%	1KHz, 0.3V	0.424	0.6
NPIS36D330MTRF	33 ± 20%	1KHz, 0.3V	0.64	0.45
NPIS36D470MTRF	47 ± 20%	1KHz, 0.3V	0.964	0.35

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in ± 20% tolerance (M)

Part Number	Standard Values - Case Size 38 (4.2 x 4.2 x 3.2mm)			
	Inductance Value (μH)	Test Conditions (L)	DC Resistance (Ω)	DC Current Isat/Irms (Amps)
NPIS39D3R3YTRF	3.3 ± 30%*	100KHz, 0.3V	0.0721	2
NPIS39D4R7YTRF	4.7 ± 30%*	100KHz, 0.3V	0.0883	1.65
NPIS39D6R8YTRF	6.8 ± 30%*	100KHz, 0.3V	0.119	1.24
NPIS39D100MTRF	10 ± 20%	1KHz, 0.3V	0.145	1.05
NPIS39D150MTRF	15 ± 20%	1KHz, 0.3V	0.213	0.9
NPIS39D220MTRF	22 ± 20%	1KHz, 0.3V	0.335	0.76
NPIS39D330MTRF	33 ± 20%	1KHz, 0.3V	0.481	0.58
NPIS39D470MTRF	47 ± 20%	1KHz, 0.3V	0.599	0.48

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in ± 20% tolerance (M)

Part Number	Standard Values - Case Size 42 (5.0 x 5.0 x 2.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS42D1R0YTRF	1.0 $\pm$ 30%*	100KHz, 0.3V	0.045	1.72
NPIS42D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.075	1.32
NPIS42D2R7YTRF	2.7 $\pm$ 30%*	100KHz, 0.3V	0.105	1.28
NPIS42D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.11	1.04
NPIS42D3R9YTRF	3.9 $\pm$ 30%*	100KHz, 0.3V	0.155	0.88
NPIS42D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.162	0.84
NPIS42D5R6YTRF	5.6 $\pm$ 30%*	100KHz, 0.3V	0.17	0.8
NPIS42D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.19	0.76
NPIS42D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.2	0.61
NPIS42D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.21	0.56
NPIS42D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.24	0.5
NPIS42D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.338	0.48
NPIS42D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.397	0.41
NPIS42D270MTRF	27 $\pm$ 20%	1KHz, 0.3V	0.441	0.35
NPIS42D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.694	0.32
NPIS42D390MTRF	39 $\pm$ 20%	1KHz, 0.3V	0.709	0.3
NPIS42D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.922	0.28
NPIS42D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	1.08	0.26
NPIS42D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	1.3	0.24
NPIS42D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	1.56	0.22
NPIS42D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	1.73	0.2
NPIS42D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	2.39	0.18
NPIS42D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	2.67	0.15
NPIS42D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	4	0.14

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 43 (5.0 x 5.0 x 3.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS43D1R2YTRF	1.2 $\pm$ 30%*	100KHz, 0.3V	0.0242	2.56
NPIS43D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.0313	2.04
NPIS43D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.049	1.57
NPIS43D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.072	1.32
NPIS43D5R6YTRF	5.6 $\pm$ 30%*	100KHz, 0.3V	0.1009	1.17
NPIS43D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.108	1.12
NPIS43D8R2YTRF	8.2 $\pm$ 30%*	100KHz, 0.3V	0.118	1.04
NPIS43D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.128	1
NPIS43D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.132	0.84
NPIS43D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.149	0.76
NPIS43D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.165	0.72
NPIS43D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.235	0.7
NPIS43D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.331	0.56
NPIS43D390MTRF	39 $\pm$ 20%	1KHz, 0.3V	0.384	0.5
NPIS43D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.587	0.48
NPIS43D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	0.624	0.41
NPIS43D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.699	0.35
NPIS43D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	0.915	0.32
NPIS43D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	1.02	0.29
NPIS43D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	1.27	0.27
NPIS43D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	1.35	0.24
NPIS43D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	1.54	0.22
NPIS43D271MTRF	270 $\pm$ 20%	1KHz, 0.3V	1.95	0.16

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 52 (6.0 x 6.0 x 2.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS52D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.053	2
NPIS52D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.06	1.9
NPIS52D5R6YTRF	5.6 $\pm$ 30%*	100KHz, 0.3V	0.076	1.6
NPIS52D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.105	1.4
NPIS52D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.124	1.2
NPIS52D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.153	1.1
NPIS52D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.21	0.85
NPIS52D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.29	0.8
NPIS52D270MTRF	27 $\pm$ 20%	1KHz, 0.3V	0.33	0.75
NPIS52D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.386	0.65
NPIS52D390MTRF	39 $\pm$ 20%	1KHz, 0.3V	0.52	0.57
NPIS52D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.595	0.54
NPIS52D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	0.665	0.5
NPIS52D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.84	0.43
NPIS52D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	0.978	0.41
NPIS52D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	1.2	0.36
NPIS52D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	1.5	0.33
NPIS52D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	1.71	0.31
NPIS52D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	3.38	0.21
NPIS52D221MTRF	220 $\pm$ 20%	1KHz, 0.3V	4.34	0.18

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)



Part Number	Standard Values - Case Size 53 (6.0 x 6.0 x 3.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS53D2R2YTRF	2.2 $\pm$ 30%*	100KHz, 0.3V	0.017	2.6
NPIS53D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.029	2.4
NPIS53D5R6MTRF	5.6 $\pm$ 20%	100KHz, 0.3V	0.045	1.9
NPIS53D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.065	1.3
NPIS53D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.076	1.2
NPIS53D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.11	1.0
NPIS53D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.122	0.9
NPIS53D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.189	0.75
NPIS53D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.25	0.62
NPIS53D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	0.305	0.58
NPIS53D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.355	0.52
NPIS53D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	0.463	0.46
NPIS53D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	0.52	0.42
NPIS53D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	0.56	0.40
NPIS53D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	0.68	0.35
NPIS53D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	0.93	0.32
NPIS53D221MTRF	220 $\pm$ 20%	1KHz, 0.3V	1.15	0.30
NPIS53D271MTRF	270 $\pm$ 20%	1KHz, 0.3V	1.56	0.27
NPIS53D331MTRF	330 $\pm$ 20%	1KHz, 0.3V	1.98	0.25
NPIS53D391MTRF	390 $\pm$ 20%	1KHz, 0.3V	2.5	0.22
NPIS53D471MTRF	470 $\pm$ 20%	1KHz, 0.3V	2.7	0.20
NPIS53D561MTRF	560 $\pm$ 20%	1KHz, 0.3V	3.12	0.18
NPIS53D681MTRF	680 $\pm$ 20%	1KHz, 0.3V	4.15	0.16

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 63 (7.0 x 7.0 x 3.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS63D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.026	2.8
NPIS63D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.031	2.4
NPIS63D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.065	1.7
NPIS63D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.084	1.4
NPIS63D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.095	1.32
NPIS63D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.128	1.2
NPIS63D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.165	0.97
NPIS63D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.238	0.8
NPIS63D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	0.277	0.73
NPIS63D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.304	0.65
NPIS63D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	0.39	0.6
NPIS63D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	0.535	0.54
NPIS63D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	0.75	0.51
NPIS63D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	0.95	0.47
NPIS63D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	1.2	0.41
NPIS63D221MTRF	220 $\pm$ 20%	1KHz, 0.3V	1.5	0.37
NPIS63D271MTRF	270 $\pm$ 20%	1KHz, 0.3V	1.7	0.33
NPIS63D331MTRF	330 $\pm$ 20%	1KHz, 0.3V	2.15	0.28
NPIS63D471MTRF	470 $\pm$ 20%	1KHz, 0.3V	3.15	0.21
NPIS63D681MTRF	680 $\pm$ 20%	1KHz, 0.3V	5.15	0.2

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 64 (7.0 x 7.0 x 4.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS64D1R5YTRF	1.5 $\pm$ 30%*	100KHz, 0.3V	0.015	5.2
NPIS64D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.02	3.5
NPIS64D6R8YTRF	6.8 $\pm$ 30%*	100KHz, 0.3V	0.029	2.4
NPIS64D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.038	2
NPIS64D120MTRF	12 $\pm$ 20%	1KHz, 0.3V	0.053	1.7
NPIS64D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.057	1.6
NPIS64D180MTRF	18 $\pm$ 20%	1KHz, 0.3V	0.092	1.5
NPIS64D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.096	1.3
NPIS64D270MTRF	27 $\pm$ 20%	1KHz, 0.3V	0.109	1.2
NPIS64D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.124	1.1
NPIS64D390MTRF	39 $\pm$ 20%	1KHz, 0.3V	0.138	1
NPIS64D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.155	0.95
NPIS64D560MTRF	56 $\pm$ 20%	1KHz, 0.3V	0.202	0.85
NPIS64D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.234	0.75
NPIS64D820MTRF	82 $\pm$ 20%	1KHz, 0.3V	0.324	0.7
NPIS64D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	0.358	0.65
NPIS64D121MTRF	120 $\pm$ 20%	1KHz, 0.3V	0.47	0.59
NPIS64D151MTRF	150 $\pm$ 20%	1KHz, 0.3V	0.58	0.54
NPIS64D181MTRF	180 $\pm$ 20%	1KHz, 0.3V	0.69	0.49
NPIS64D221MTRF	220 $\pm$ 20%	1KHz, 0.3V	0.89	0.43
NPIS64D271MTRF	270 $\pm$ 20%	1KHz, 0.3V	1.29	0.4
NPIS64D331MTRF	330 $\pm$ 20%	1KHz, 0.3V	1.7	0.37
NPIS64D391MTRF	390 $\pm$ 20%	1KHz, 0.3V	1.75	0.34
NPIS64D471MTRF	470 $\pm$ 20%	1KHz, 0.3V	2.2	0.32
NPIS64D561MTRF	560 $\pm$ 20%	1KHz, 0.3V	2.85	0.29
NPIS64D681MTRF	680 $\pm$ 20%	1KHz, 0.3V	3.2	0.25
NPIS64D821MTRF	820 $\pm$ 20%	1KHz, 0.3V	4.05	0.22
NPIS64D102MTRF	1000 $\pm$ 20%	1KHz, 0.3V	5.7	0.2

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)

Part Number	Standard Values - Case Size 83 (10.1 x 8.3 x 3.0mm)			
	Inductance Value ( $\mu$ H)	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS83D2R5YTRF	2.5 $\pm$ 30%*	100KHz, 0.3V	0.016	4.50
NPIS83D3R3YTRF	3.3 $\pm$ 30%*	100KHz, 0.3V	0.018	4.00
NPIS83D4R7YTRF	4.7 $\pm$ 30%*	100KHz, 0.3V	0.025	3.40
NPIS83D100MTRF	10 $\pm$ 20%	1KHz, 0.3V	0.047	2.50
NPIS83D150MTRF	15 $\pm$ 20%	1KHz, 0.3V	0.069	1.90
NPIS83D220MTRF	22 $\pm$ 20%	1KHz, 0.3V	0.099	1.60
NPIS83D330MTRF	33 $\pm$ 20%	1KHz, 0.3V	0.156	1.30
NPIS83D470MTRF	47 $\pm$ 20%	1KHz, 0.3V	0.195	1.15
NPIS83D680MTRF	68 $\pm$ 20%	1KHz, 0.3V	0.286	0.92
NPIS83D101MTRF	100 $\pm$ 20%	1KHz, 0.3V	0.43	0.75

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.

\*Also available in  $\pm$  20% tolerance (M)



Part Number	Standard Values - Case Size 84 (10.1 x 8.3 x 4.0mm)			
	Inductance Value ( $\mu\text{H}$ )	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS84D1R8YTRF	$1.8 \pm 30\%^*$	100KHz, 0.3V	0.016	6.80
NPIS84D2R5YTRF	$2.5 \pm 30\%^*$	100KHz, 0.3V	0.018	6.00
NPIS84D3R5YTRF	$3.5 \pm 30\%^*$	100KHz, 0.3V	0.024	5.00
NPIS84D4R7YTRF	$4.7 \pm 30\%^*$	100KHz, 0.3V	0.029	4.40
NPIS84D6R0YTRF	$6.0 \pm 30\%^*$	100KHz, 0.3V	0.032	4.00
NPIS84D100MTRF	$10 \pm 20\%$	1KHz, 0.3V	0.048	3.00
NPIS84D150MTRF	$15 \pm 20\%$	1KHz, 0.3V	0.067	2.50
NPIS84D220MTRF	$22 \pm 20\%$	1KHz, 0.3V	0.105	2.00
NPIS84D330MTRF	$33 \pm 20\%$	1KHz, 0.3V	0.157	1.60
NPIS84D470MTRF	$47 \pm 20\%$	1KHz, 0.3V	0.189	1.42
NPIS84D680MTRF	$68 \pm 20\%$	1KHz, 0.3V	0.29	1.08
NPIS84D101MTRF	$100 \pm 20\%$	1KHz, 0.3V	0.41	0.88

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.  
 \*Also available in  $\pm 20\%$  tolerance (M)

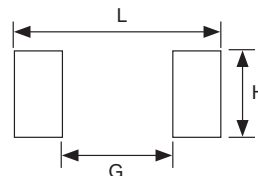
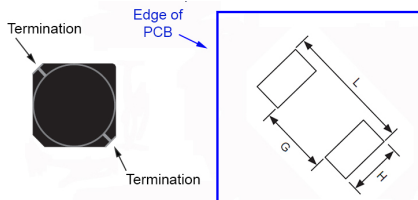
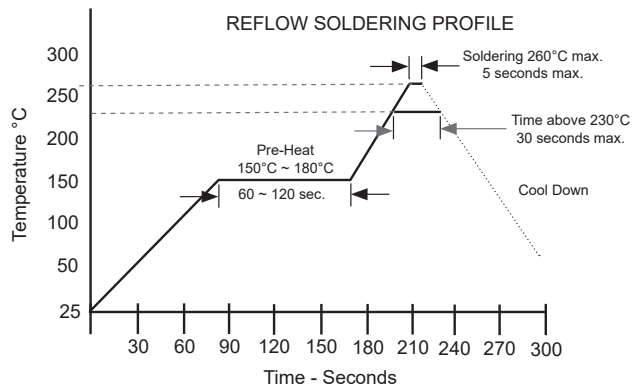
Part Number	Standard Values - Case Size 84 (10.1 x 8.3 x 4.5mm)			
	Inductance Value ( $\mu\text{H}$ )	Test Conditions (L)	DC Resistance ( $\Omega$ )	DC Current Isat/Irms (Amps)
NPIS85D2R0YTRF	$2.0 \pm 30\%^*$	100KHz, 0.3V	0.014	5.50
NPIS85D3R9YTRF	$3.9 \pm 30\%^*$	100KHz, 0.3V	0.019	4.50
NPIS85D4R7YTRF	$4.7 \pm 30\%^*$	100KHz, 0.3V	0.022	4.10
NPIS85D6R8YTRF	$6.8 \pm 30\%^*$	100KHz, 0.3V	0.025	3.90
NPIS85D100MTRF	$10 \pm 20\%$	1KHz, 0.3V	0.036	3.20
NPIS85D150MTRF	$15 \pm 20\%$	1KHz, 0.3V	0.053	2.30
NPIS85D220MTRF	$22 \pm 20\%$	1KHz, 0.3V	0.075	1.80
NPIS85D330MTRF	$33 \pm 20\%$	1KHz, 0.3V	0.125	1.40
NPIS85D470MTRF	$47 \pm 20\%$	1KHz, 0.3V	0.15	1.30
NPIS85D680MTRF	$68 \pm 20\%$	1KHz, 0.3V	0.24	1.00
NPIS85D101MTRF	$100 \pm 20\%$	1KHz, 0.3V	0.36	0.80

Irms/Isat specification is based on +40°C temperature rise or -35% inductance change whichever is less.  
 \*Also available in  $\pm 20\%$  tolerance (M)

Case Size	LAND PATTERN DIMENSIONS (mm)		
	L	G	H
NPIS20D, 21D, 24D & 28D	4.3	1.7	1.3
NPIS33D, 34D, & 35D	5.2	2.4	1.5
NPIS36D & 39D	4.5	1.1	4.5
NPIS42D & 43D	5.3	1.5	5.3
NPIS52D & 53D	6.2	2	6.3
NPIS63D & 64D	7.2	2	7.3
NPIS83D, 84D & 85D	10.1	6.1	2.8

NPIS20D, 21D, 24D, 28D, 33D  
34D & 35D

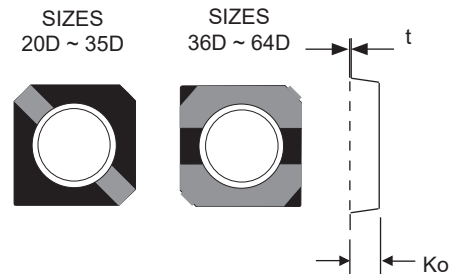
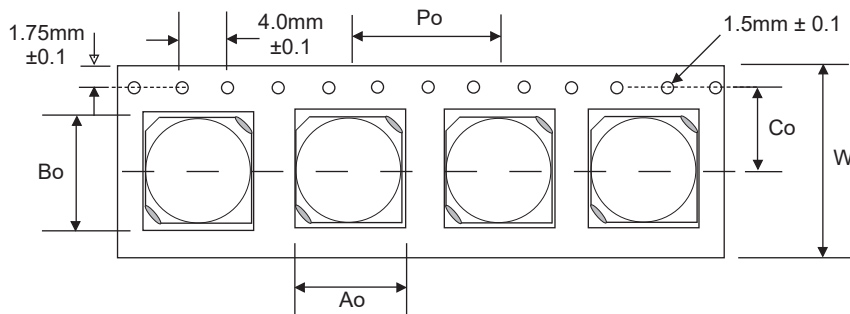
NPIS36D, 39D, 42D, 43D, 52D,  
53D, 63D & 64D



Case Size	Reel Qty	CARRIER TAPE DIMENSIONS (mm)									
		W	A0	B0	Co	K0	Po	t			
NPIS20D	3,000	12.0	3.5	3.5	5.5	1.4	8	0.3			
NPIS21D	3,000					1.6					
NPIS24D	3,000					1.6					
NPIS28D	3,000		4.3	4.3		2.1					
NPIS33D	3,000					3.3					
NPIS34D	3,000								2.2		
NPIS35D	3,000								3.2		
NPIS36D	3,500		16.0	7.4		7.4			3.4	12	0.35
NPIS39D	2,000								4.5		
NPIS42D	3,500			10.5		10.5			3.5		0.4
NPIS43D	2,500								4.3		
NPIS52D	3,500								4.3		
NPIS53D	2,500										

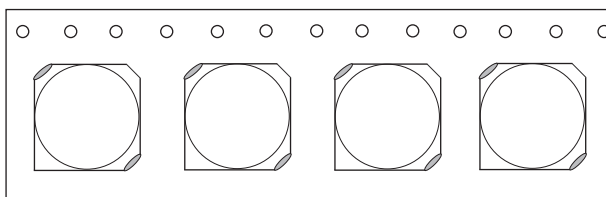
TRF  
STANDARD COMPONENT ORIENTATION  
(Contact NIC for Non-standard Options)

BOTTOM VIEW



BOTTOM VIEW

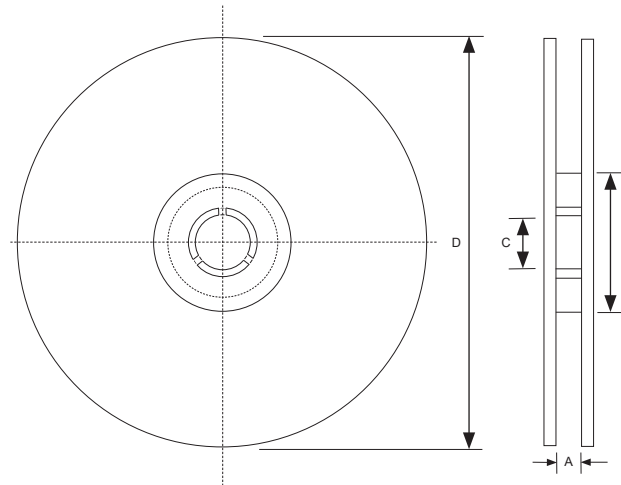
TRUF  
OPTIONAL 180° COMPONENT ORIENTATION



SIZES  
20D ~ 35D



Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
12mm	12.5 ±0.1	100 ±1	13.0 ±0.5	330
16mm	16.5 ±0.1			



Size	REEL QUANTITY (330mm Reel)								
	NPIS20D	NPIS21D	NPIS24D	NPIS28D	NPIS33D	NPIS34D	NPIS35D	NPIS36D	NPIS39D
Qty./Reel	3000	3000	3000	3000	3000	3000	3000	3500	2000
Tape Width	12mm	12mm	12mm	12mm	12mm	12mm	12mm	12mm	12mm

Size	REEL QUANTITY (330mm Reel)								
	NPIS42D	NPIS43D	NPIS52D	NPIS53D	NPIS63D	NPIS64D	NPIS83D	NPIS84D	NPIS85D
Qty./Reel	3500	2500	3500	2500	1500	1000	1000	1000	800
Tape Width	12mm	12mm	16mm	16mm	16mm	16mm	16mm	16mm	16mm