

FEATURES

- SHIELDED POWER INDUCTOR
- MOLDED METAL COMPOSITE CONSTRUCTION
- HIGH SATURATION CURRENT CHARACTERISTICS (~ 115A)
- EXTENDED TEMPERATURE RANGE (-55°C ~ +155°C)
- NINE CASE SIZES (2.8mm ~ 12.6mm HEIGHT)
- MEETS THE REQUIREMENTS OF AEC-Q200

**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details

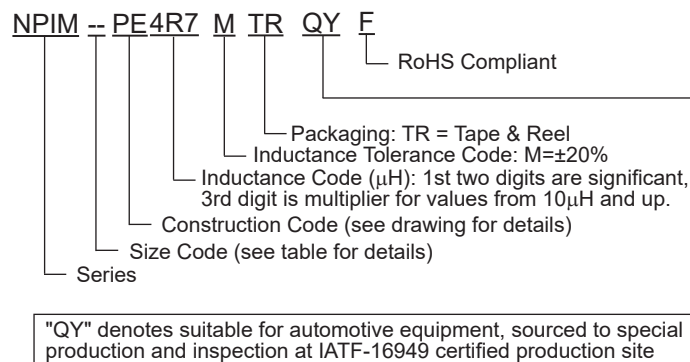


CHARACTERISTICS

Case Code	53	63	65	104	105	125
Inductance Range (μH)	0.47 ~ 10	0.15 ~ 22	0.47 ~ 22	0.15 ~ 47	0.36 ~ 10	0.47 ~ 15
Ambient Operating Temperature Range	-55°C ~ +155°C					
Maximum Component Temperature (Ambient + Self-Heating)	+155°C					
Temperature Rise at Irms	+40°C					
Inductance Change at Isat	-30%					
Inductance Tolerance	See Specifications Tables					
Resistance to Solder Heat	260°C ±5°C for 10 seconds					

Case Code	126	177	233
Inductance Range (μH)	0.1 ~ 100	0.47 ~ 82	0.15 ~ 100
Ambient Operating Temperature Range	-55°C ~ +155°C		
Maximum Component Temperature (Ambient + Self-Heating)	+155°C		
Temperature Rise at Irms	+40°C		
Inductance Change at Isat	-30%		
Inductance Tolerance	See Specifications Tables		
Resistance to Solder Heat	260°C ±5°C for 10 seconds		

Part NUMBER SYSTEM



DIMENSIONS (mm)

Size Code	A	B	C	D	E	Values	Figure	Values	F	G	H
53	5.70 ± 0.30	5.20 ± 0.20	2.80 ± 0.20	1.00 ± 0.30	2.00 ± 0.20	ALL	1	ALL	6.0	2.8	2.5
63	7.10 ± 0.30	6.60 ± 0.20	2.80 ± 0.20	1.60 ± 0.30	3.00 ± 0.20	ALL	1	ALL	8.0	3.7	3.4
65	7.30 ± 0.30	6.60 ± 0.30	4.80 ± 0.20	1.60 ± 0.30	3.00 ± 0.20	ALL	1	ALL	8.0	3.5	3.4
104	11.0 ± 0.30	10.0 ± 0.30	3.80 ± 0.20	2.00 ± 0.30	2.50 ± 0.30	0.56 ~ 1.5	1	1.8 ~ 100	12.5	5.4	3.5
					3.00 ± 0.20	0.15 ~ 0.47 1.8 ~ 47	2	0.15 ~ 1.5			
105	11.0 ± 0.50	10.0 ± 0.30	4.80 ± 0.20	2.00 ± 0.30	2.50 ± 0.30	0.68 ~ 1.5	1	2.2~10	12.5	5.4	3.5
					3.00 ± 0.30	0.36 ~ 0.47 2.2 ~ 100	2	0.36~1.5			
125	13.5 ± 0.50	12.6 ± 0.20	4.70 ± 0.30	2.30 ± 0.30	4.00 ± 0.30	0.47 ~ 1.0	1	1.5 ~ 15	14.5	8.0	5.0
					4.70 ± 0.30	1.5 ~ 15	2	0.47 ~ 1.0			
126	13.5 ± 0.50	12.6 ± 0.20	6.20 ± 0.30	2.30 ± 0.30	4.00 ± 0.30	0.68 ~ 1.5	1	2.2 ~ 100	14.5	8.0	5.0
					4.70 ± 0.30	0.1 ~ 0.22 2.2 ~ 68	2	0.1 ~ 1.5			
177	17.8 ± 0.50	16.9 ± 0.30	6.70 ± 0.30	2.30 ± 0.30	11.9 ± 0.30	ALL	1	ALL	18.5	12.0	12.5
233	23.5 ± 0.50	22.0 ± 0.30	12.6 ± 0.40	5.00 ± 0.40	19.0 ± 0.30	ALL	1	ALL	24.0	12.5	19.6

Figure 1

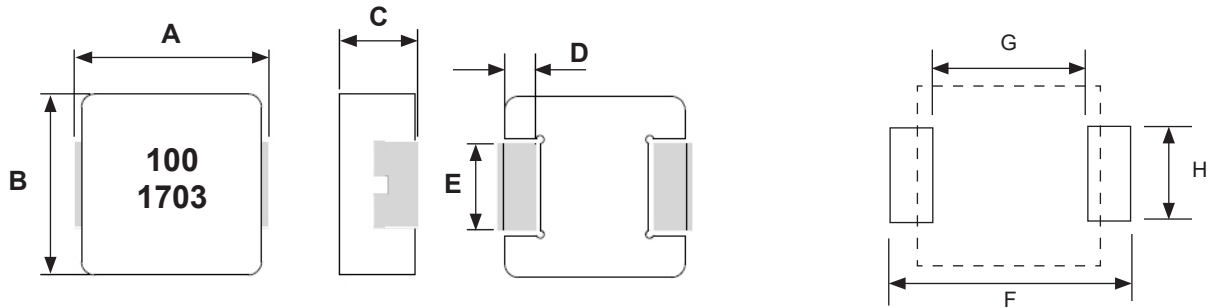
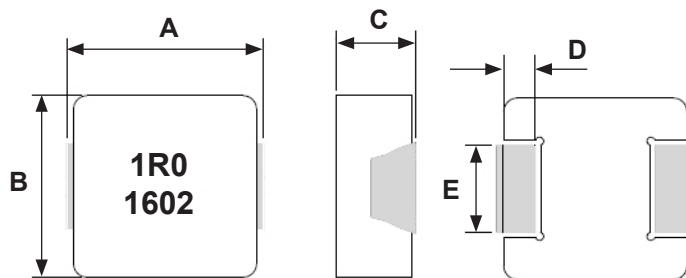


Figure 2



Part Number	STANDARD VALUES - CASE SIZE 53PE (5.7 X 5.2 X 2.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM53PER47MTRQYF	0.47	20%	6	9.0	12	100KHz/1.0V
NPIM53PER68MTRQYF	0.68	20%	8.5	8.0	11	100KHz/1.0V
NPIM53PER82MTRQYF	0.82	20%	9.2	7.7	9.0	100KHz/1.0V
NPIM53PE1R0MTRQYF	1.0	20%	12	7.5	8.0	100KHz/1.0V
NPIM53PE1R5MTRQYF	1.5	20%	15.7	6.5	7.0	100KHz/1.0V
NPIM53PE2R2MTRQYF	2.2	20%	25	5.8	6.5	100KHz/1.0V
NPIM53PE3R3MTRQYF	3.3	20%	33	5.3	5.8	100KHz/1.0V
NPIM53PE4R7MTRQYF	4.7	20%	44	4.6	4.8	100KHz/1.0V
NPIM53PE5R6MTRQYF	5.6	20%	58	4.0	4.3	100KHz/1.0V
NPIM53PE6R8MTRQYF	6.8	20%	66	3.1	3.7	100KHz/1.0V
NPIM53PE100MTRQYF	10	20%	103	2.1	3.4	100KHz/1.0V

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

Part Number	STANDARD VALUES - CASE SIZE 63PE (7.1 X 6.6 X 2.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM63PER15YTRQYF	0.15	30%	2.1	36	25	100KHz/1.0V
NPIM63PER22MTRQYF	0.22	20%	2.5	32	21	100KHz/1.0V
NPIM63PER33MTRQYF	0.33	20%	3.4	22	20	100KHz/1.0V
NPIM63PER36MTRQYF	0.36	20%	3.9	21	18	100KHz/1.0V
NPIM63PER47MTRQYF	0.47	20%	4	18	16	100KHz/1.0V
NPIM63PER56MTRQYF	0.56	20%	4.5	16	15	100KHz/1.0V
NPIM63PER68MTRQYF	0.68	20%	5.3	15	14.5	100KHz/1.0V
NPIM63PER82MTRQYF	0.82	20%	6	14	13	100KHz/1.0V
NPIM63PE1R0MTRQYF	1	20%	7.4	13.5	11	100KHz/1.0V
NPIM63PE1R2MTRQYF	1.2	20%	9.5	12.5	9.5	100KHz/1.0V
NPIM63PE1R5MTRQYF	1.5	20%	12.1	12	9.0	100KHz/1.0V
NPIM63PE1R8MTRQYF	1.8	20%	13	10	8.0	100KHz/1.0V
NPIM63PE2R2MTRQYF	2.2	20%	15	9.0	7.5	100KHz/1.0V
NPIM63PE2R7MTRQYF	2.7	20%	20	8.8	7.0	100KHz/1.0V
NPIM63PE3R3MTRQYF	3.3	20%	22	8.5	6.0	100KHz/1.0V
NPIM63PE4R7MTRQYF	4.7	20%	33	5.5	5.0	100KHz/1.0V
NPIM63PE5R6MTRQYF	5.6	20%	42	5.2	5.0	100KHz/1.0V
NPIM63PE6R8MTRQYF	6.8	20%	50	5.0	4.2	100KHz/1.0V
NPIM63PE8R2MTRQYF	8.2	20%	60	4.7	4.0	100KHz/1.0V
NPIM63PE100MTRQYF	10	20%	68	4.5	3.5	100KHz/1.0V
NPIM63PE150MTRQYF	15	20%	140	4.0	2.5	100KHz/1.0V
NPIM63PE220MTRQYF	22	20%	190	2.5	2.0	100KHz/1.0V

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



Part Number	STANDARD VALUES - CASE SIZE 65PE (7.1 X 6.6 X 4.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM65PER47MTRQYF	0.47	20%	3.3	20	20	100KHz/1.0V
NPIM65PER68MTRQYF	0.68	20%	4.1	17	18	100KHz/1.0V
NPIM65PE1R0MTRQYF	1.0	20%	6.2	13	15	100KHz/1.0V
NPIM65PE1R5MTRQYF	1.5	20%	7.3	10.5	13	100KHz/1.0V
NPIM65PE2R2MTRQYF	2.2	20%	11.5	8.5	12	100KHz/1.0V
NPIM65PE3R3MTRQYF	3.3	20%	16.2	8.0	11	100KHz/1.0V
NPIM65PE4R7MTRQYF	4.7	20%	24	7.5	9.5	100KHz/1.0V
NPIM65PE6R8MTRQYF	6.8	20%	36	7.0	8.0	100KHz/1.0V
NPIM65PE8R2MTRQYF	8.2	20%	45	6.0	6.5	100KHz/1.0V
NPIM65PE100MTRQYF	10	20%	53	5.7	6.0	100KHz/1.0V
NPIM65PE150MTRQYF	15	20%	85	3.2	4.0	100KHz/1.0V
NPIM65PE220MTRQYF	22	20%	142	3.1	3.6	100KHz/1.0V

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

Part Number	STANDARD VALUES - CASE SIZE 104PE (11.0 X 10.0 X 3.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM104PER15YTRQYF	0.15	30%	0.6	75	38	100KHz/1.0V
NPIM104PER22MTRQYF	0.22	20%	0.83	60	33	100KHz/1.0V
NPIM104PER36MTRQYF	0.36	20%	1.18	45	29	100KHz/1.0V
NPIM104PER42MTRQYF	0.42	20%	1.3	42	28.5	100KHz/1.0V
NPIM104PER45MTRQYF	0.45	20%	1.4	42	28.5	100KHz/1.0V
NPIM104PER47MTRQYF	0.47	20%	1.5	40	28	100KHz/1.0V
NPIM104PER56MTRQYF	0.56	20%	1.8	29	23	100KHz/1.0V
NPIM104PER68MTRQYF	0.68	20%	2.2	28	20	100KHz/1.0V
NPIM104PER82MTRQYF	0.82	20%	2.5	27	19	100KHz/1.0V
NPIM104PER90MTRQYF	0.9	20%	2.6	27	19	100KHz/1.0V
NPIM104PE1R0MTRQYF	1.0	20%	3.25	26	18	100KHz/1.0V
NPIM104PE1R5MTRQYF	1.5	20%	4.2	22	16	100KHz/1.0V
NPIM104PE1R8MTRQYF	1.8	20%	5.7	20.5	15	100KHz/1.0V
NPIM104PE2R0MTRQYF	2.0	20%	6.1	18	14.5	100KHz/1.0V
NPIM104PE2R2MTRQYF	2.2	20%	6.7	16	13	100KHz/1.0V
NPIM104PE3R3MTRQYF	3.3	20%	11.8	14	10	100KHz/1.0V
NPIM104PE4R7MTRQYF	4.7	20%	19	13	8.0	100KHz/1.0V
NPIM104PE5R6MTRQYF	5.6	20%	22.8	11.5	7.2	100KHz/1.0V
NPIM104PE6R8MTRQYF	6.8	20%	24.5	11	6.8	100KHz/1.0V
NPIM104PE8R2MTRQYF	8.2	20%	28	8.5	6.5	100KHz/1.0V
NPIM104PE100MTRQYF	10	20%	30	7.5	6.1	100KHz/1.0V
NPIM104PE150MTRQYF	15	20%	45	6.0	5.0	100KHz/1.0V
NPIM104PE220MTRQYF	22	20%	66	5.5	4.1	100KHz/1.0V
NPIM104PE330MTRQYF	33	20%	91	5	3.5	100KHz/1.0V
NPIM104PE470MTRQYF	47	20%	143	3.7	3	100KHz/1.0V

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



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

Part Number	STANDARD VALUES - CASE SIZE 105PE (11.0 X 10.0 X 4.8mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM105PER36MTRQYF	0.36	20%	0.92	46	30	100KHz/1.0V
NPIM105PER47MTRQYF	0.47	20%	1.32	40	29	100KHz/1.0V
NPIM105PER68MTRQYF	0.68	20%	1.9	32	25	100KHz/1.0V
NPIM105PE1R0MTRQYF	1.0	20%	3.0	30	23	100KHz/1.0V
NPIM105PE1R5MTRQYF	1.5	20%	3.8	24	21	100KHz/1.0V
NPIM105PE2R2MTRQYF	2.2	20%	5.6	18	17.5	100KHz/1.0V
NPIM105PE3R3MTRQYF	3.3	20%	9.1	15.5	15	100KHz/1.0V
NPIM105PE4R7MTRQYF	4.7	20%	10.5	14	13	100KHz/1.0V
NPIM105PE5R6MTRQYF	5.6	20%	14.4	12.5	11	100KHz/1.0V
NPIM105PE6R8MTRQYF	6.8	20%	17.3	12	10	100KHz/1.0V
NPIM105PE100MTRQYF	10	20%	21.8	11	7.2	100KHz/1.0V

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

Part Number	STANDARD VALUES - CASE SIZE 125PE (13.5 X 12.6 X 4.7mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM125PER47MTRQYF	0.47	20%	0.9	58	34	100KHz/1.0V
NPIM125PER68MTRQYF	0.68	20%	1.55	42	31	100KHz/1.0V
NPIM125PE1R0MTRQYF	1.0	20%	1.9	34	27	100KHz/1.0V
NPIM125PE1R5MTRQYF	1.5	20%	3.8	28	22	100KHz/1.0V
NPIM125PE2R2MTRQYF	2.2	20%	4.8	23	15.5	100KHz/1.0V
NPIM125PE3R3MTRQYF	3.3	20%	7.0	20.5	14	100KHz/1.0V
NPIM125PE4R7MTRQYF	4.7	20%	10.2	16	12.5	100KHz/1.0V
NPIM125PE6R8MTRQYF	6.8	20%	16	15	11	100KHz/1.0V
NPIM125PE100MTRQYF	10	20%	22	10.5	9	100KHz/1.0V
NPIM125PE150MTRQYF	15	20%	36	9.2	8.2	100KHz/1.0V

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

Part Number	STANDARD VALUES - CASE SIZE 126PE (13.5 X 12.6 X 6.2mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM126PER10YTRQYF	0.1	30%	0.25	115	60	100KHz/1.0V
NPIM126PER22MTRQYF	0.22	20%	0.46	105	42	100KHz/1.0V
NPIM126PER68MTRQYF	0.68	20%	1.5	46	33	100KHz/1.0V
NPIM126PE1R0MTRQYF	1	20%	1.8	36	29	100KHz/1.0V
NPIM126PE1R5MTRQYF	1.5	20%	2.53	30	25	100KHz/1.0V
NPIM126PE2R2MTRQYF	2.2	20%	4.2	24	21	100KHz/1.0V
NPIM126PE3R3MTRQYF	3.3	20%	6.2	22.5	19	100KHz/1.0V
NPIM126PE4R7MTRQYF	4.7	20%	8.0	21	17	100KHz/1.0V
NPIM126PE5R6MTRQYF	5.6	20%	9.8	19.5	15	100KHz/1.0V
NPIM126PE6R8MTRQYF	6.8	20%	11.3	18	14	100KHz/1.0V
NPIM126PE8R2MTRQYF	8.2	20%	13.8	17	12.5	100KHz/1.0V
NPIM126PE100MTRQYF	10	20%	15.8	15	11	100KHz/1.0V
NPIM126PE220MTRQYF	22	20%	35	9.0	8.0	100KHz/1.0V
NPIM126PE330MTRQYF	33	20%	55	8.0	6.5	100KHz/1.0V
NPIM126PE470MTRQYF	47	20%	67	6.8	5.7	100KHz/1.0V
NPIM126PE680MTRQYF	68	20%	100	5.0	4.8	100KHz/1.0V

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

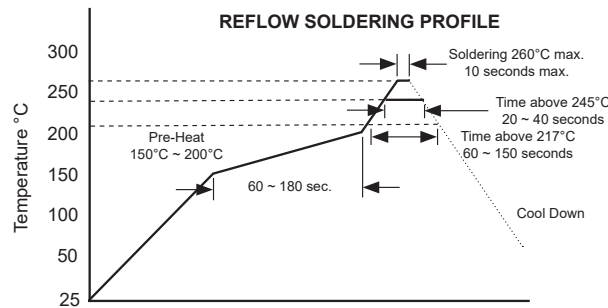


Part Number	STANDARD VALUES - CASE SIZE 177PE (17.8 X 16.9 X 6.7mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM177PER47MTRQYF	0.47	20%	0.9	100	55	100KHz/1.0V
NPIM177PER56MTRQYF	0.56	20%	0.97	70	50	100KHz/1.0V
NPIM177PE1R0MTRQYF	1.0	20%	1.3	45	42	100KHz/1.0V
NPIM177PE1R5MTRQYF	1.5	20%	1.8	40	35	100KHz/1.0V
NPIM177PE1R8MTRQYF	1.8	20%	2	34	32	100KHz/1.0V
NPIM177PE2R2MTRQYF	2.2	20%	2.2	32	30	100KHz/1.0V
NPIM177PE3R3MTRQYF	3.3	20%	3.3	29	28	100KHz/1.0V
NPIM177PE4R7MTRQYF	4.7	20%	4.5	26	26	100KHz/1.0V
NPIM177PE6R8MTRQYF	6.8	20%	7.2	22	22	100KHz/1.0V
NPIM177PE100MTRQYF	10	20%	10.6	19	19	100KHz/1.0V
NPIM177PE150MTRQYF	15	20%	15.5	14	14	100KHz/1.0V
NPIM177PE220MTRQYF	22	20%	24	11.5	11.5	100KHz/1.0V
NPIM177PE330MTRQYF	33	20%	37	10	10	100KHz/1.0V
NPIM177PE470MTRQYF	47	20%	47	8.0	8.0	100KHz/1.0V
NPIM177PE820MTRQYF	82	20%	83	6.5	5.7	100KHz/1.0V

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

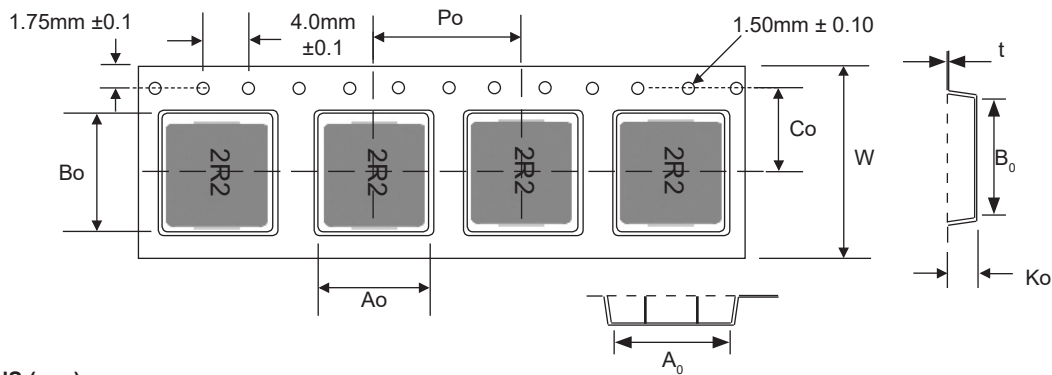
Part Number	STANDARD VALUES - CASE SIZE 233PE (23.5 X 22.0 X 12.6mm)					
	Inductance Value (μH)	Tolerance	DC Resistance (mΩ) Max.	DC Current Isat (Amps)	DC Current Irms (Amps)	Test Frequency
NPIM233PE1R5MTRQYF	1.5	20%	1.15	48	57	100KHz/1.0V
NPIM233PE2R2MTRQYF	2.2	20%	1.25	43	52	100KHz/1.0V
NPIM233PE3R3MTRQYF	3.3	20%	1.75	37	47	100KHz/1.0V
NPIM233PE4R7MTRQYF	4.7	20%	2.2	34	44	100KHz/1.0V
NPIM233PE6R8MTRQYF	6.8	20%	3.1	32	36	100KHz/1.0V
NPIM233PE100MTRQYF	10	20%	4.15	20	30	100KHz/1.0V
NPIM233PE220MTRQYF	22	20%	11	14	18	100KHz/1.0V
NPIM233PE230MTRQYF	23	20%	11	14	18	100KHz/1.0V
NPIM233PE330MTRQYF	33	20%	15.4	10.5	16	100KHz/1.0V
NPIM233PE470MTRQYF	47	20%	20.8	10	14	100KHz/1.0V
NPIM233PE680MTRQYF	68	20%	29.5	9.0	12	100KHz/1.0V
NPIM233PE750MTRQYF	75	20%	31.6	8.5	11	100KHz/1.0V
NPIM233PE820MTRQYF	82	20%	34.2	7.7	10	100KHz/1.0V
NPIM233PE101MTRQYF	100	20%	40	7.5	9.5	100KHz/1.0V

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



CARRIER TAPE DIMENSIONS (mm)

Size Code	B ₀	A ₀	K ₀	P ₀	W	Co	t
53	6.2 ± 0.1	5.6 ± 0.1	3.3 ± 0.1	8.0 ± 0.1	12.0 ± 0.3	5.5 ± 0.1	0.35 ± 0.05
63	7.7 ± 0.1	7.0 ± 0.1	3.3 ± 0.1	12.0 ± 0.1	16.0 ± 0.3	7.5 ± 0.1	0.35 ± 0.05
65	7.7 ± 0.1	7.0 ± 0.1	5.3 ± 0.1	12.0 ± 0.1	16.0 ± 0.3	7.5 ± 0.1	0.35 ± 0.05
104	11.6 ± 0.1	10.4 ± 0.1	4.5 ± 0.1	16.0 ± 0.1	24.0 ± 0.3	11.5 ± 0.1	0.35 ± 0.05
105	11.6 ± 0.1	10.4 ± 0.1	5.3 ± 0.1	16.0 ± 0.1	24.0 ± 0.3	11.5 ± 0.1	0.35 ± 0.10
125	14.1 ± 0.1	12.9 ± 0.1	5.5 ± 0.1	16.0 ± 0.1	24.0 ± 0.3	11.5 ± 0.1	0.35 ± 0.05
126	14.1 ± 0.1	12.9 ± 0.1	7.0 ± 0.1	16.0 ± 0.1	24.0 ± 0.3	11.5 ± 0.1	0.35 ± 0.10
177	18.5 ± 0.1	17.5 ± 0.1	7.5 ± 0.1	24.0 ± 0.1	32.0 ± 0.3	14.2 ± 0.1	0.50 ± 0.05
233	25.0 ± 0.1	23.0 ± 0.1	13.6 ± 0.1	32.0 ± 0.1	44.0 ± 0.3	20.2 ± 0.1	0.50 ± 0.05



REEL DIMENSIONS (mm)

Size Code	A	B	C	D	Qty/Reel
53	12.4 +2/-0	100 ± 2	13 +0.5/-0.20	330	2,000
63	16.4 +2/-0				1,000
65	16.4 +2/-0				800
104	24.4 +2/-0				500
105	24.4 +2/-0				500
125	24.4 +2/-0				500
126	24.4 +2/-0				500
177	32.4 +2/-0				200
233	44.4 +2/-0				80

