

FEATURES

- SHIELDED POWER INDUCTOR
- MOLDED METAL COMPOSITE CONSTRUCTION
- HIGH SATURATION CURRENT CHARACTERISTICS (~ 75A)
- HIGH EFFICIENCY (2X IMPROVEMENT OVER FERRITE CORE INDUCTORS)
- LOW PROFILE (1.8mm ~ 5.8mm)

RoHS Compliant
includes all homogeneous materials

*See Part Number System for Details



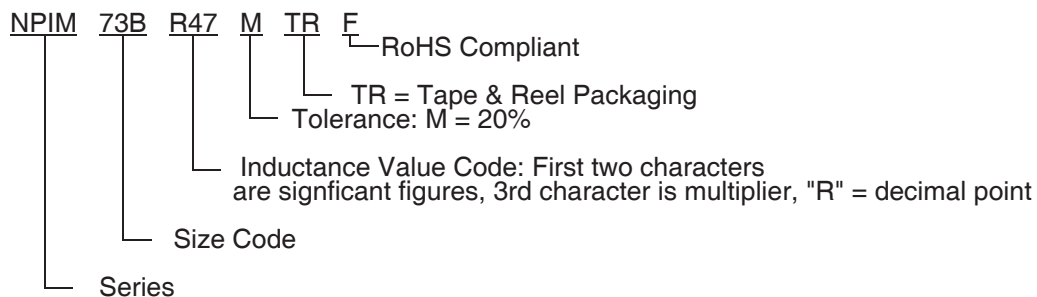
CHARACTERISTICS (42B ~ 74B)

Case Code	42B	52B	53B	72B	73B	74B
Inductance Range (μH)	0.1 ~ 2.2	2.2 ~ 10	1.0 ~ 4.7	0.47 ~ 6.8	0.47 ~ 6.8	0.1 ~ 10
Ambient Operating Temperature Range	-55°C ~ +85°C					
Maximum Component Temperature (Ambient + Self-Heating)	+125°C					
Temperature Rise at Irms	+40°C					
Inductance Change at Isat	-30%					
Inductance Tolerance	±20%					
Resistance to Solder Heat	260°C ±5°C for 10 seconds					

CHARACTERISTICS (75B ~ 105B)

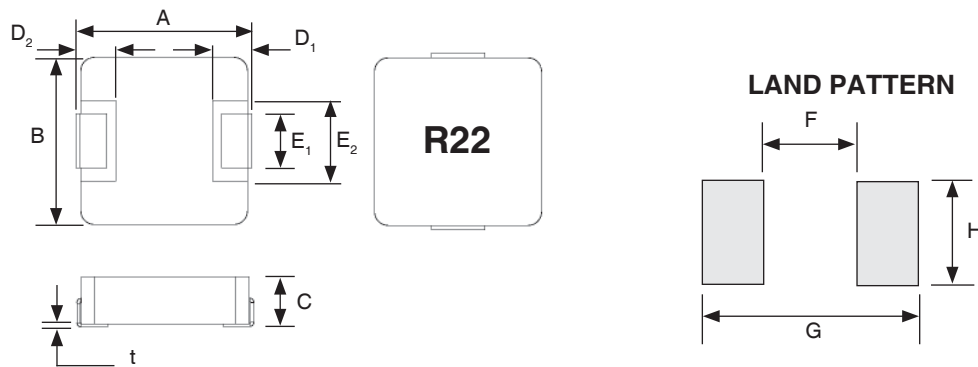
Case Code	75B	103B	104B	105B
Inductance Range (μH)	0.40 ~ 4.7	0.36 ~ 8.2	0.15 ~ 10	2.2 ~ 6.8
Ambient Operating Temperature Range	-55°C ~ +85°C			
Maximum Component Temperature (Ambient + Self-Heating)	+125°C			
Temperature Rise at Irms	+40°C			
Inductance Change at Isat	-30%			
Inductance Tolerance	±20%			
Resistance to Solder Heat	260°C ±5°C for 10 seconds			

PART NUMBER SYSTEM



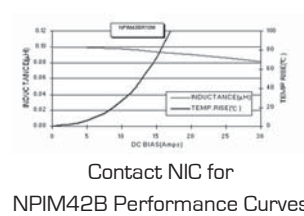
DIMENSIONS (mm)

Series	A	B	C	D ₁	D ₂	E ₁	E ₂	t	F	G	H
NPIM42B	4.15 ± 0.35	4.0 ± 0.3	1.8 ± 0.2	0.8 ± 0.3	1.0 ± 0.1	1.5 ± 0.3	2.2 ± 0.2	0 ~ +0.15	2.2	5.2	2.5
NPIM52B	5.40 ± 0.35	5.2 ± 0.2	1.6 ± 0.2	1.0 ± 0.3	1.5 ± 0.1	2.0 ± 0.3	2.5 ± 0.2	0 ~ +0.15	2.2	6.0	2.5
NPIM53B	4.85 ± 0.35	4.7 ± 0.2	2.8 ± 0.2	1.0 ± 0.3	1.5 ± 0.1	1.5 ± 0.3	2.2 ± 0.2	0 ~ +0.15	3.0	7.0	2.5
NPIM72B	7.05 ± 0.35	6.6 ± 0.2	1.6 ± 0.2	1.6 ± 0.2	2.0 ± 0.1	3.0 ± 0.3	3.6 ± 0.2	0 ~ +0.15	3.7	8.4	3.5
NPIM73B	6.95 ± 0.35	6.6 ± 0.2	2.2 ± 0.2	1.6 ± 0.3	2.0 ± 0.1	3.0 ± 0.3	3.6 ± 0.2	0 ~ +0.15	3.7	8.4	3.5
NPIM74B	6.95 ± 0.35	6.6 ± 0.2	2.8 ± 0.2	1.6 ± 0.3	2.0 ± 0.1	3.0 ± 0.3	3.6 ± 0.2	0 ~ +0.15	3.7	8.4	3.5
NPIM75B	7.05 ± 0.35	6.6 ± 0.2	4.8 ± 0.2	1.6 ± 0.3	2.0 ± 0.1	3.0 ± 0.3	3.6 ± 0.2	0 ~ +0.15	3.7	8.4	3.5
NPIM103B thru NPIM105B	See Individual Case Sizes Tables for These Case Sizes										



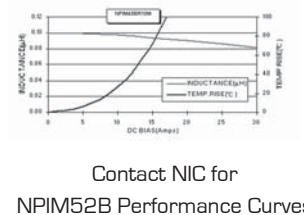
Part Number	STANDARD VALUES - CASE SIZE 42B (4.15 X 4.0 X 1.8mm)				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM42BR10MTRF	0.1	4.0	12	22	100KHz
NPIM42BR22MTRF	0.22	6.6	9.0	12.5	
NPIM42BR47MTRF	0.47	14	7.0	9.5	
NPIM42B1R0MTRF	1.0	27	4.5	7.0	
NPIM42B1R2MTRF	1.2	27	4.5	7.0	
NPIM42B1R5MTRF	1.5	46	4.0	6.0	
NPIM42B2R2MTRF	2.2	58	3.0	5.0	

Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat. Additional values are available outside the standard offering above. Please contact NIC for more details.



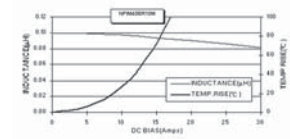
Part Number	STANDARD VALUES - CASE SIZE 52B (5.4 X 5.2 X 1.6mm)				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM52B2R2MTRF	2.2	35	5.0	6.5	100KHz
NPIM52B4R7MTRF	4.7	85	3.5	4.0	
NPIM52B6R8MTRF	6.8	120	2.8	3.4	
NPIM52B100MTRF	10	155	2.5	3.0	

Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat. Additional values are available outside the standard offering above. Please contact NIC for more details.



Part Number	STANDARD VALUES - CASE SIZE 53B (4.85 X 4.7 X 2.8mm)				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM53B1R0MTRF	1.0	14	7	11	100KHz
NPIM53B1R2MTRF	1.2	16	6.5	11	
NPIM53B1R5MTRF	1.5	20	6.0	10	
NPIM53B2R2MTRF	2.2	35	5.5	9.0	
NPIM53B3R3MTRF	3.3	38	5.0	7.0	
NPIM53B4R7MTRF	4.7	60	6.0	5.0	

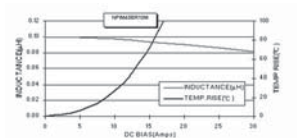
Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat.
 Additional values are available outside the standard offering above. Please contact NIC for more details.



Contact NIC for NPIM53B Performance Curves

Part Number	STANDARD VALUES - CASE SIZE 72B (7.05 X 6.6 X 1.6mm)				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM72BR47MTRF	0.47	8.4	11	18	100KHz
NPIM72B1R0MTRF	1.0	17	7.0	14	
NPIM72B4R7MTRF	4.7	70	3.5	5.0	
NPIM72B6R8MTRF	6.8	110	2.8	3.5	

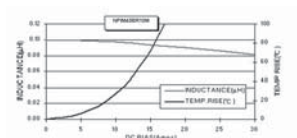
Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat.
 Additional values are available outside the standard offering above. Please contact NIC for more details.



Contact NIC for NPIM72B Performance Curves

Part Number	STANDARD VALUES - CASE SIZE 73B (6.95 X 6.6 X 2.2mm)				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM73BR47MTRF	0.47	5.1	15	22	100KHz
NPIM73BR81MTRF	0.81	9.5	11	14	
NPIM73B1R0MTRF	1.0	13.5	9.0	16	
NPIM73B2R2MTRF	2.2	28	7.0	14	
NPIM73B6R8MTRF	6.8	70	4.0	6.0	

Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat.
 Additional values are available outside the standard offering above. Please contact NIC for more details.

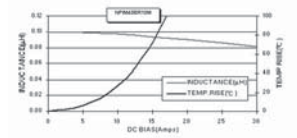


Contact NIC for NPIM73B Performance Curves



Part Number	STANDARD VALUES - CASE SIZE 74B (6.95 X 6.6 X 2.8mm)				Test Frequency
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current I _{rms} (Amps)	DC Current I _{sat} (Amps)	
NPIM74BR10MTRF	0.1	1.7	32.5	60	100KHz
NPIM74BR20MTRF	0.20	3.0	24	41	
NPIM74BR33MTRF	0.33	3.5	21	25	
NPIM74BR47MTRF	0.47	4.1	18	20	
NPIM74BR68MTRF	0.68	5	16	17	
NPIM74B1R0MTRF	1.0	9	12	15	
NPIM74B1R2MTRF	1.2	10	10	14	
NPIM74B1R5MTRF	1.5	12.1	10	14	
NPIM74B2R2MTRF	2.2	18	8.0	10	
NPIM74B3R3MTRF	3.3	28	6.5	10	
NPIM74B4R7MTRF	4.7	35	5.5	6.5	
NPIM74B5R6MTRF	5.6	42	5.5	6.0	
NPIM74B6R8MTRF	6.8	50	4.5	6.0	
NPIM74B8R2MTRF	8.2	60	4.5	6.0	
NPIM74B100MTRF	10	68	4.0	5.5	

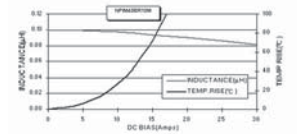
Maximum +40°C temperature rise at I_{rms}. Typical -30% inductance change at I_{sat}.
 Additional values are available outside the standard offering above. Please contact NIC for more details.



Contact NIC for NPIM74B Performance Curves

Part Number	STANDARD VALUES - CASE SIZE 75B (7.05 X 6.6 X 4.8mm)				Test Frequency
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current I _{rms} (Amps)	DC Current I _{sat} (Amps)	
NPIM75BR40MTRF	0.40	3.5	20	23	100KHz
NPIM75BR68MTRF	0.68	4.2	18	16	
NPIM75BR82MTRF	0.82	4.9	16.5	17	
NPIM75B1R0MTRF	1.0	6.5	13	15	
NPIM75B1R2MTRF	1.2	7.5	11	13	
NPIM75B1R5MTRF	1.5	7.5	11	12	
NPIM75B2R2MTRF	2.2	12.5	8.0	12	
NPIM75B3R3MTRF	3.3	20.9	7.0	9.0	
NPIM75B4R7MTRF	4.7	25	6.5	7.0	

Maximum +40°C temperature rise at I_{rms}. Typical -30% inductance change at I_{sat}.
 Additional values are available outside the standard offering above. Please contact NIC for more details.

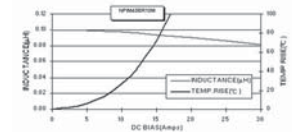


Contact NIC for NPIM75B Performance Curves



Part Number	STANDARD VALUES - CASE SIZE 103B				Test Frequency
	Inductance Value (μH)	DC Resistance ($\text{m}\Omega$)	DC Current I _{rms} (Amps)	DC Current I _{sat} (Amps)	
NPIM103BR36MTRF	0.36	1.6	23	28	100KHz
NPIM103BR47MTRF	0.47	2.5	23	26	
NPIM103BR56MTRF	0.56	3	22	24	
NPIM103BR68MTRF	0.68	3.4	21	23	
NPIM103B1R0MTRF	1.0	6	13	18	
NPIM103B3R3MTRF	3.3	16	9.0	14	
NPIM103B4R7MTRF	4.7	22.5	7.0	13	
NPIM103B8R2MTRF	8.2	45	5.0	8.5	

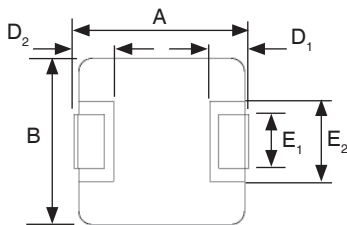
Maximum +40°C temperature rise at I_{rms}. Typical -30% inductance change at I_{sat}.
Additional values are available outside the standard offering above. Please contact NIC for more details.



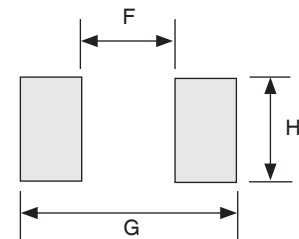
Contact NIC for NPIM103B Performance Curves

NPIM103B CASE AND LAND PATTERN DIMENSIONS

Series	Value	A	B	C	D ₁	D ₂	E ₁	E ₂	t	F	G	H
NPIM103B	R36 ~ 1R0	11.15 ± 0.35	10.0 ± 0.3	2.8 ± 0.2	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	5.0 ± 0.2	0 ~ +0.15	5.4	13.6	4.1
	1R5 ~ 8R2	10.85 ± 0.35	10.0 ± 0.3	2.8 ± 0.2	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	5.0 ± 0.2	0 ~ +0.15	5.4	13.6	4.1

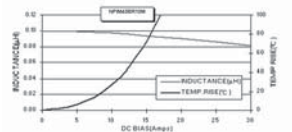


LAND PATTERN



Part Number	STANDARD VALUES - CASE SIZE 104B				Test Frequency
	Inductance Value (μH)	DC Resistance ($\text{m}\Omega$)	DC Current I _{rms} (Amps)	DC Current I _{sat} (Amps)	
NPIM104BR15MTRF	0.15	0.65	40	75	10KHz
NPIM104BR22MTRF	0.22	1.0	35	60	
NPIM104BR36MTRF	0.36	1.2	30	50	
NPIM104BR45MTRF	0.45	1.3	25	27	
NPIM104BR56MTRF	0.56	1.8	25	33	
NPIM104BR68MTRF	0.68	2.4	23	30	
NPIM104B1R0MTRF	1.0	3.3	18	28	
NPIM104B1R5MTRF	1.5	4.2	16	32	
NPIM104B1R8MTRF	1.8	5	15	15	
NPIM104B2R0MTRF	2.0	5.8	14	14	
NPIM104B2R2MTRF	2.2	7.0	12	18	
NPIM104B3R3MTRF	3.3	11.8	10	16	
NPIM104B4R7MTRF	4.7	20	8.5	15	
NPIM104B5R6MTRF	5.6	23	8.0	14	
NPIM104B6R8MTRF	6.8	25	7.0	9.0	
NPIM104B100MTRF	10	30	7.5	8.5	

Maximum +40°C temperature rise at I_{rms}. Typical -30% inductance change at I_{sat}.
Additional values are available outside the standard offering above. Please contact NIC for more details.

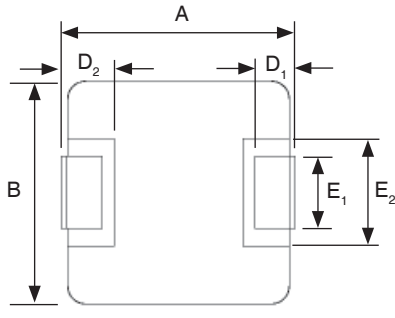


Contact NIC for NPIM104B Performance Curves

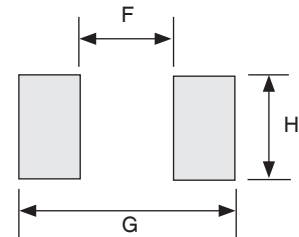


NPIM104S CASE AND LAND PATTERN DIMENSIONS

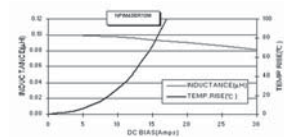
Series	Value	A	B	C	D ₁	D ₂	E ₁	E ₂	t	F	G	H
NPIM104B	R15 ~ 1R5	11.15 ± 0.35	10.0 ± 0.3	3.8 ± 0.2	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	5.0 ± 0.2	0 ~ +0.15	5.4	13.6	4.1
	1R8 ~ 100	10.85 ± 0.35	10.0 ± 0.3	3.8 ± 0.2	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	5.0 ± 0.2	0 ~ +0.15	5.4	13.6	4.1



LAND PATTERN



Part Number	STANDARD VALUES - CASE SIZE 105B				
	Inductance Value (μH)	DC Resistance (mΩ)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPIM105B2R2MTRF	2.2	7.0	14.0	16.0	10KHz
NPIM105B3R3MTRF	3.3	13.2	11.0	14.5	
NPIM105B4R7MTRF	4.7	15.0	10.0	13.0	
NPIM105B6R8MTRF	6.8	24.0	7.5	10.0	

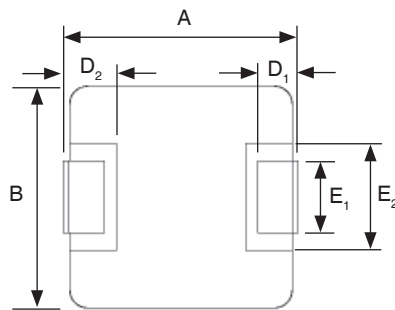


Contact NIC for NPIM105B Performance Curves

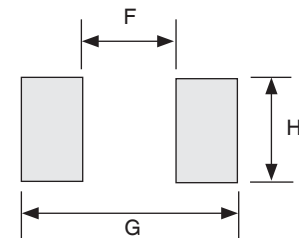
Maximum +40°C temperature rise at Irms. Typical -30% inductance change at Isat. Additional values are available outside the standard offering above. Please contact NIC for more details.

NPIM105B CASE AND LAND PATTERN DIMENSIONS

Series	Value	A	B	C	D ₁	D ₂	E ₁	E ₂	t	F	G	H
NPIM105B	2.2 ~ 6.8	10.85 ± 0.35	10.0 ± 0.3	4.3 ± 0.2	2.0 ± 0.5	2.5 ± 0.1	3.0 ± 0.5	5.0 ± 0.2	0 ~ +0.15	5.4	13.6	4.1

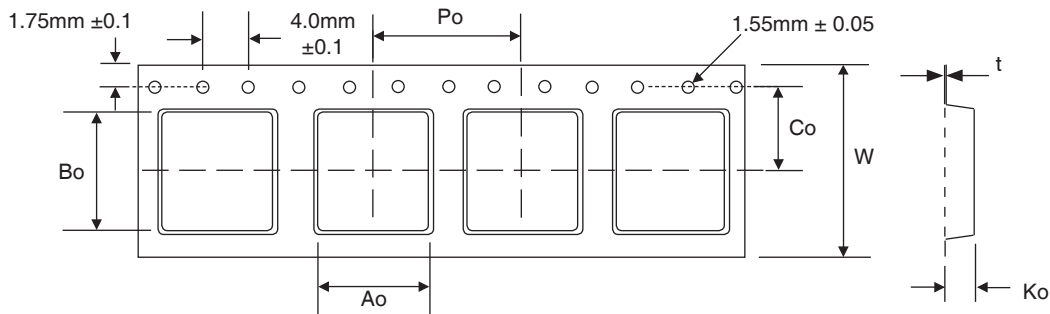


LAND PATTERN



CARRIER TAPE DIMENSIONS (mm)

Series	Part Thickness	Ao	Bo	Co	Po	Ko	t	W
NPIM42B	All	4.2 ± 0.10	4.5 ± 0.10	5.5 ± 0.10	8.0 ± 0.10	2.5 ± 0.15	1.55 ± 0.05	12.0 ± 0.30
NPIM52B	All	5.6 ± 0.10	5.9 ± 0.10	5.5 ± 0.10	8.0 ± 0.10	2.3 ± 0.15	0.35 ± 0.05	12.0 ± 0.30
NPIM53B	All	5.4 ± 0.10	5.2 ± 0.10	7.5 ± 0.10	12.0 ± 0.10	3.6 ± 0.15	0.35 ± 0.05	16.0 ± 0.30
NPIM72B	All	7.2 ± 0.10	7.5 ± 0.10	7.5 ± 0.10	12.0 ± 0.10	2.3 ± 0.10	0.30 ± 0.10	16.0 ± 0.30
NPIM73B	All	7.2 ± 0.10	7.5 ± 0.10	7.5 ± 0.10	12.0 ± 0.10	3.6 ± 0.15	0.30 ± 0.10	16.0 ± 0.30
NPIM74B	All	7.2 ± 0.10	7.5 ± 0.10	7.5 ± 0.10	12.0 ± 0.10	3.6 ± 0.15	0.30 ± 0.10	16.0 ± 0.30
NPIM75B	All	7.2 ± 0.10	7.5 ± 0.10	7.5 ± 0.10	12.0 ± 0.10	3.6 ± 0.15	0.30 ± 0.10	16.0 ± 0.30
NPIM103B	All	10.7 ± 0.10	12.0 ± 0.10	11.5 ± 0.10	16.0 ± 0.10	4.0 ± 0.10	0.35 ± 0.05	24.0 ± 0.30
NPIM104B	3.8mm	10.7 ± 0.10	12.0 ± 0.10	11.5 ± 0.10	16.0 ± 0.10	4.0 ± 0.10	0.35 ± 0.05	24.0 ± 0.30
	4.3mm					4.5 ± 0.10		
NPIM105B	All	13.4 ± 0.10	14.1 ± 0.10	11.5 ± 0.10	16.0 ± 0.10	3.7 ± 0.15	0.35 ± 0.05	24.0 ± 0.30



REEL DIMENSIONS (mm)

Series	A	B	Qty/Reel
NPIM42B	12.5 ± 0.5	2.0 ± 0.2	2,000
NPIM52B	12.5 ± 0.5	2.0 ± 0.2	3,000
NPIM53B	16.0 ± 0.5	2.0 ± 0.2	1,000
NPIM72B	16.0 ± 0.5	2.0 ± 0.2	1,000
NPIM73B	16.0 ± 0.5	2.0 ± 0.2	1,000
NPIM74B	16.0 ± 0.5	2.0 ± 0.2	1,000
NPIM75B	16.0 ± 0.5	2.0 ± 0.2	500
NPIM103B	24.5 ± 0.5	2.0 ± 0.2	500
NPIM104B	24.5 ± 0.5	2.0 ± 0.2	500
NPIM105B	24.5 ± 0.5	2.0 ± 0.2	500

