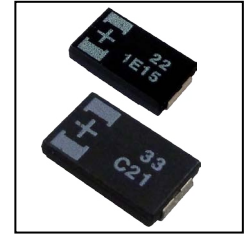


### FEATURES

- Low ESR and High Voltage
- Values from 2.7 $\mu$ F to 150 $\mu$ F
- Voltage Ratings to 35V
- B (3.5mm x 2.8mm) & D Case Size (7.3mm x 4.3mm)



### CHARACTERISTICS

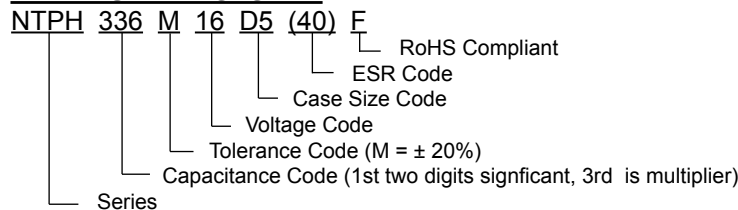
Capacitance Range	2.7 $\mu$ F to 150 $\mu$ F	
Capacitance Tolerance	$\pm$ 20% (M)	
Rated Voltage Range @ 105°C (Vdc)	16Vdc ~ 35Vdc*	
Operating Temperature Range	-55°C ~ +105°C	
Dissipation Factor	See Specifications Table	
Leakage Current @ +25°C (After 5 Minutes at Rated Voltage)		
Impedance Ratio	Z-55°C/Z+20°C within 1.0 ~ 2.0	+105°C Z+105°C/Z+20°C within 0.6 ~ 1.0
Resistance to Soldering Heat (+250°C for 10 Seconds)	$\Delta$ C $\pm$ 10% of initial measured value, LC = Less than 300% of specified max. value DF = Less than 200% of specified max. value	
Moisture Resistance (500 hours; 90~95% RH @ +60°C)	$\Delta$ C -20% ~ +40% of initial measured value, LC = <300% of specified max. value DF = 150% of specified max. value	
Load Life at Rated Voltage (2,000 hours @ 105°C)	$\Delta$ C $\pm$ 20% of initial value, LC = Less than specified max. value DF = 150% of specified max. value	
Base Failure Rate	0.5%/1000 hours at +105°C and rated voltage	

\* Recommended derating is 90% of the rated voltage.

### STANDARD VALUES AND CASE SIZES

Rated Voltage @ +105°C	16	20	25	35	
Surge Voltage @ +15°C ~+35°C	20	23	29	40	
Capacitance ( $\mu$ F)	Code	Case Size	Case Size	Case Size	Case Size
2.7	275	-	-	-	B3
3.9	395	-	-	-	B
5.6	565	-	-	B	-
8.2	825	-	B	-	-
10	106	B	-	-	V
15	156	B	-	B, V	-
22	226	-	B, V	D1, V	-
33	336	D5, V	V	V	-
47	476	D1, V	D1, V	-	-
68	686	V	-	-	-
100	107	V	D	-	-
150	157	D	-	-	-

### PART NUMBER SYSTEM



### PRECAUTIONS

Please review the notes on correct use, safety and precautions found on pages T10 & T11 of NIC's Electrolytic Capacitor catalog.  
Also found at [www.niccomp.com/precautions](http://www.niccomp.com/precautions)  
If in doubt or uncertainty, please review your specific application - process details with NIC's technical support personnel: [tpmg@niccomp.com](mailto:tpmg@niccomp.com)

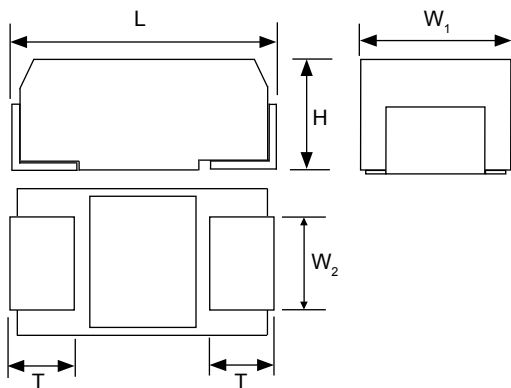


### STANDARD PART NUMBERS AND SPECIFICATIONS

NIC Part Number	Capacitance Value (μF)	Rated Voltage (Vdc) +105°C	Leakage Current (μA) after 5 minutes	Dissipation Factor @ +20°C/120Hz	ESR (mΩ) @+20°C/100KHz	Ripple Current Rating (mA) @ +105°C 100KHz ~ 500KHz	
NTPH106M16B(100)F	10	16	48.0	0.10	100	800	
NTPH156M16B(90)F	15		72.0	0.10	90	1,000	
NTPH336M16D5(40)F	33		52.8	0.10	40	1,800	
NTPH336M16V(70)F	33		52.8	0.10	70	1,400	
NTPH476M16D1(55)F	47		75.2	0.10	55	1,500	
NTPH476M16V(55)F	47		75.2	0.10	55	1,450	
NTPH476M16V(40)F	47		75.2	0.10	40	1,800	
NTPH686M16V(50)F	68		108.8	0.10	50	1,500	
NTPH107M16V(50)F	100		160.0	0.10	50	1,800	
NTPH157M16D(50)F	150		240.0	0.10	50	1,800	
NTPH825M20B(100)F	8.2	20	49.2	0.10	100	800	
NTPH226M20B(90)F	22		132.0	0.10	90	1,000	
NTPH226M20V(80)F	22		44.0	0.10	80	1,300	
NTPH336M20V(60)F	33		66.0	0.10	60	1,400	
NTPH476M20D1(55)F	47		94.0	0.10	55	1,500	
NTPH476M20V(55)F	47		94.0	0.10	55	1,450	
NTPH107M20D(55)F	100		200.0	0.10	55	1,700	
NTPH565M25B(100)F	5.6	25	42.0	0.10	100	800	
NTPH156M25B(100)F	15		112.5	0.10	100	900	
NTPH156M25V(90)F	15		38.0	0.10	90	1,000 100KHz ≤ 300KHz	
NTPH156M25V(45)F	15		38.0	0.10	45	1,500 100KHz ≤ 300KHz	
NTPH226M25D1(70)F	22		55.0	0.10	70	1,400	
NTPH226M25V(60)F	22		55.0	0.10	60	1,400	
NTPH226M25V(45)F	22		55.0	0.10	45	1,500 100KHz ≤ 300KHz	
NTPH336M25V(60)F	33		82.5	0.10	60	1,400	
NTPH275M35B3(300)F	2.7		35	47.3	0.10	300	800
NTPH395M35B(400)F	3.9			40.9	0.10	400	500
NTPH106M35V(120)F	10	35.0		0.10	120	1,000	

### CASE DIMENSIONS (mm)

Case Size	L	H	W <sub>1</sub>	W <sub>2</sub>	T
B3	3.5 ± 0.2	1.4 ± 0.1	2.8 ± 0.2	2.2 ± 0.1	0.8 ± 0.2
B	3.5 ± 0.2	1.9 ± 0.1	2.8 ± 0.2	2.2 ± 0.1	0.8 ± 0.2
D1	7.3 ± 0.2	1.4 ± 0.1	4.3 ± 0.2	2.4 ± 0.1	1.3 ± 0.2
D	7.3 ± 0.3	2.8 ± 0.2	4.3 ± 0.2	2.4 ± 0.1	1.3 ± 0.2
D5	7.3 ± 0.2	1.15 ± 0.05	4.3 ± 0.2	2.4 ± 0.1	1.3 ± 0.2
V	7.3 ± 0.2	1.9 ± 0.1	4.3 ± 0.2	2.4 ± 0.1	1.3 ± 0.2



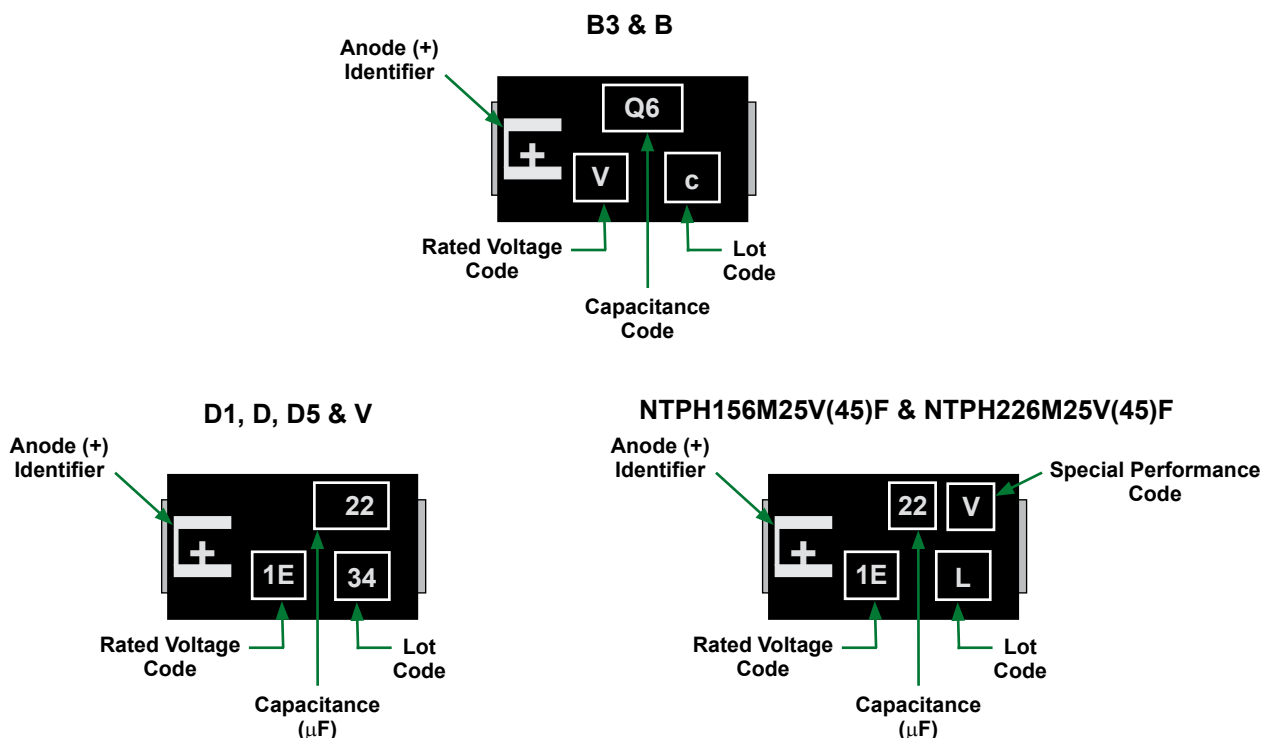
### VOLTAGE CODES

C	D	1E*	V
16V	20V	25V	35V

Letter "E" for B3 and B case sizes

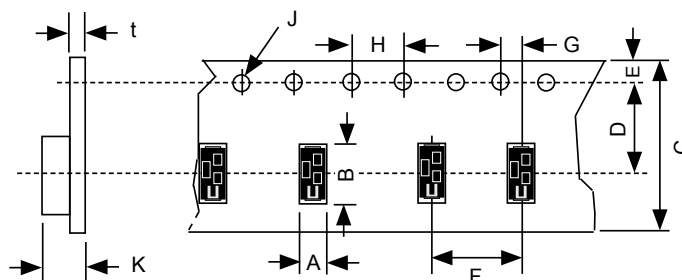
### B3 and B CASE SIZE CAPACITANCE CODES

Code	L6	Q6	U6	Y6	A7	E7	J7
Cap. (μF)	2.7	3.9	5.6	8.2	10	15	22



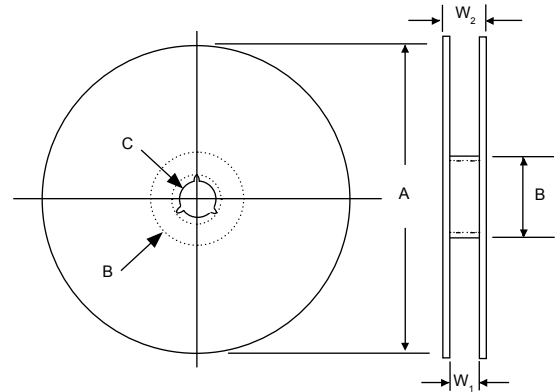
### CARRIER DIMENSIONS AND REEL QUANTITIES

Case Size	A ±0.1	B ±0.1	C ±0.3	D ±0.1	E ±0.1	F ±0.1	G ±0.1	H ±0.1	J -0.0/+0.1	K ±0.2	t ±0.1	Reel Quantity	
												180mm Reel	336Mm Reel
B3	3.3	3.8	8.0	3.5	1.75	4.0	2.0	4.0	φ1.5	2.1	0.20	2,000	n/a
B	3.3	3.8	8.0	3.5	1.75	4.0	2.0	4.0	φ1.5	2.1	0.25	2,000	n/a
D1	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	φ1.5	2.4	0.30	n/a	3,000
D	4.5	7.7	12.0	5.5	1.75	8.0	2.0	4.0	φ1.5	3.2	0.30	n/a	2,500
D5	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	φ1.5	1.7	0.30	n/a	4,500
V	4.5	7.5	12.0	5.5	1.75	8.0	2.0	4.0	φ1.5	2.4	0.30	n/a	3,000



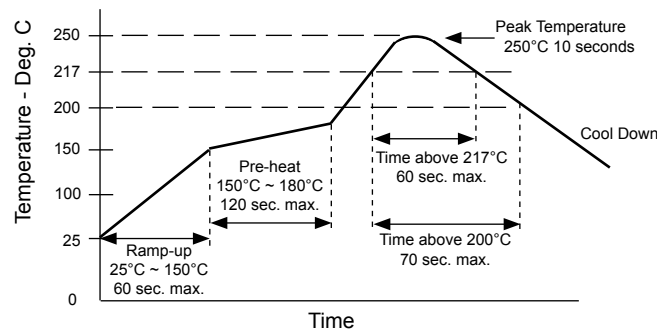
### REEL SPECIFICATIONS (mm)

Tape Width	A	B ± 2.0	C ± 0.2	W <sub>1</sub> ± 0.5	W <sub>2</sub> ± 1.0
8mm	φ180 -0/+3	φ60	φ13	9.0	11.4
12mm	φ330 ±2.0	φ80	φ13	13.5	17.5



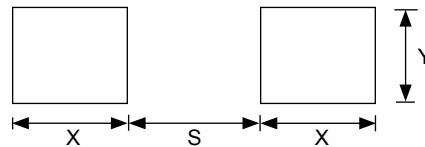
### MAXIMUM OF 2 REFLOW PASSES UNDER BELOW CONDITIONS

#### 250°C REFLOW TEMPERATURES/DURATIONS



### RECOMMENDED LAND PATTERN (mm)

Case Size	S max.	X min.	Y min.
B3, B	1.4	1.6	2.7
D1, D, D5, V	3.7	2.4	2.9



1. NTPH parts are moisture sensitive (MSL 3) and are shipped in moisture control bags. After opening the bag capacitors should be stored at ≤30°C, relative humidity of ≤60% maximum and soldered within 168 hours.

#### 250°C PEAK REFLOW TEMPERATURE

Case Size	Time	Conditions	MSL
All Sizes	168 hours	<30°C/60% RH	3

2. The parts should be soldered using the minimum amount of heat required.