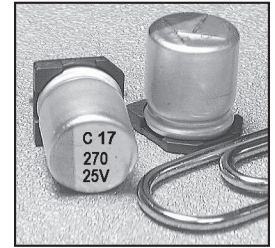


- CYLINDRICAL V-CHIP CONSTRUCTION FOR SURFACE MOUNTING
- EXTENDED LOAD LIFE AT HIGH TEMPERATURE (4,000 HOURS @ +125°C)
- INCREASED CAPACITANCE VALUE PER CASE SIZE
- LOW ESR AND HIGH RIPPLE CURRENT RATINGS
- 8x10.5mm ~ 10x12.5mm CASE SIZES
- HIGH REFLOW SOLDERING RATED TO +260°C
- MEETS THE REQUIREMENTS OF AEC-Q200\*



\*Contact NIC for supporting test data

### CHARACTERISTICS

Rated Voltage Range	25 ~ 35Vdc	
Rated Capacitance Range	180 ~ 560μF	
Operating Temp. Range	-55 ~ +125°C	
Capacitance Tolerance	±20% (M)	
Max. Leakage Current After 2 Minutes @ 20°C	0.01CV max.	
Working and Surge Voltage Ratings	W.V. (Vdc)	25      35
	S.V. (Vdc)	32      44
Tan δ @ 120Hz/20°C	0.16      0.14	
Impedance Ratio	Z -55°C/Z +20°C	1 ~ 2.5
	Z +125°C/Z +20°C	0.6 ~ 1.0
Load Life Test @ 125°C and Rated Voltage	W.V. (Vdc)	25      35
	φ8mm & φ10mm Dia.	4000 hrs.
	Capacitance Change	Within ±30% of initial measured value
	Tan δ and ESR	Less than 200% of specified max. value
	Leakage Current	Less than specified max. value
	ESR	Less than 200% of specified max. value
Resistance to Soldering Heat	After reflow soldering and stabilizing at +20°C capacitors shall meet the following limits.	
	Capacitance Change	Within ±10% of the initial measured value
	Dissipation Factor	Less than specified value
	Leakage Current	Less than specified value
	ESR	Less than 130% of specified value

Available with Wide Anti-Vibration Terminations

### STANDARD PRODUCTS AND CASE SIZES Dφ x L (mm)

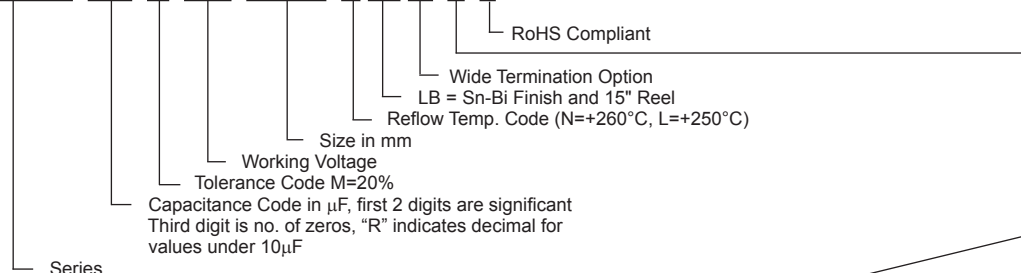
PART NUMBER	Cap. (μF)	Working Voltage	Case Size (D X L) mm	Max. ESR (mΩ) AT 100kHz/20°C	Max. Ripple Current (mA rms) AT 100kHz/125°C	Load Life Hours (+125°C)
NSPE-TC271M25V8X10.5NLBYF	270	25	8X10.5	33	1950	4000
NSPE-TC471M25V10X10.5NLBYF	470		10X10.5	24	2800	4000
NSPE-TC561M25V10X12.5NLBYF	560		10X12.5	20	3000	4000
NSPE-TC181M35V8X10.5NLBYF	180	35	8X10.5	33	1950	4000
NSPE-TC331M35V10X10.5NLBYF	330		10X10.5	24	2800	4000
NSPE-TC391M35V10X12.5NLBYF	390		10X12.5	20	3000	4000

### RIPPLE CURRENT FREQUENCY CORRECTION FACTOR

Frequency	100Hz ≤ 1KHz	1KHz ≤ 10KHz	10KHz ≤ 50KHz	50K ≤ 100KHz	100K ≤ 500KHz
Correction Factor	0.10	0.35	0.65	0.90	1.00

### PART NUMBER SYSTEM

NSPE-TC 271 M 25V 8x10.5 N LB W Y F

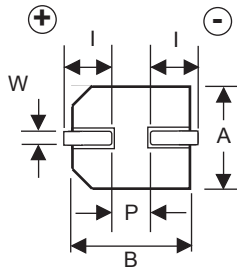
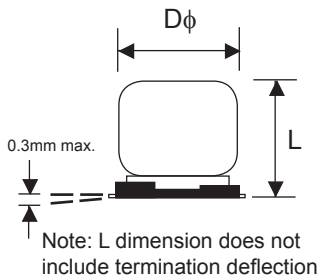


Suitable for automotive equipment, sourced to special production and inspection at IATF-16949 certified production site

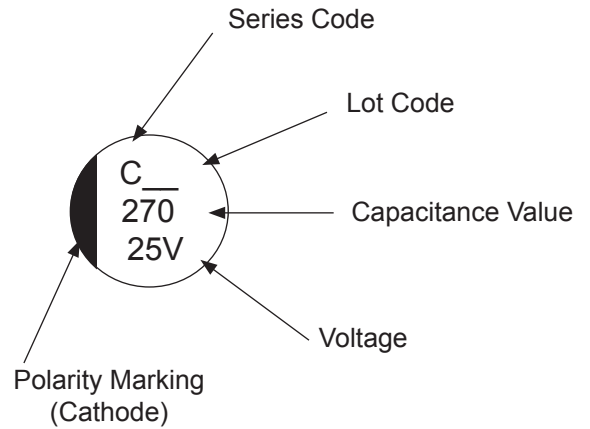


### DIMENSIONS (mm)

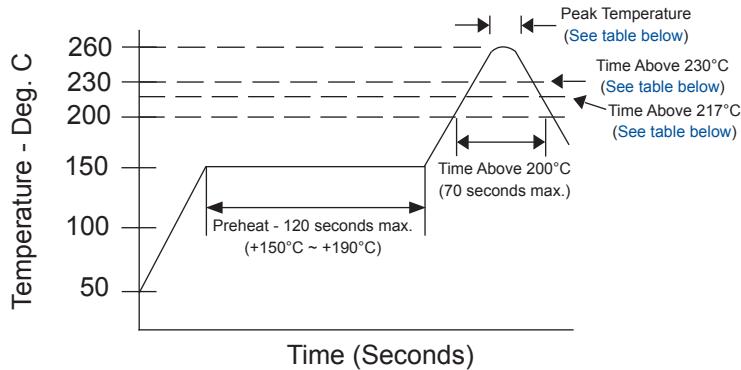
Case Size	D $\phi$ $\pm 0.5$	L max.	A, B $\pm 0.2$	W	I $\pm 0.3$	(P)
8x10.5	8.0	10.5	8.3	0.7 ~ 1.0	2.9	3.2
10x10.5	10	10.5	10.3	1.0 ~ 1.4	3.2	4.6
10x12.5	10	12.5	10.3	1.0 ~ 1.4	3.2	4.6



### Part Marking

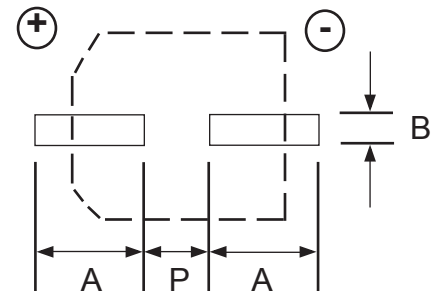


### RECOMMENDED REFLOW SOLDERING PROFILE\*



### LAND PATTERN DIM. (mm)

Case Dia.	A	B	P
8	4.1	2.1	2.8
10	4.4	2.5	4.3



### PEAK TEMPERATURE AND DURATION

Rated Voltage/Diameter	Time Above +200°C	Time Above +217°C	Time Above +230°C	Peak Temperature	Reflow Cycles
8.0mm ~ 10mm	70 sec. max.	40 sec. max.	30 sec. max.	+260°C	1
	70 sec. max.	50 sec. max.	40 sec. max.	+245°C	2*

\*Two reflow passes are permissible with a natural cool down to room temperature required between the first and second pass.

### PRECAUTIONS

Please review the notes on correct use, safety and precautions found at <https://www.niccomp.com/resource/files/aluminum/AlumApplInfoCautions.pdf>  
 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)

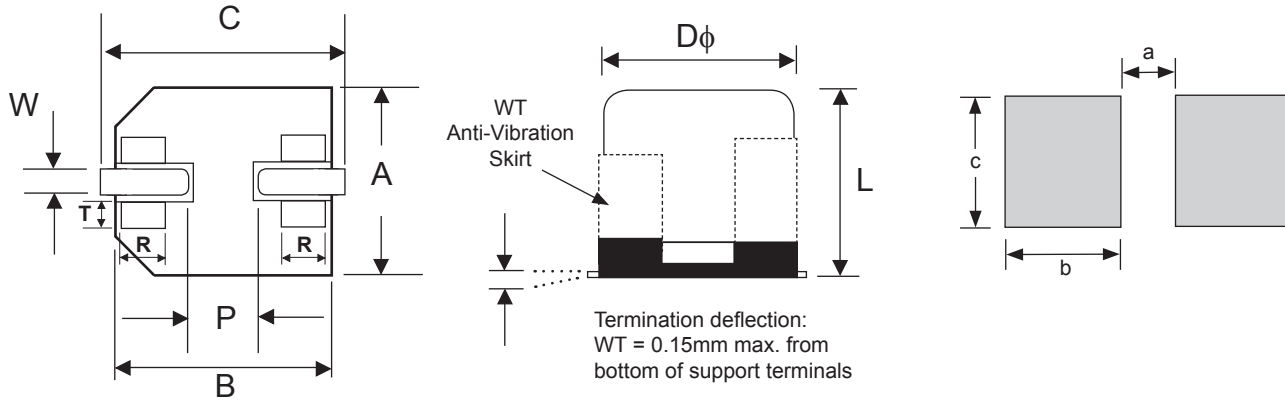


## WIDE TERMINATION DIM. (mm)

Case Size	D $\phi$ $\pm$ 0.5	L max.	A, B	C $\pm$ 0.2	P	W	R	T
8 x 10.5WT	8.0	11.2	8.3 $\pm$ 0.2	9.0	(3.2)	0.7 ~ 1.0	(0.7)	(1.3)
10 x 10.5WT	10.0	11.2	10.3 $\pm$ 0.2	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)
10 x 12.5WT	10.0	13.5	10.3 $\pm$ 0.2	11.0	(4.6)	1.0 ~ 1.4	(0.7)	(1.3)

## WIDE TERMINATION LAND PATTERN DIM. (mm)

Case Size	a	b	c
8x10.5	2.5	4.5	4.7
10x10.5	3.8	4.8	4.7
10x12.5	3.8	4.8	4.7

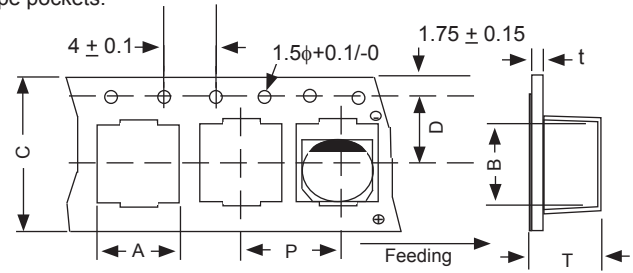


W (Wide Terminations) Anti-Vibration Test	
Test Method	Direction: X, Y, Z axis Frequency & Duration: 5 to 2000Hz reciprocation for 20 minutes, 2 hours each direction Peak to Peak Amplitude: 5mm Peak Acceleration: 30G Sweep Type: Log
$\Delta$ Capacitance	Within $\pm$ 10% of initial value
Tangent of Loss	$\leq$ Specified value
Leakage Current	$\leq$ Specified value

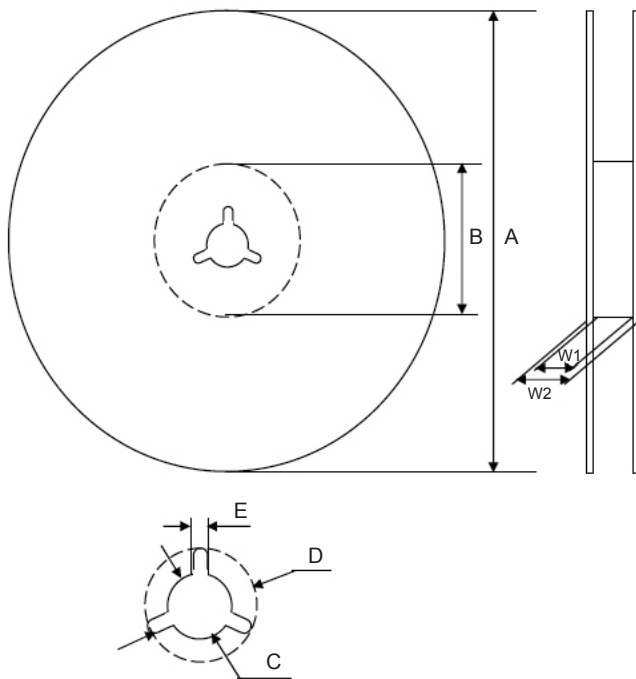
## TAPING SPECIFICATIONS (mm)

- Both Leader and Trailer tape: Minimum 40mm (1.57") empty carrier tape pockets.
- Leader tape: Approximately 20cm of cover tape at leader.
- Connection: Maximum 3 connections (slices) per reel.

Case Size	A ±0.5	B ±0.5	C ±0.3	D ±0.1	P ±0.1	T ±0.2	t max.
8x10.5	8.7	8.7	24.0	11.5	16.0	11.1	0.6
10x10.5	10.7	10.7	24.0	11.5	16.0	11.2	0.6
10x12.5	10.7	10.7	24.0	11.5	16.0	13.3	0.6



## V-Chip 15" (380mm) Reels (LB suffix)



### Dimensions (mm)

Tape Width	W1	W2
24.0	24.5 ~ 26.5	27.5 ~ 32.0

Case Size	Tape Width	A	B	C	D	E
8x10.5, 10x10.5, 10x12.5	24.0	$\phi 380 \pm 2$	$\phi 80 \sim 105$	$\phi 13 \pm 0.5$	$\phi 21 \pm 1.0$	2.0 ± 0.5

Color
Black

### Reel Quantity

Case Size	W +3/-1	Qty per Reel 15" (380mm)
8x10.5	26	500
10x10.5	26	500
10x12.5	26	400