Issued: August 5th 2016

SUB: EOL Notice

Product Type: Radial Leaded Aluminum Electrolytic Capacitors; -55°C ~ +105°C, Low Impedance
NIC Series: **NRSX** series
Product Specification: http://www.niccomp.com/catalog/nrsx.pdf
Notification: End of Life (See table below for EOL part numbers)

The following is notice of end of life for the part numbers referenced in table below:

Last Order Date: March 31st 2017 for existing business from established customers
Last Ship Date: August 5th 2017 for existing business from established customers

Reason for Discontinuation: Due to low demand, production allocated to alternate products series

Use **Quickbuilder** to compare and select **alternate** aluminum electrolytic capacitor part numbers and specifications:
Quickbuilder Search Tool [link: http://www.niccomp.com/QuickBUILDER2/qb_capacitor.php?pType=aluminum]

EOL Part Number	Cap.	Voltage	Size
NRSX270M6.3V4X7F	27uF	6.3V	4X7
NRSX560M6.3V5X7F	56uF	6.3V	5X7
NRSX101M6.3V5X11F	100uF	6.3V	5X11
NRSX121M6.3V6.3X7F	120uF	6.3V	6.3X7
NRSX221M6.3V6.3X11F	220uF	6.3V	6.3X11
NRSX271M6.3V6.3X11F	270uF	6.3V	6.3X11
NRSX331M6.3V6.3X11F	330uF	6.3V	6.3X11
NRSX391M6.3V8X11.5F	390uF	6.3V	8X11.5
NRSX471M6.3V8X11.5F	470uF	6.3V	8X11.5
NRSX561M6.3V8X12.5F	560uF	6.3V	8X12.5
NRSX821M6.3V8X15F	820uF	6.3V	8X15
NRSX821M6.3V10X12.5F	820uF	6.3V	10X12.5
NRSX122M6.3V10X16F	1200uF	6.3V	10X16
NRSX152M6.3V10X20F	1500uF	6.3V	10X20
NRSX152M6.3V12.5X16F	1500uF	6.3V	12.5X16
NRSX182M6.3V10X22F	1800uF	6.3V	10X22
NRSX222M6.3V10X22F	2200uF	6.3V	10X22
NRSX272M6.3V12.5X20F	2700uF	6.3V	12.5X20
NRSX332M6.3V12.5X20F	3300uF	6.3V	12.5X20
NRSX392M6.3V12.5X25F	3900uF	6.3V	12.5X25
NRSX562M6.3V12.5X25F	5600uF	6.3V	12.5X25
NRSX682M6.3V16X25F	6800uF	6.3V	16X25

EOL Part Number	Cap.	Voltage	Size
NRSX822M6.3V16X31.5F	8200uF	6.3V	16X31.5
NRSX103M6.3V16X35F	10000uF	6.3V	16X35
NRSX123M6.3V18X35.5F	12000uF	6.3V	18X35.5
NRSX153M6.3V18X35.5F	15000uF	6.3V	18X35.5
NRSX220M10V4X7F	22uF	10V	4X7
NRSX390M10V5X7F	39uF	10V	5X7
NRSX820M10V5X11F	82uF	10V	5X11
NRSX820M10V6.3X7F	82uF	10V	6.3X7
NRSX101M10V5X11F	100uF	10V	5X11
NRSX151M10V6.3X11F	150uF	10V	6.3X11
NRSX181M10V6.3X11F	180uF	10V	6.3X11
NRSX221M10V6.3X11F	220uF	10V	6.3X11
NRSX331M10V8X11.5F	330uF	10V	8X11.5
NRSX391M10V8X12.5F	390uF	10V	8X12.5
NRSX471M10V8X12.5F	470uF	10V	8X12.5
NRSX561M10V10X12.5F	560uF	10V	10X12.5
NRSX681M10V8X15F	680uF	10V	8X15
NRSX681M10V10X12.5F	680uF	10V	10X12.5
NRSX821M10V10X16F	820uF	10V	10X16
NRSX102M10V10X16F	1000uF	10V	10X16
NRSX122M10V10X20F	1200uF	10V	10X20
NRSX122M10V12.5X16F	1200uF	10V	12.5X16
NRSX152M10V10X22F	1500uF	10V	10X22
NRSX182M10V12.5X20F	1800uF	10V	12.5X20
NRSX222M10V12.5X20F	2200uF	10V	12.5X20
NRSX272M10V12.5X25F	2700uF	10V	12.5X25
NRSX332M10V12.5X25F	3300uF	10V	12.5X25
NRSX392M10V16X25F	3900uF	10V	16X25
NRSX472M10V16X25F	4700uF	10V	16X25
NRSX562M10V16X25F	5600uF	10V	16X25
NRSX682M10V16X31.5F	6800uF	10V	16X31.5
NRSX822M10V16X35F	8200uF	10V	16X35
NRSX103M10V18X35.5F	10000uF	10V	18X35.5
NRSX150M16V4X7F	15uF	16V	4X7
NRSX270M16V5X7F	27uF	16V	5X7
NRSX470M16V5X11F	47uF	16V	5X11
NRSX560M16V5X11F	56uF	16V	5X11
NRSX560M16V6.3X7F	56uF	16V	6.3X7
NRSX680M16V5X11F	68uF	16V	5X11

EOL Part Number	Cap.	Voltage	Size
NRSX101M16V6.3X11F	100uF	16V	6.3X11
NRSX121M16V6.3X11F	120uF	16V	6.3X11
NRSX221M16V8X11.5F	220uF	16V	8X11.5
NRSX271M16V8X12.5F	270uF	16V	8X12.5
NRSX331M16V8X12.5F	330uF	16V	8X12.5
NRSX391M16V10X12.5F	390uF	16V	10X12.5
NRSX471M16V8X15F	470uF	16V	8X15
NRSX471M16V10X12.5F	470uF	16V	10X12.5
NRSX561M16V10X16F	560uF	16V	10X16
NRSX681M16V10X16F	680uF	16V	10X16
NRSX821M16V10X20F	820uF	16V	10X20
NRSX821M16V12.5X16F	820uF	16V	12.5X16
NRSX102M16V10X22F	1000uF	16V	10X22
NRSX122M16V10X22F	1200uF	16V	10X22
NRSX152M16V12.5X20F	1500uF	16V	12.5X20
NRSX182M16V12.5X25F	1800uF	16V	12.5X25
NRSX222M16V12.5X25F	2200uF	16V	12.5X25
NRSX222M16V16X25F	2200uF	16V	16X25
NRSX272M16V16X25F	2700uF	16V	16X25
NRSX392M16V16X25F	3900uF	16V	16X25
NRSX472M16V16X31.5F	4700uF	16V	16X31.5
NRSX562M16V16X35F	5600uF	16V	16X35
NRSX682M16V16X35F	6800uF	16V	16X35
NRSX822M16V18X35.5F	8200uF	16V	18X35.5
NRSX100M25V4X7F	10uF	25V	4X7
NRSX220M25V5X7F	22uF	25V	5X7
NRSX390M25V5X11F	39uF	25V	5X11
NRSX390M25V6.3X7F	39uF	25V	6.3X7
NRSX470M25V5X11F	47uF	25V	5X11
NRSX820M25V6.3X11F	82uF	25V	6.3X11
NRSX101M25V6.3X11F	100uF	25V	6.3X11
NRSX181M25V8X12.5F	180uF	25V	8X12.5
NRSX221M25V8X12.5F	220uF	25V	8X12.5
NRSX271M25V10X12.5F	270uF	25V	10X12.5
NRSX331M25V8X15F	330uF	25V	8X15
NRSX331M25V10X12.5F	330uF	25V	10X12.5
NRSX391M25V10X16F	390uF	25V	10X16
NRSX471M25V10X16F	470uF	25V	10X16
NRSX561M25V10X20F	560uF	25V	10X20
NRSX561M25V12.5X16F	560uF	25V	12.5X16

EOL Part Number	Cap.	Voltage	Size
NRSX681M25V10X22F	680uF	25V	10X22
NRSX821M25V10X22F	820uF	25V	10X22
NRSX821M25V12.5X20F	820uF	25V	12.5X20
NRSX102M25V12.5X20F	1000uF	25V	12.5X20
NRSX122M25V12.5X25F	1200uF	25V	12.5X25
NRSX152M25V12.5X25F	1500uF	25V	12.5X25
NRSX182M25V16X25F	1800uF	25V	16X25
NRSX222M25V16X25F	2200uF	25V	16X25
NRSX272M25V16X25F	2700uF	25V	16X25
NRSX332M25V16X31.5F	3300uF	25V	16X31.5
NRSX392M25V16X35F	3900uF	25V	16X35
NRSX472M25V18X35.5F	4700uF	25V	18X35.5
NRSX6R8M35V4X7F	6.8uF	35V	4X7
NRSX120M35V5X7F	12uF	35V	5X7
NRSX220M35V5X11F	22uF	35V	5X11
NRSX270M35V5X11F	27uF	35V	5X11
NRSX270M35V6.3X7F	27uF	35V	6.3X7
NRSX330M35V5X11F	33uF	35V	5X11
NRSX470M35V6.3X11F	47uF	35V	6.3X11
NRSX560M35V6.3X11F	56uF	35V	6.3X11
NRSX680M35V6.3X11F	68uF	35V	6.3X11
NRSX101M35V8X11.5F	100uF	35V	8X11.5
NRSX121M35V8X12.5F	120uF	35V	8X12.5
NRSX151M35V8X12.5F	150uF	35V	8X12.5
NRSX181M35V10X12.5F	180uF	35V	10X12.5
NRSX221M35V8X15F	220uF	35V	8X15
NRSX221M35V10X12.5F	220uF	35V	10X12.5
NRSX271M35V10 X16F	270uF	35V	10 X16
NRSX391M35V10X20F	390uF	35V	10X20
NRSX471M35V10X22F	470uF	35V	10X22
NRSX561M35V10X22F	560uF	35V	10X22
NRSX561M35V12.5X20F	560uF	35V	12.5X20
NRSX681M35V12.5X20F	680uF	35V	12.5X20
NRSX821M35V12.5X25F	820uF	35V	12.5X25
NRSX102M35V12.5X25F	1000uF	35V	12.5X25
NRSX122M35V12.5X25F	1200uF	35V	12.5X25
NRSX152M35V16X25F	1500uF	35V	16X25
NRSX182M35V16X25F	1800uF	35V	16X25
NRSX222M35V16X31.5F	2200uF	35V	16X31.5
NRSX272M35V16X35F	2700uF	35V	16X35

EOL Part Number	Cap.	Voltage	Size
NRSX332M35V18X35.5F	3300uF	35V	18X35.5
NRSX1R0M50V5X11F	1uF	50V	5X11
NRSX2R2M50V5X11F	2.2uF	50V	5X11
NRSX3R3M50V5X11F	3.3uF	50V	5X11
NRSX4R7M50V5X11F	4.7uF	50V	5X11
NRSX100M50V5X11F	10uF	50V	5X11
NRSX150M50V5X11F	15uF	50V	5X11
NRSX220M50V5X11F	22uF	50V	5X11
NRSX330M50V6.3X11F	33uF	50V	6.3X11
NRSX470M50V6.3X11F	47uF	50V	6.3X11
NRSX680M50V8X11.5F	68uF	50V	8X11.5
NRSX101M50V10X12.5F	100uF	50V	10X12.5
NRSX151M50V10X16F	150uF	50V	10X16
NRSX221M50V10X20F	220uF	50V	10X20
NRSX221M50V12.5X16F	220uF	50V	12.5X16
NRSX331M50V10X22F	330uF	50V	10X22
NRSX331M50V12.5X20F	330uF	50V	12.5X20
NRSX471M50V12.5X20F	470uF	50V	12.5X20
NRSX681M50V12.5X25F	680uF	50V	12.5X25
NRSX102M50V16X25F	1000uF	50V	16X25
NRSX152M50V16X35F	1500uF	50V	16X35
NRSX222M50V18X35.5F	2200uF	50V	18X35.5

Prepared by: Technical Product Marketing Group / tpmg@niccomp.com

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Miniature Aluminum Electrolytic Capacitors

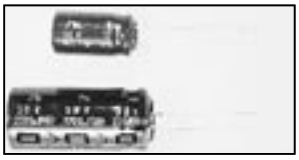
NRSX Series

VERY LOW IMPEDANCE AT HIGH FREQUENCY, RADIAL LEADS, POLARIZED ALUMINUM ELECTROLYTIC CAPACITORS

RoHS Compliant

includes all homogeneous materials

*See Part Number System for Details



FEATURES

- VERY LOW IMPEDANCE
- LONG LIFE AT 105°C (1000 ~ 7000 hrs.)
- HIGH STABILITY AT LOW TEMPERATURE
- IDEALLY SUITED FOR USE IN SWITCHING POWER SUPPLIES & CONVERTERS

CHARACTERISTICS

Rated Voltage Range		6.3 ~ 50 VDC						
Capacitance Range		1.0 ~ 15,000µF						
Operating Temperature Range		-55 ~ +105°C						
Capacitance Tolerance		± 20% (M)						
Max. Leakage Current @ (20°C)	After 1 min.	0.03CV or 4µA, whichever if greater						
	After 2 min.	0.01CV or 3µA, whichever if greater						
Max. Tan δ @ 120Hz/20°C		W.V. (Vdc)	6.3	10	16	25	35	50
		S.V. (Vdc)	8	13	20	32	44	63
		C < 1,200µF	0.22	0.19	0.16	0.14	0.12	0.10
		C = 1,500µF	0.23	0.20	0.17	0.15	0.13	0.11
		C = 1,800µF	0.23	0.20	0.17	0.15	0.13	0.11
		C = 2,200µF	0.24	0.21	0.18	0.16	0.14	0.12
		C = 2,700µF	0.25	0.22	0.19	0.17	0.15	
		C = 3,300µF	0.26	0.23	0.20	0.18	0.16	
		C = 3,900µF	0.27	0.24	0.21	0.19		
		C = 4,700µF	0.28	0.25	0.22	0.20		
		C = 5,600µF	0.30	0.27	0.24			
		C = 6,800µF	0.32	0.29	0.26			
		C = 8,200µF	0.35	0.32	0.29			
		C = 10,000µF	0.38	0.35				
		C = 12,000µF	0.42					
		C = 15,000µF	0.48					
Low Temperature Stability Impedance Ratio @ 120Hz		Z-25°C/Z+20°C	3	2	2	2	2	2
		Z-40°C/Z+20°C	4	4	3	3	3	2
Load Life Test at Rated W.V. & 105°C 7,000 Hours: 16 ~ 18∅ 5,000 Hours: 12.5∅ 4,000 Hours: 10∅ 3,000 Hours: 6.3 ~ 8∅ 2,500 Hours: 5 ∅ 1,000 Hours: 4∅		Capacitance Change	Within ±20% of initial measured value					
		Tan δ	Less than 200% of specified maximum value					
		Leakage Current	Less than specified maximum value					
Shelf Life Test 105°C 1,000 Hours No Load		Capacitance Change	Within ±20% of initial measured value					
		Tan δ	Less than 200% of specified maximum value					
		Leakage Current	Less than specified maximum value					
Max. Impedance at 100Khz & -20°C		Less than 2 times the impedance at 100Khz & +20°C						
Applicable Standards		JIS C5141, C5102 and IEC 384-4						

PART NUMBER SYSTEM

NRSX 101 M 25V 6.3X11 TB F

- F — RoHS Compliant
- TB = Tape & Box (optional)
- 6.3X11 — Case Size (mm)
- 25V — Working Voltage
- M — Tolerance Code M=20%, K=10%
- 101 — Capacitance Code in µF
- NRSX — Series

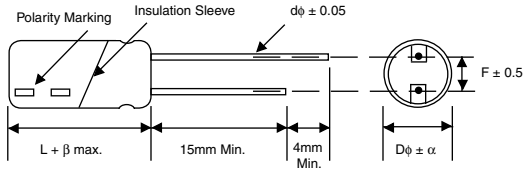
RIPPLE CURRENT CORRECTION FACTOR

Cap. (µF)	Frequency (Hz)			
	120	1K	10K	100K
1.0 ~ 330	0.40	0.68	0.78	1.00
390 ~ 1000	0.50	0.76	0.87	1.00
1200 ~ 2200	0.70	0.85	0.90	1.00
2700 ~ 15000	0.90	0.95	1.00	1.00

Drawing is representative of parts as supplied in bulk or straight lead format, please see taping specifications for details on taped format packaging.

LEADSPACING AND DIAMETER (mm)

Case Dia.	4x7	5x7	6.3x7	5x11	6.3x11	8ϕ	10 ~ 12.5ϕ	16 ~ 18ϕ
Lead Space(F)	1.5	2.0	2.5	2.0	2.5	3.5	5.0	7.5
Lead Dia. (dϕ)	0.45			0.5		0.6		0.8



$\beta = 1.5\ L < 20$ or $2.0\ L \geq 20$

SLEEVE COLOR: DARK BROWN

STANDARD PRODUCTS, CASE SIZES AND SPECIFICATIONS

W.V. (Vdc)	Cap. (µF)	Cap. Code	Case Size Dϕ x L(mm)	Lead Space (mm)	Max. Tan δ at 120Hz	Max. LC (µA) 2 minutes	Max. Z(Ω) 100Khz/20°C	Max. Ripple Current 100Khz/105°C (mA rms)
6.3	27	270	4 x 7	1.5	0.22	3.0	2.0	65
	56	560	5 x 7	2.0	0.22	3.5	0.95	120
	100	101	5 x 11	2.0	0.22	6.3	0.42	190
	120	121	6.3 x 7	2.5	0.22	7.5	0.45	200
	220	221	6.3 x 11	2.5	0.22	13.9	0.22	300
	270	271	6.3 x 11	2.5	0.22	17.0	0.22	300
	330	331	6.3 x 11	2.5	0.22	20.8	0.30	280
	390	391	8 x 11.5	3.5	0.22	24.6	0.11	560
	470	471	8 x 11.5	3.5	0.22	29.6	0.11	560
	560	561	8 x 12.5	3.5	0.22	35.3	0.11	570
	820	821	8 x 15	3.5	0.22	51.7	.085	730
			10 x 12.5	5.0				800
	1200	122	8 x 20	Discontinued	0.22	75.6	Discontinued	
			10 x 16	5.0			.062	1050
	1500	152	10 x 20	5.0	0.23	94.5	.044	1250
			12.5 x 16				.062	1150
	1800	182	10 x 22	5.0	0.23	113	.039	1450
	2200	222	10 x 22	5.0	0.24	139	.039	1450
	2700	272	12.5 x 20	5.0	0.25	170	.038	1600
	3300	332	12.5 x 20	5.0	0.26	208	.038	1600
	3900	392	12.5 x 25	5.0	0.27	246	.029	1800
	5600	562	12.5 x 25	5.0	0.30	353	.031	1780
	6800	682	16 x 25	7.5	0.32	428	.022	2100
	8200	822	16 x 31.5	7.5	0.35	517	.018	2350
	10000	103	16 x 35	7.5	0.38	630	.018	2550
	12000	123	18 x 35.5	7.5	0.42	756	.015	3200
	15000	153	18 x 35.5	7.5	0.48	945	.015	3200
10	22	220	4 x 7	1.5	0.19	3.0	1.15	90
	39	390	5 x 7	2.0	0.19	3.9	.49	160
	82	820	5 x 11	2.0	0.19	8.2	.42	190
			6.3 x 7	2.5			.24	280
	100	101	5 x 11	2.0	0.19	10	.42	190
	150	151	6.3 x 11	2.5	0.19	15	.22	300
	180	181	6.3 x 11	2.5	0.19	18	.22	300
	220	221	6.3 x 11	2.5	0.19	22	.22	300
	330	331	8 x 11.5	3.5	0.19	33	.11	560

STANDARD PRODUCTS, CASE SIZES AND SPECIFICATIONS

W.V. (Vdc)	Cap. (µF)	Cap. Code	Case Size Dϕ x L(mm)	Lead Space (mm)	Max. Tanδ at 120Hz	Max. LC (µA) 2 minutes	Max. Z (Ω) 100Khz/20°C	Max. Ripple Current 100Khz/105°C (mA rms)
10	390	391	8 x 12.5	3.5	0.19	39	.11	570
	470	471	8 x 12.5	3.5	0.19	47	.16	410
	560	561	10 x 12.5	5.0	0.19	56	.085	800
	680	681	8 x 15	3.5	0.19	68	.085	730
			10 x 12.5	5.0			.09	800
	820	821	10 x 16	5.0	0.19	82	.062	1050
	1000	102	8 x 20	Discontinued	0.19	100	Discontinued	
			10 x 16	5.0			.062	1050
	1200	122	10 x 20	5.0	0.19	120	.044	1250
			12.5 x 16				.063	1150
	1500	152	10 x 22	5.0	0.20	150	.039	1450
	1800	182	12.5 x 20	5.0	0.20	180	.038	1600
	2200	222	12.5 x 20	5.0	0.21	220	.038	1600
	2700	272	12.5 x 25	5.0	0.22	270	.029	1800
	3300	332	12.5 x 25	5.0	0.23	330	.029	1880
	3900	392	16 x 25	7.5	0.24	390	.022	2100
	4700	472	16 x 25	7.5	0.25	470	.022	2100
	5600	562	16 x 25	7.5	0.27	560	.022	2100
	6800	682	16 x 31.5	7.5	0.29	680	.018	2350
	8200	822	16 x 35	7.5	0.35	820	.018	2550
	10000	103	18 x 35.5	7.5	0.35	1000	.018	2800
16	15	150	4 x 7	1.5	0.16	3	1.15	90
	27	270	5 x 7	2.0	0.16	4.3	.49	160
	47	470	5 x 11	2.0	0.16	7.5	.42	190
	56	560	5 x 11	2.0	0.16	9.0	.42	190
			6.3 x 7			2.5	.49	280
	68	680	5 x 11	2.0	0.16	10.9	.42	190
	100	101	6.3 x 11	2.5	0.16	16	.22	300
	120	121	6.3 x 11	2.5	0.16	19	.22	300
	220	221	8 x 11.5	3.5	0.16	35	.11	560
	270	271	8 x 12.5	3.5	0.16	43	.11	570
	330	331	8 x 12.5	3.5	0.16	53	.16	410
	390	391	10 x 12.5	5.0	0.16	62	.085	800
	470	471	8 x 15	3.5	0.16	75	.085	730
			10 x 12.5	5.0				800
	560	561	10 x 16	5.0	0.16	90	.062	1050

STANDARD PRODUCTS, CASE SIZES AND SPECIFICATIONS

W.V. (Vdc)	Cap. (µF)	Cap. Code	Case Size Dϕ x L(mm)	Lead Space (mm)	Max. Tanδ at 120Hz	Max. LC (µA) 2 minutes	Max. Z (Ω) 100Khz/20°C	Max. Ripple Current 100Khz/105°C (mA rms)
16	680	681	8 x 20	Discontinued	0.16	109	Discontinued	
			10 x 16	5.0			.062	1050
	820	821	10 x 20	5.0	0.16	131	.044	1250
			12.5 x 16				.063	1150
	1000	102	10 x 22	5.0	0.16	160	.039	1450
	1200	122	10 x 22	5.0	0.16	192	.039	1450
	1500	152	12.5 x 20	5.0	0.17	240	.038	1600
	1800	182	12.5 x 25	5.0	0.17	288	.029	1800
	2200	222	12.5 x 25	5.0	0.18	352	.022	1800
			16 x 25	7.5				2100
	2700	272	~~12.5 x 30~~	~~5.0~~	~~0.17~~	~~432~~	~~.025~~	~~2310~~ Discontinued
			16 x 25	7.5	0.19	432	.022	2100
	3900	392	16 x 25	7.5	0.21	624	.022	2100
	4700	472	16 x 31.5	7.5	0.22	752	.018	2350
	5600	562	16 x 35	7.5	0.24	896	.018	2550
	6800	682	16 x 35	7.5	0.26	1088	.018	2550
	8200	822	18 x 35.5	7.5	0.29	1310	.018	2800
25	10	100	4 x 7	1.5	0.14	3.0	1.15	90
	22	220	5 x 7	2.0	0.14	5.5	.49	160
	39	390	5 x 11	2.0	0.14	9.8	.42	190
			6.3 x 7	2.5			.24	280
	47	470	5 x 11	2.0	0.14	12	.42	190
	82	820	6.3 x 11	2.5	0.14	21	.22	300
	100	101	6.3 x 11	2.5	0.14	25	.22	300
	180	181	8 x 12.5	3.5	0.14	45	.11	570
	220	221	8 x 12.5	3.5	0.14	55	.11	570
	270	271	10 x 12.5	5.0	0.14	68	.085	850
	330	331	8 x 15	3.5	0.14	83	.085	730
			10 x 12.5	5.0				800
	390	391	10 x 16	5.0	0.14	98	.062	1050
	470	471	8 x 20	Discontinued	0.14	118	Discontinued	
			10 x 16	5.0			.062	1050
	560	561	10 x 20	5.0	0.14	140	.044	1250
			12.5 x 16				.063	1150
	680	681	10 x 22	5.0	0.14	170	.039	1450

STANDARD PRODUCTS, CASE SIZES AND SPECIFICATIONS

W.V. (Vdc)	Cap. (µF)	Cap. Code	Case Size Dϕ x L(mm)	Lead Space (mm)	Max. Tanδ at 120Hz	Max. LC (µA) 2 minutes	Max. Z (Ω) 100Khz/20°C	Max. Ripple Current 100Khz/105°C (mA rms)
25	820	821	10 x 22	5.0	0.14	205	.039	1450
			12.5 x 20	5.0			.038	1600
	1000	102	12.5 x 20	5.0	0.14	250	.038	1600
	1200	122	12.5 x 25	5.0	0.14	300	.029	1800
	1500	152	12.5 x 25	5.0	0.15	375	.029	1800
	1800	182	16 x 25	7.5	0.15	450	.022	2100
	2200	222	16 x 25	7.5	0.16	550	.022	2100
	2700	272	16 x 25	7.5	0.17	675	.022	2100
	3300	332	16 x 31.5	7.5	0.18	825	.018	2350
	3900	392	16 x 35	7.5	0.19	975	.018	2550
	4700	472	18 x 35.5	7.5	0.20	1175	.018	2800
35	6.8	6R8	4 x 7	1.5	0.12	3.0	1.15	90
	12	120	5 x 7	2.0	0.12	4.2	.49	160
	22	220	5 x 11	2.0	0.12	7.7	.42	190
	27	270	5 x 11	2.0	0.12	9.5	.42	190
			6.3 x 7	2.5			.29	280
	33	330	5 x 11	2.0	0.12	12	.42	190
	47	470	6.3 x 11	2.5	0.12	17	.22	300
	56	560	6.3 x 11	2.5	0.12	20	.22	300
	68	680	6.3 x 11	2.5	0.12	24	.22	300
	100	101	8 x 11.5	3.5	0.12	35	.11	560
	120	121	8 x 12.5	3.5	0.12	42	.11	570
	150	151	8 x 12.5	3.5	0.12	53	.11	570
	180	181	10 x 12.5	5.0	0.12	63	.085	800
	220	221	8 x 15	3.5	0.12	77	.085	730
			10 x 12.5	5.0				800
	270	271	10 x16	5.0	0.12	95	.062	1050
	330	331	8 x 20	Discontinued				
	390	391	10 x 20	5.0	0.12	137	.044	1250
	470	471	10 x 22	5.0	0.12	165	.039	1450
	560	561	10 x 22	5.0	0.12	196	.039	1450
			12.5 x 20				.038	1600
	680	681	12.5 x 20	5.0	0.12	238	.038	1600
	820	821	12.5 x 25	5.0	0.12	287	.029	1800
	1000	102	12.5 x 25	5.0	0.12	350	.029	1800
	1200	122	12.5 x 25	5.0	0.12	420	.029	1800
	1500	152	16 x 25	7.5	0.13	525	.022	2100
	1800	182	16 x 25	7.5	0.13	630	.022	2100
	2200	222	16 x 31.5	7.5	0.14	770	.018	2350
	2700	272	16 x 35	7.5	0.15	945	.018	2550
	3300	332	18 x 35.5	7.5	0.16	1155	.018	2800

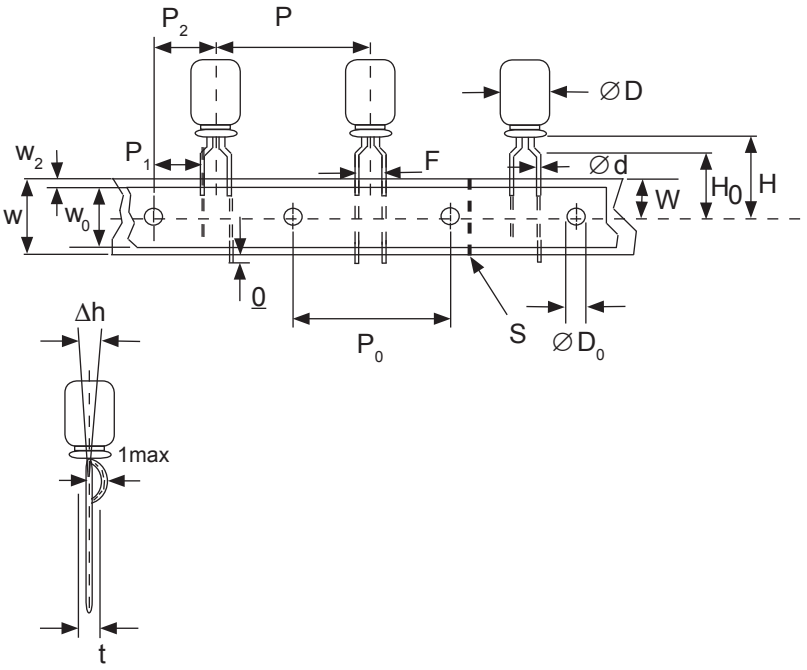
STANDARD PRODUCTS, CASE SIZES AND SPECIFICATIONS

W.V. (Vdc)	Cap. (µF)	Cap. Code	Case Size Dϕ x L(mm)	Lead Space (mm)	Max. Tanδ at 120Hz	Max. LC (µA) 2 minutes	Max. Z (Ω) 100Khz/20°C	Max. Ripple Current 100Khz/105°C (mA rms)
50	1.0	1R0	5 x 11	2.0	0.1	3.0	3.3	30
	2.2	2R2	5 x 11	2.0	0.1	3.0	3.0	45
	3.3	3R3	5 x 11	2.0	0.1	3.0	2.7	55
	4.7	4R7	5 x 11	2.0	0.1	3.0	2.0	90
	10	100	5 x 11	2.0	0.1	5.0	2.0	90
	15	150	5 x 11	2.0	0.1	7.5	1.2	130
	22	220	5 x 11	2.0	0.1	11	.70	160
	33	330	6.3 x 11	2.5	0.1	17	.43	220
	47	470	6.3 x 11	2.5	0.1	24	.43	220
	68	680	8 x 11.5	3.5	0.1	34	.26	360
	100	101	10 x 12.5	5.0	0.1	50	.16	550
	150	151	10 x 16	5.0	0.1	75	.12	760
	220	221	10 x 20	5.0	0.1	110	.088	950
			12.5 x 16				.11	810
	330	331	10 x 22	5.0	0.1	165	.072	1000
			12.5 x 20				.059	1200
	470	471	12.5 x 20	5.0	0.1	235	.059	1200
	680	681	12.5 x 25	5.0	0.1	340	.045	1400
	1000	102	16 x 25	7.5	0.1	500	.039	1750
	1500	152	16 x 35	7.5	0.11	750	.025	2300
	2200	222	18 x 35.5	7.5	0.12	1100	.024	2400

STANDARD RADIAL TAPING (5mm LEAD SPACING, FORMED LEADS) TB

Taping Dimensions (mm)

Case Dia. (Dϕ)	4	5		6.3		8
Case Size Dim.	4x5 4x7	5x5 5x7	5x11	6.3x5 6.3x7	6.3x11	8x11.5
dϕ ±0.05	0.45	0.45	0.5	0.45	0.5	0.6
H ±0.75	17.5	17.5	18.5	17.5	18.5	20.0
F +0.8 ~ -0.2	5.0 -02 ~ +0.8					
P	12.7 ±1.0					
P_0	12.7 ±0.2					
P_1	3.85 ±0.5 (at end of tape)					
P_2	6.35 ±1.0					
W	18.0 ±0.5					
W_0	11.5 min.					
W_1	9.0 ±0.5					
W_2	0 ~ 2.5					
H_0	16.0 ±0.5					
I	1.0 max.					
$D_0\phi$	4.0 ±0.2					
Δh	0 ±1.0 (at top of can)					
t	0.7 ±0.2 (not including lead)					



STANDARD RADIAL TAPING (5mm LEAD SPACING, STRAIGHT LEADS) TB

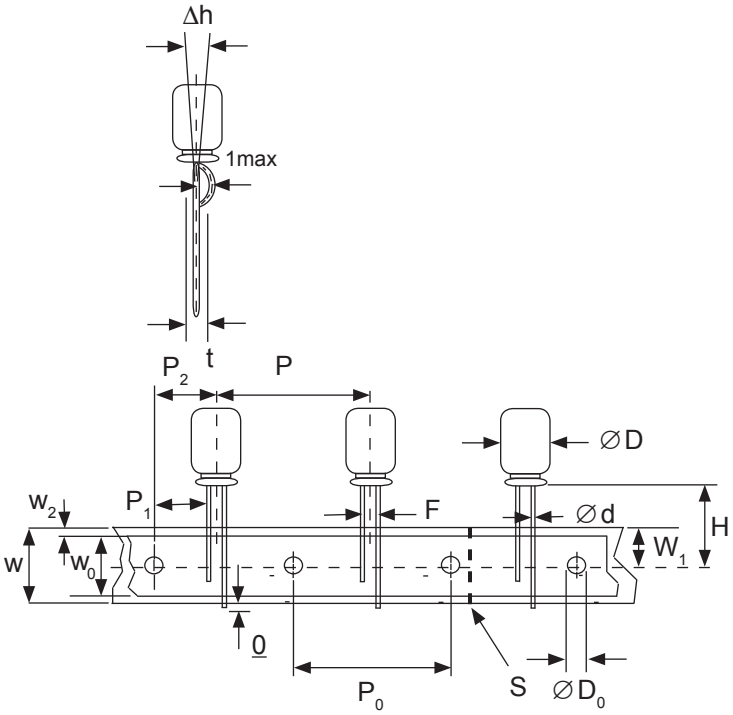
Taping Dimensions (mm)

Case Dia. (Dϕ)	10	12.5
Case Size Dim.	All	All
dϕ ±0.05	0.6	0.6
H ±0.75	19.0	19.0
F +0.8 ~ -0.2	5.0	5.0
P ±1.0	25.4*	
P_0	12.7 ±0.2	
P_1	3.85	
P_2	6.35 ±1.0	
W	18.0 ±0.5	
W_0	11.5 min	
W_1	9.0 ±0.5	
W_2	0 ~ 2.5	
H_0	16.0 ±0.5	
I	1.0 max.	
$D_0\phi$	4.0 ±0.2	
Δh	0 ±1.0 (at top of can)	
t	0.7 ±0.2 (not including lead)	

***Optional Taping Specifications**

10mm diameter available with P dim. = 12.7mm (P/N Suf x: TB12.7MMP)

12.5mm diameter available with P dim. = 15mm, P_1= 5.0mm, P_0 = 15.0mm & P_2 = 7.5mm (P/N Suf x: TB15MMP)

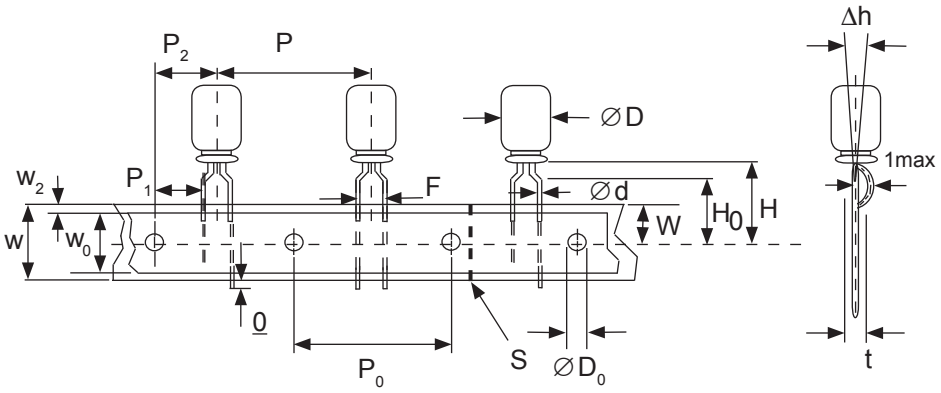


NOTE: ANODE (+) LEAD FEEDS OFF FIRST. FOR OPTION OF NEGATIVE (–) LEAD FIRST, SPECIFY "TBN".

SPECIAL RADIAL TAPING (2.5mm LEAD SPACING, FORMED LEADS) TBF1

Taping Dimensions (mm)

Case Dia. (Dϕ)	4	5	
Case Size Dim.	4x5 4x7	5x5 5x7	5x11
dϕ ±0.05	0.45	0.45	0.5
H ±0.75	17.5	17.5	18.5
H_0 ±0.5	16.0	-	-
F	2.5 -02 ~ +0.8		
P	12.7 ±1.0		
P_0	12.7 ±0.2		
P_1	5.1 ±0.5		
P_2	6.35 ±1.0		
W	18.0 ±0.5		
W_0	11.5 min.		
W_1	9.0 ±0.5		
W_2	0 ~ 1.5		
I	1.0 max.		
D_0ϕ	4.0 ±0.2		
Δh	0 ±1.0		
t	0.7 ±0.2		

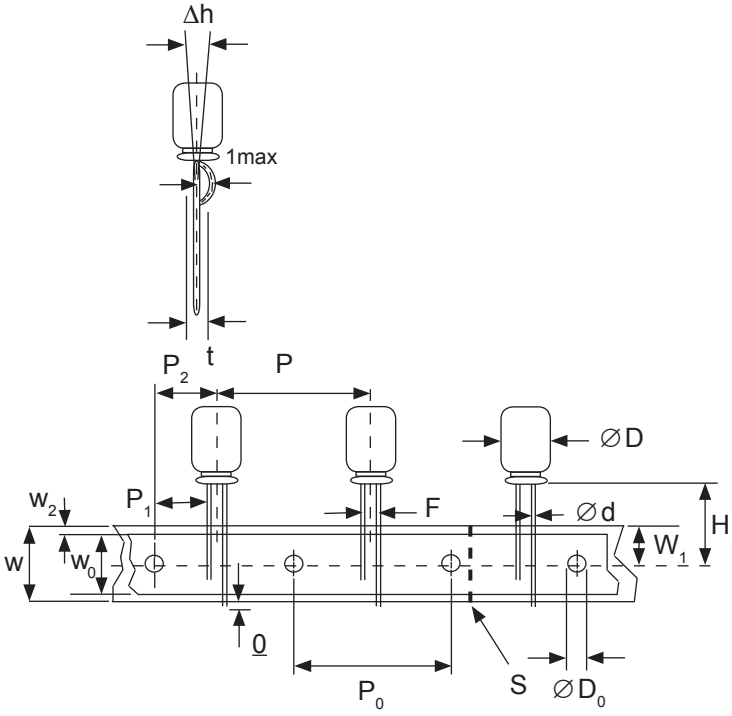


SPECIAL STRAIGHT LEAD TAPING TBST

Taping Dimensions (mm)

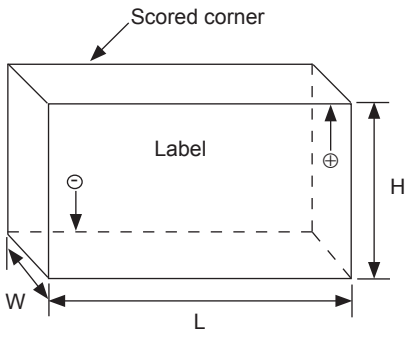
Case Dia. (Dϕ)	4	5		6.3		8
Case Size Dim.	4x5 4x7	5x5 5x7	5x11	6.3x5 6.3x7	6.3x11	8x11.5
dϕ ±0.05	0.45	0.45	0.5	0.45	0.5	0.6
H ±0.75	17.5	17.5	18.5	17.5	18.5	20.0
F +0.8 ~ -0.2	2.0*	2.0	2.0	2.5	2.5	3.5
P ±1.0	12.7 ±0.2					
P_0	12.7 ±0.2					
P_1	5.1	5.1	5.1	5.1	5.1	4.6
P_2	6.35 ±1.0					
W	18.0 ±0.5					
W_0	11.5 min.					
W_1	9.0 ±0.5					
W_2	0 ~ 2.5					
H_0	16.0 ±0.5					
I	1.0 max.					
D_0ϕ	4.0 ±0.2					
Δh	0 ±1.0 (at top of can)					
t	0.7 ±0.2 (not including lead)					

* Parts with 4mm diameter are taped with a slight are in the lead and a 2.0mm lead-space.



RADIAL TAPED PACKAGING

Ammo Box Dimensions (mm)



Ammo Box (Tape & Box) TB, TBF1, TBST

Size of box and component quantity

Case Dia (Dϕ) or Case Size	Q'ty per Box (pcs)	Dim. L	Dim. H	Dim. W
4x5, 4x7	2,000	331	175	43
5x5, 5x7	2,000	331	220	43
5x11	2,000	340	255	55
6.3x5, 6.3x7	2,000	331	280	43
6.3x11	2,000	331	280	48
8x11.5, 8x12.5	1,000	335	235	53
10x12.5*	500	335	190	53
10x16*	500	335	300	53
10x20*	500	335	300	55
12.x20*	500	335	300	55
12.5x25*	500	335	300	61

*Special Taping Consult Factory For Availability