

Polypropylene Film & Foil Capacitor

NPP

Non-inductive construction using Polypropylene film & Foil with flame retardant epoxy resin coating

■ Features

- Pulse duty construction
- Very low dissipation factor
- Negative capacitance change versus temperature
- Very low dielectric absorption
- Coated with flame-retardant(UL94 V-0) epoxy resin.
- RoHS directive compliant

■ Applications

- For high frequency applications e.g.
- Sample and hold
- Timing
- LC-Filtering
- Oscillating circuits
- Audio equipment

■ Specifications

Reference Standard	IEC 60384-13	
Climatic Category	40 / 105 / 21	
Rated Temperature	105℃ +85℃~+105℃ decreasing factor 1.0% / °C for V_R (dc)	
Operation Temperature Range	-40℃~+105℃	
Rated Voltage	100Vdc / 160Vdc, 250Vdc, 400Vdc, 630Vdc, 800Vdc	
Capacitance Range	0.00082 μ F~0.22 μ F	
Capacitance Tolerance	G : $\pm 2\%$ H : $\pm 3\%$ J : $\pm 5\%$ K : $\pm 10\%$ M : $\pm 20\%$ ※Standard : J : $\pm 5\%$, Other Tolerance Grade : available on request.	
Voltage Proof	2.5 U_R (dc) / 3sec	
Dissipation Factor	$\leq 0.1\%$ (at 1kHz 20℃)	
Rated Voltage	U_R (dc)<500V	$\geq 30,000M\Omega$ $C_R \leq 0.33\mu F$ 100Vdc 60sec 20
		$\geq 10,000\Omega \cdot F$ $C_R > 0.33\mu F$ 100Vdc 60sec 20℃
	U_R (dc) $\geq 500V$	$\geq 30,000M\Omega$ $C_R \leq 0.33\mu F$ 100Vdc 60sec 20℃
		$\geq 10,000\Omega \cdot F$ $C_R > 0.33\mu F$ 100Vdc 60sec 20℃

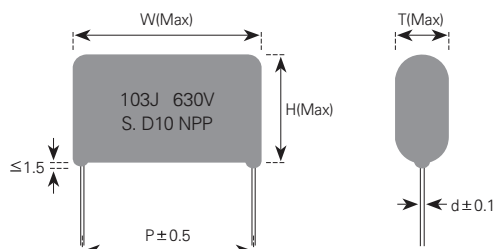
■ Part Number System

NPP	160V	183	J	10	S	5	
Part-1	Part-2	Part-3	Part-4	Part-5	Part-6	Part-7	Part-8

Part-1 : Series Code(Series Name)-NPP
 Part-2 : Rated Voltage(DC : 100V~800V)
 Part-3 : Rated Capacitance Value(0.00082 μ F~0.22 μ F / 821~224)
 Part-4 : Capacitance Tolerance (G : $\pm 2\%$ H : $\pm 3\%$ J : $\pm 5\%$ K : $\pm 10\%$ M : $\pm 20\%$)
 Part-5 : Lead Spacing(10mm / 15mm / 22.5mm / 27.5mm)
 Part-6 : Forming-Type and Packing Code
 Part-7 : Size Number(1 ~4 : Min-Type / 5 : Standard-Type / 6~9 : Large-Type)
 Part-8 : Internal Use

CODE	STYLE
B	Bending Forming
C	Straight Cutting
D	D-Type Forming
L	B-Type long Forming
M	C-Type long Forming
S	Straight
X	B-Type Forming
Y	C-Type Forming
Z	Z-Type Forming
T	A-Type Tapping
U	B-Type Tapping
V	C-Type Tapping

■ Dimensions



100Vdc/160Vdc(63Vac / 100Vac)					
Cap. (μF)	Dimensions(mm)			Pitch - d	PART NUMBER
	W (max.)	H (max.)	T (max.)		
0.018	13.0	10.0	5.5	10.0-0.6	NPP 160V 183J 10S 5 ____
0.022	13.0	9.5	5.5	10.0-0.6	NPP 160V 223J 10S 5 ____
0.027	13.0	10.0	5.5	10.0-0.6	NPP 160V 273J 10S 5 ____
0.033	13.0	10.0	5.5	10.0-0.6	NPP 160V 333J 10S 5 ____
0.039	13.0	11.0	5.5	10.0-0.6	NPP 160V 393J 10S 5 ____
0.047	13.0	11.5	6.0	10.0-0.6	NPP 160V 473J 10S 5 ____
0.033	19.0	10.5	6.5	15.0-0.8	NPP 160V 333J 15S 5 ____
0.039	19.0	10.5	6.0	15.0-0.8	NPP 160V 393J 15S 5 ____
0.047	19.0	11.0	6.5	15.0-0.8	NPP 160V 473J 15S 5 ____
0.056	19.0	10.5	6.0	15.0-0.8	NPP 160V 563J 15S 5 ____
0.068	19.0	11.0	6.5	15.0-0.8	NPP 160V 683J 15S 5 ____
0.082	19.0	12.0	7.0	15.0-0.8	NPP 160V 823J 15S 5 ____
0.1	19.0	13.0	7.5	15.0-0.8	NPP 160V 104J 15S 5 ____
0.1	28.0	12.5	7.5	22.5-0.8	NPP 160V 104J 22.5S 5 ____
0.12	28.0	12.5	7.0	22.5-0.8	NPP 160V 124J 22.5S 5 ____
0.15	28.0	12.0	7.0	22.5-0.8	NPP 160V 154J 22.5S 5 ____
0.18	28.0	12.5	7.5	22.5-0.8	NPP 160V 184J 22.5S 5 ____
0.22	28.0	13.5	8.0	22.5-0.8	NPP 160V 224J 22.5S 5 ____

250Vdc(160Vac)					
Cap. (μF)	Dimensions(mm)			Pitch - d	PART NUMBER
	W (max.)	H (max.)	T (max.)		
0.018	13.0	10.0	5.5	10.0-0.6	NPP 250V 183J 10S 5 ____

0.022	13.0	9.5	5.5	10.0-0.6	NPP 250V 223J 10S 5 ____
0.027	13.0	10.0	5.5	10.0-0.6	NPP 250V 273J 10S 5 ____
0.033	13.0	10.0	5.5	10.0-0.6	NPP 250V 333J 10S 5 ____
0.039	13.0	11.0	5.5	10.0-0.6	NPP 250V 393J 10S 5 ____
0.047	13.0	11.5	6.0	10.0-0.6	NPP 250V 473J 10S 5 ____
0.033	19.0	10.5	6.5	15.0-0.8	NPP 250V 333J 15S 5 ____
0.039	19.0	10.5	6.0	15.0-0.8	NPP 250V 393J 15S 5 ____
0.047	19.0	11.0	6.5	15.0-0.8	NPP 250V 473J 15S 5 ____
0.056	19.0	10.5	6.0	15.0-0.8	NPP 250V 563J 15S 5 ____
0.068	19.0	11.0	6.5	15.0-0.8	NPP 250V 683J 15S 5 ____
0.082	19.0	12.0	7.0	15.0-0.8	NPP 250V 823J 15S 5 ____
0.1	19.0	13.0	7.5	15.0-0.8	NPP 250V 104J 15S 5 ____
0.1	28.0	12.5	7.5	22.5-0.8	NPP 250V 104J 22.5S 5 ____
0.12	28.0	12.5	7.0	22.5-0.8	NPP 250V 124J 22.5S 5 ____
0.15	28.0	12.0	7.0	22.5-0.8	NPP 250V 154J 22.5S 5 ____
0.18	28.0	12.5	7.5	22.5-0.8	NPP 250V 184J 22.5S 5 ____
0.22	28.0	13.5	8.0	22.5-0.8	NPP 250V 224J 22.5S 5 ____

400Vdc(200Vac)					
Cap. (μF)	Dimensions(mm)			Pitch - d	PART NUMBER
	W (max.)	H (max.)	T (max.)		
0.0047	13.0	9.5	5.0	10.0-0.6	NPP 400V 472J 10S 5 ____
0.0068	13.0	9.5	5.0	10.0-0.6	NPP 400V 682J 10S 5 ____
0.0082	13.0	9.5	5.0	10.0-0.6	NPP 400V 822J 10S 5 ____
0.01	13.0	10.0	5.5	10.0-0.6	NPP 400V 103J 10S 5 ____
0.012	13.0	10.0	5.5	10.0-0.6	NPP 400V 123J 10S 5 ____
0.015	13.0	11.0	6.0	10.0-0.6	NPP 400V 153J 10S 5 ____
0.018	13.0	11.5	6.5	10.0-0.6	NPP 400V 183J 10S 5 ____
0.022	13.0	12.0	7.0	10.0-0.6	NPP 400V 223J 10S 5 ____
0.012	19.0	9.5	5.0	15.0-0.8	NPP 400V 123J 15S 5 ____
0.015	19.0	9.5	5.5	15.0-0.8	NPP 400V 153J 15S 5 ____
0.018	19.0	10.0	5.5	15.0-0.8	NPP 400V 183J 15S 5 ____
0.022	19.0	10.5	6.0	15.0-0.8	NPP 400V 223J 15S 5 ____
0.027	19.0	11.0	6.5	15.0-0.8	NPP 400V 273J 15S 5 ____
0.033	19.0	12.0	7.0	15.0-0.8	NPP 400V 333J 15S 5 ____

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0.039	28.0	12.5	7.5	22.5-0.8	NPP 400V 393J 22.5S 5 _____
0.047	28.0	12.0	7.0	22.5-0.8	NPP 400V 473J 22.5S 5 _____
0.056	28.0	12.5	7.5	22.5-0.8	NPP 400V 563J 22.5S 5 _____
0.068	28.0	12.5	7.0	22.5-0.8	NPP 400V 683J 22.5S 5 _____
0.082	28.0	13.0	7.5	22.5-0.8	NPP 400V 823J 22.5S 5 _____
0.1	28.0	13.5	8.5	22.5-0.8	NPP 400V 104J 22.5S 5 _____

630Vdc(220Vac)					
Cap. (μF)	Dimensions(mm)			Pitch - d	PART NUMBER
	W (max.)	H (max.)	T (max.)		
0.0022	13.0	10.5	5.5	10.0-0.6	NPP 630V 222J 10S 5 _____
0.0027	13.0	10.0	5.5	10.0-0.6	NPP 630V 272J 10S 5 _____
0.0033	13.0	10.5	6.0	10.0-0.6	NPP 630V 332J 10S 5 _____
0.0039	13.0	9.5	5.5	10.0-0.6	NPP 630V 392J 10S 5 _____
0.0047	13.0	10.0	5.5	10.0-0.6	NPP 630V 472J 10S 5 _____
0.0056	13.0	11.0	5.5	10.0-0.6	NPP 630V 562J 10S 5 _____
0.0068	13.0	11.5	6.0	10.0-0.6	NPP 630V 682J 10S 5 _____
0.0082	13.0	11.5	6.5	10.0-0.6	NPP 630V 822J 10S 5 _____
0.01	13.0	12.5	7.0	10.0-0.6	NPP 630V 103J 10S 5 _____
0.0047	19.0	10.5	6.0	15.0-0.8	NPP 630V 472J 15S 5 _____
0.0056	19.0	10.5	6.5	15.0-0.8	NPP 630V 562J 15S 5 _____
0.0068	19.0	10.5	6.0	15.0-0.8	NPP 630V 682J 15S 5 _____
0.0082	19.0	11.0	6.5	15.0-0.8	NPP 630V 822J 15S 5 _____
0.01	19.0	10.0	6.0	15.0-0.8	NPP 630V 103J 15S 5 _____
0.012	19.0	10.5	6.0	15.0-0.8	NPP 630V 123J 15S 5 _____
0.015	19.0	11.0	6.5	15.0-0.8	NPP 630V 153J 15S 5 _____
0.018	19.0	12.0	7.0	15.0-0.8	NPP 630V 183J 15S 5 _____
0.022	19.0	12.5	7.5	15.0-0.8	NPP 630V 223J 15S 5 _____
0.027	19.0	13.5	8.0	15.0-0.8	NPP 630V 273J 15S 5 _____
0.033	19.0	14.0	9.0	15.0-0.8	NPP 630V 333J 15S 5 _____
0.018	28.0	12.5	7.5	22.5-0.8	NPP 630V 183J 22.5S 5 _____
0.022	28.0	12.5	7.0	22.5-0.8	NPP 630V 223J 22.5S 5 _____
0.027	28.0	13.0	7.5	22.5-0.8	NPP 630V 273J 22.5S 5 _____
0.033	28.0	12.0	7.0	22.5-0.8	NPP 630V 333J 22.5S 5 _____

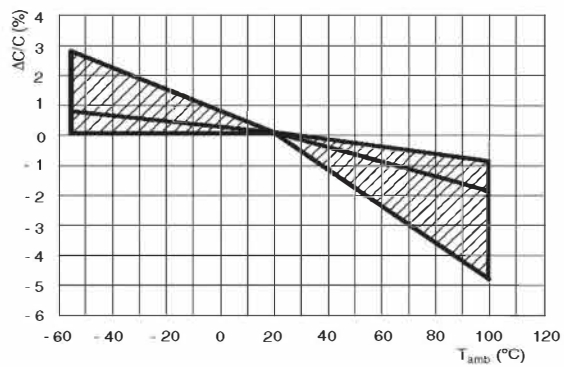
800Vdc(250Vac)					
Cap. (μF)	Dimensions(mm)			Pitch - d	PART NUMBER
	W (max.)	H (max.)	T (max.)		
0.00082	13.0	10.0	5.5	10.0-0.6	NPP 800V 821J 10S 5 _____
0.001	13.0	11.0	5.5	10.0-0.6	NPP 800V 102J 10S 5 _____
0.0012	13.0	11.0	6.0	10.0-0.6	NPP 800V 122J 10S 5 _____
0.0015	13.0	9.5	5.0	10.0-0.6	NPP 800V 152J 10S 5 _____
0.0018	13.0	10.0	5.5	10.0-0.6	NPP 800V 182J 10S 5 _____
0.0022	13.0	9.5	5.0	10.0-0.6	NPP 800V 222J 10S 5 _____
0.0027	13.0	10.0	5.5	10.0-0.6	NPP 800V 272J 10S 5 _____
0.0033	13.0	11.0	5.5	10.0-0.6	NPP 800V 332J 10S 5 _____
0.0039	13.0	11.0	6.0	10.0-0.6	NPP 800V 392J 10S 5 _____
0.0047	13.0	11.5	6.5	10.0-0.6	NPP 800V 472J 10S 5 _____
0.0068	19.0	11.0	5.5	15.0-0.8	NPP 800V 682J 15S 5 _____
0.0082	19.0	11.5	6.0	15.0-0.8	NPP 800V 822J 15S 5 _____
0.01	19.0	11.5	6.5	15.0-0.8	NPP 800V 103J 15S 5 _____
0.012	19.0	12.0	7.0	15.0-0.8	NPP 800V 123J 15S 5 _____
0.015	19.0	13.0	7.5	15.0-0.8	NPP 800V 153J 15S 5 _____
0.018	19.0	13.5	8.5	15.0-0.8	NPP 800V 183J 15S 5 _____
0.022	19.0	14.0	9.0	15.0-0.8	NPP 800V 223J 15S 5 _____
0.01	28.0	13.0	8.0	22.5-0.8	NPP 800V 103J 22.5S 5 _____
0.012	28.0	13.5	8.5	22.5-0.8	NPP 800V 123J 22.5S 5 _____
0.015	28.0	14.0	9.0	22.5-0.8	NPP 800V 153J 22.5S 5 _____
0.018	28.0	12.5	7.5	22.5-0.8	NPP 800V 183J 22.5S 5 _____
0.022	28.0	13.0	8.0	22.5-0.8	NPP 800V 223J 22.5S 5 _____
0.027	28.0	13.0	7.5	22.5-0.8	NPP 800V 273J 22.5S 5 _____
0.033	28.0	13.5	8.5	22.5-0.8	NPP 800V 333J 22.5S 5 _____

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■ Electrical Characteristics (Typical Data)

Characteristics

Capacitance as a function of ambient temperature (typical curve)



Impedance as a function of frequency (typical curve)

