

Surge Protective Devices (SPDs)  
for Coaxial & RF Systems

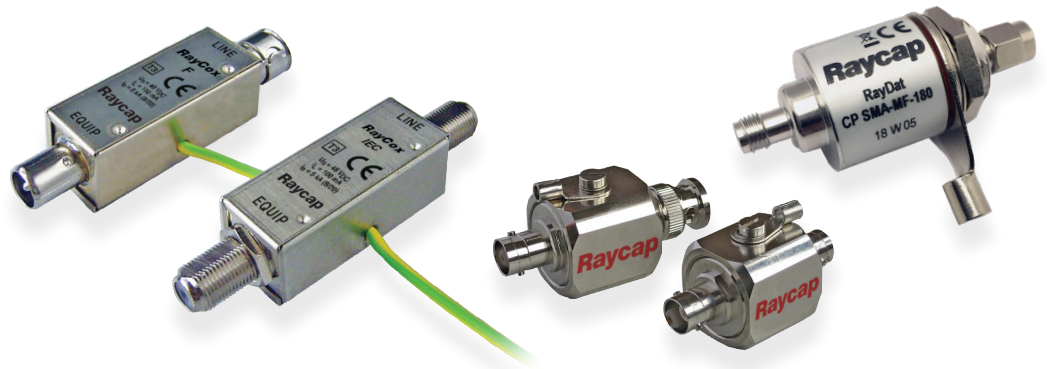


## Coaxial & RF Systems

**Special features:**

- Very high surge ratings
- Equipped with various types of terminals
- High frequency range (up to 250MHz) suitable for all DSL lines
- Robust metal housing

- RayCox BNC
- RayCox IEC, F
- RayDat CP BNC
- RayDat CP 7/16
- RayDat CP N
- RayDat CP N-6G
- RayDat CP TNC-6G
- RayDat CP UHF
- RayDat CP F75
- RayDat CP TV75
- RayDat CP SMA-MF



**Symbol Legend:**

- Compact Design
- Quick Connect Terminals
- Plug-In Connection
- Shield Directly Grounded

Coaxial protection devices are intended to protect TV sets, aerial amplifiers, CCTV/ CATV systems as well as RF antenna systems. Moreover, they are suitable for frequencies up to 6 GHz.

The careful design, low capacitance gas discharge arresters and high-quality termination connectors ensure a minimum of insertion loss throughout the frequency band.

Surge protection devices are designed to match the requirements for 50 Ohm or 75 Ohm typical impedance. Different types of connectors (BNC, IEC TV, BNC, 7/16, N, TNC UHF and SMA) are used to enable easy installation.

The CP coaxial cable protectors are designed in accordance with IEC 61643-21: 2012 standards and regulations.



**DATA SHEET**

## Coaxial SPD for Analog Video Surveillance Systems

**RayCox BNC Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Voltages: 10, 24 VDC  
 Max. Operating Voltage: 12, 24 VDC  
 Frequency Range: 100 MHz  
 Series Load Current: 100 mA  
 Enclosure: In-line Installation  
 Termination: BNC Connectors  
 Housing: Shielded Enclosure  
 Compliance: IEC/EN 61643-21

**Technical Data**

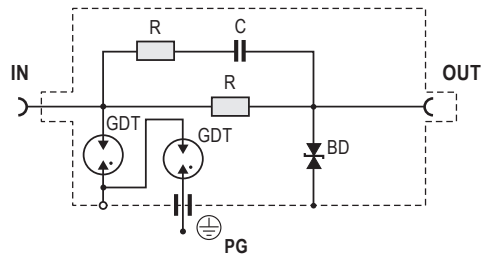
BNC		BNC 5	BNC 12
<b>Electrical</b>			
Nominal Operating Voltage (DC)	$U_n$	10V	24V
Maximum Continuous Operating Voltage (DC)	$U_c$	12V	28V
Rated Operating Current at 25°C	$I_L$		100 mA
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$		10 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA
Residual Voltage at 5 kA (8/20 $\mu$ s)	(Wire-Shield) $U_{res}$	< 35V	< 65V
Rated Spark Overvoltage	(Wire-Shield)	13.5V – 16.5V	30V – 36V
	(Shield-Ground)	72V – 108V	72V – 108V
Response Time Overvoltage Protection	(Wire-Shield) $t_A$		< 10 ns
	(Shield-Ground)		< 100 ns
Insulation Resistance of Protection	(Wire-Shield) $R_{iso}$	$\geq 12 M\Omega$	$\geq 28 M\Omega$
	(Shield-Ground)		$\geq 1 G\Omega$
Serial Resistance per Path	R		9 – 11 $\Omega$
Transverse Capacitance	(Wire-Shield) C		30 pF
	(Shield-Ground)		1 pF
Cut-off Frequency	$f_G$		100 MHz
Transmission Rate			16 Mbit/s
<b>Mechanical</b>			
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]	
Connection		BNC Connector	
Degree of Protection IEC/EN 60529		IP 20 (built-in)	
Housing Material		Metal	
<b>Order Information</b>			
Order Code		<b>BNC 5</b>	<b>BNC 12</b>
BNC xx		7050.22	7050.13

## RayCox BNC Series

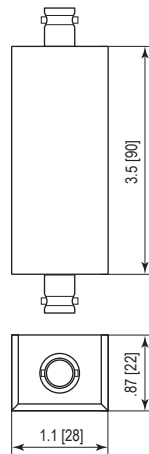
### Internal Configuration

#### Legend

- BD Bi-directional TVS Diode
- C Capacitor
- GDT Gas Discharge Tube
- PG Protective Grounding
- R Resistor



### Dimensions & Packaging



BNC	BNC 5	BNC 12
<b>Dimensions</b>		
Weight per Unit	2.04 oz [58g]	
Packaging Dimensions (Single Unit)	5.5 x 7.9" [140 x 200 mm]	

inches  
[mm]

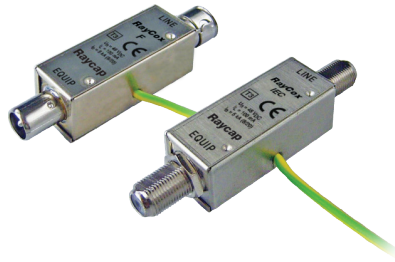
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**DATA SHEET**
**Coaxial SPD for TV & Cable TV**  
**RayCox IEC 48, F 48**  
**C1 • C2 • C3**


IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 5 kA  
 Voltages: 48 VDC  
 Max. Operating Voltage: 60 VDC  
 Frequency Range: 40–860 MHz  
 Series Load Current: 100 mA  
 Termination: IEC TV or F Connectors  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

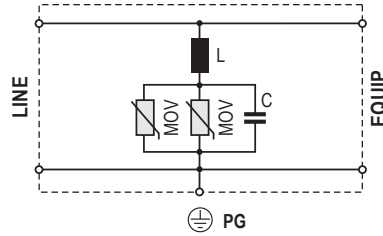
**Technical Data**

	IEC 48	F 48
<b>Electrical</b>		
Nominal Operating Voltage (DC)	$U_n$	48V
Maximum Continuous Operating Voltage (DC)	$U_c$	60V
Rated Operating Current at 25°C	$I_L$	100 mA
C2 Nominal Discharge Current (8/20 μs)	$I_n$	5 kA
Residual Voltage at 5 kA (8/20 μs)	$U_{res}$	<500V
Rated Spark Overvoltage (Wire-Shield)		90V–110V
Response Time Overvoltage Protection (Wire-Shield)	$t_A$	<25 ns
Insulation Resistance of Protection (Wire-Shield)	$R_{iso}$	≥ 6 MΩ
Serial Resistance per Path	$R$	<0.1 Ω
Frequency Range	$f_G$	40–860 MHz
<b>Mechanical</b>		
Temperature Range	-40 °F to +176 °F [-40 °C to +80 °C]	
Connection	TV Connector	F Connector
Degree of Protection IEC/EN 60529	IP20 (built-in)	
Housing Material	Metal	
<b>Order Information</b>		
Order Code	IEC 48	F 48
XXX 48	125 093	125 094

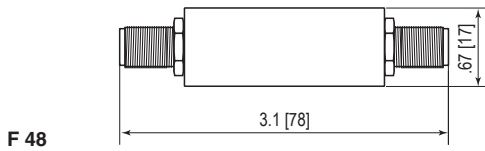
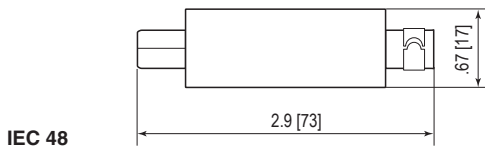
# RayCox IEC 48, F 48

## Internal Configuration

- Legend**  
 C Capacitor  
 L Inductor  
 MOV Metal Oxide Varistor  
 PG Protective Grounding



## Dimensions & Packaging



	IEC 48	F 48
<b>Dimensions</b>		
Weight per Unit	1.13 oz [32g]	
Packaging Dimensions (Single Unit)	3.5 × 5.9" [90 × 150 mm]	

inches  
[mm]

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**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP BNC Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180, 280 V  
 Maximum Peak Power: 40, 125, 300 W  
 Frequency Range: DC–2.6 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: BNC Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

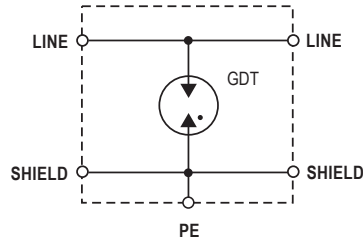
**Technical Data**

CP BNC		70	180	280
<b>Electrical</b>				
Maximum Continuous Operating Voltage	$U_c$	70 V	180 V	280 V
Maximum Peak Power	$P_{max}$	40 W	125 W	300 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$		10 kA	
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA	
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 600 V	< 700 V	< 900 V
Impedance	$Z$		50 $\Omega$	
Insertion Loss	$I_L$		< 0.4 dB	
Return Loss	$R_L$		> 20 dB	
Insulation Resistance of Protection	$R_{iso}$		> 10 G $\Omega$	
Frequency Range	$f_G$		0–2.6 GHz	
<b>Mechanical</b>				
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]		
Connection		BNC Female/Female		BNC Male/Female
Degree of Protection IEC/EN 60529		IP 20 (built-in)		
Housing Material		Metal		
<b>Order Information</b>				
Order Code		70	180	280
CP BNC-FF-xxx		800 850	800 851	800 852
CP BNC-MF-xxx		800 853	800 854	800 855

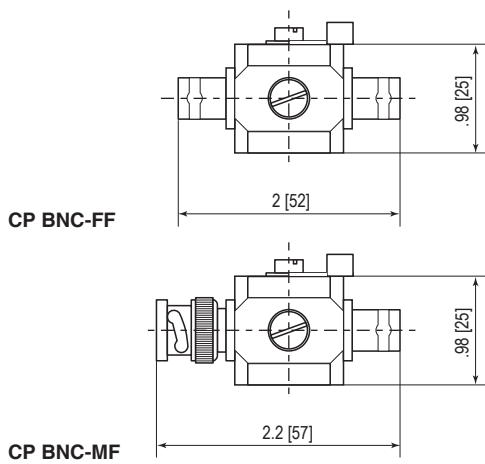
## RayDat CP BNC Series

### Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



### Dimensions & Packaging



CP BNC	CP BNC-FF-xxx			CP BNC-MF-xxx		
	70	180	280	70	180	280
<b>Dimensions</b>						
Weight per Unit	3.74 oz [106g]			4.02 oz [114g]		
Packaging Dimensions (Single Unit)	2.9 x 1.2 x 1.2" [73 x 30 x 30mm]					
Minimum Package Quantity	100 pieces					

inches  
[mm]

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**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP 7/16 Series****C1 • C2 • C3****CCP-7/16 Series**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180, 280 V  
 Maximum Peak Power: 40, 125, 300 W  
 Frequency Range: DC–2.5 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.2 dB  
 Return Loss: > 20 dB  
 Termination: 7/16 Type (M-F)  
 Housing: Bulkhead Installation,  
 Shielded Enclosure  
 Compliance: IEC/EN 61643-21

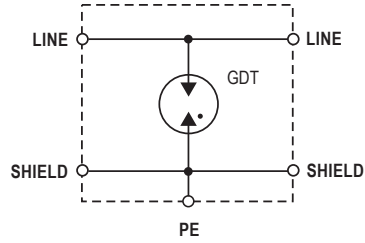
**Technical Data**

CP 7/16-MF		70	180	280
<b>Electrical</b>				
Maximum Continuous Operating Voltage	$U_c$	70 V	180 V	280 V
Maximum Peak Power	$P_{max}$	40 W	125 W	300 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$		10 kA	
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA	
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 600 V	< 700 V	< 900 V
Impedance	$Z$		50 $\Omega$	
Insertion Loss	$I_L$		< 0.2 dB	
Return Loss	$R_L$		> 20 dB	
Insulation Resistance of Protection	$R_{iso}$		> 10 G $\Omega$	
Frequency Range	$f_G$		0–2.5 GHz	
<b>Mechanical</b>				
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]		
Connection		7/16 Male/Female		
Degree of Protection IEC/EN 60529		IP 20 (built-in)		
Housing Material		Metal		
<b>Order Information</b>				
Order Code		70	180	280
CP 7/16-MF-xxx		800 856	800 857	800 858

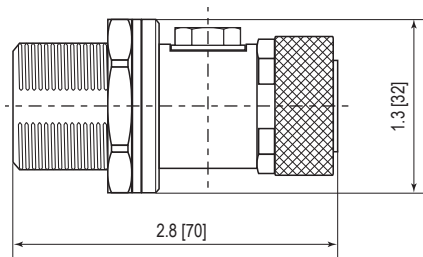
# RayDat CP 7/16 Series

## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



## Dimensions & Packaging



CP 7/16-MF	70	180	280
<b>Dimensions</b>			
Weight per Unit		7.7 oz [218g]	
Packaging Dimensions (Single Unit)		3.2 x 1.6 x 1.6" [82 x 40 x 40mm]	
Minimum Package Quantity		100 pieces	

inches  
[mm]

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**DATA SHEET**

## In-line SPD for Coaxial &amp; RF Systems

**RayDat CP N Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180, 280 V  
 Maximum Peak Power: 40, 125, 300 W  
 Frequency Range: DC–2.6 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: N Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

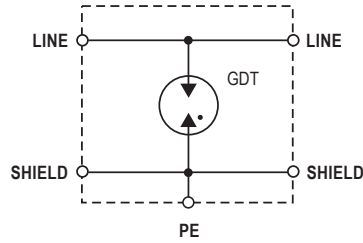
**Technical Data**

CP-N		70	180	280
<b>Electrical</b>				
Maximum Continuous Operating Voltage	$U_c$	70 V	180 V	280 V
Maximum Peak Power	$P_{max}$	40 W	125 W	300 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA		
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA	
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 600 V	< 700 V	< 900 V
Impedance	$Z$		50 $\Omega$	
Insertion Loss	$I_L$		< 0.4 dB	
Return Loss	$R_L$		> 20 dB	
Insulation Resistance of Protection	$R_{iso}$		> 10 G $\Omega$	
Frequency Range	$f_G$		0–2.6 GHz	
<b>Mechanical</b>				
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]		
Connection		N Female/Female		N Male/Female
Degree of Protection IEC/EN 60529			IP 20 (built-in)	
Housing Material			Metal	
<b>Order Information</b>				
Order Code		70	180	280
CP N-FF-xxx		800 859	800 860	800 861
CP N-MF-xxx		800 862	800 863	800 864

# RayDat CP N Series

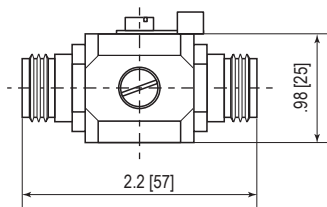
## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground

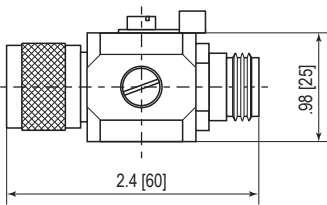


## Dimensions & Packaging

CP N-FF



CP N-MF



CP N	CP N-FF-xxx			CP N-MF-xxx		
	70	180	280	70	180	280
<b>Dimensions</b>						
Weight per Unit	4.87 oz [138 g]			5.01 oz [142 g]		
Packaging Dimensions (Single Unit)	2.9 x 1.2 x 1.2" [73 x 30 x 30 mm]					
Minimum Package Quantity	100 pieces					

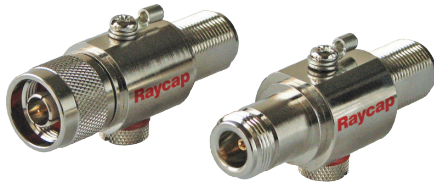
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**DATA SHEET**

## In-line SPD for High Frequency Coaxial &amp; RF Systems

**RayDat CP N-6G Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 180 V  
 Maximum Peak Power: 125 W  
 Frequency Range: DC–6.0 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: N Type (F-F, M-F)  
 Housing: Bulkhead Installation,  
 Shielded Enclosure  
 Compliance: IEC/EN 61643-21

**Technical Data****CP N-6G****CP N-6G-FF****CP N-6G-MF****Electrical**

Maximum Continuous Operating Voltage	$U_c$	180 V
Maximum Peak Power	$P_{max}$	125 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	20 kA
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 700 V
Impedance	$Z$	50 $\Omega$
Insertion Loss	$I_L$	< 0.4 dB
Return Loss	$R_L$	> 20 dB
Insulation Resistance of Protection	$R_{iso}$	> 10 G $\Omega$
Frequency Range	$f_G$	0–6.0 GHz

**Mechanical**

Temperature Range	-40 °F to +176 °F [-40 °C to +80 °C]	
Connection	N Female/Female	N Male/Female
Degree of Protection IEC/EN 60529	IP 20 (built-in)	
Housing Material	Metal	

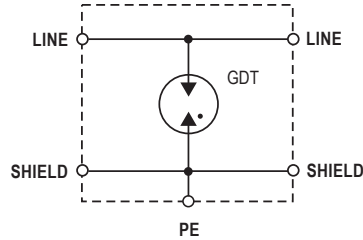
**Order Information**

Order Code		
CP N-6G-XX	800 865	800 866

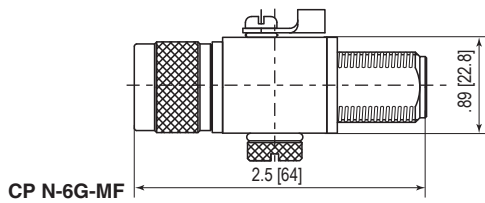
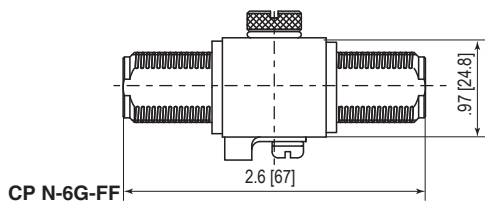
# RayDat CP N-6G Series

## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



## Dimensions & Packaging



CP N-6G	CP N-6G-FF	CP N-6G-MF
<b>Dimensions</b>		
Weight per Unit	4.65 oz [132 g]	4.58 oz [130 g]
Packaging Dimensions (Single Unit)	2.9 × 1.2 × 1.2" [73 × 30 × 30 mm]	
Minimum Package Quantity	100 pieces	

inches  
[mm]

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**DATA SHEET**

In-line SPD for High Frequency Coaxial &amp; RF Systems

**RayDat CP TNC-6G Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 180V  
 Maximum Peak Power: 125W  
 Frequency Range: DC–6.0 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: TNC Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

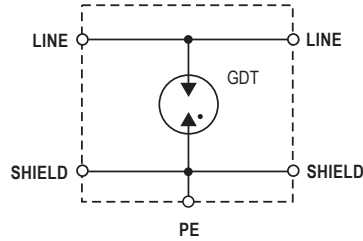
**Technical Data**

CP TNC-6G	CP TNC-6G-FF	CP TNC-6G-MF
<b>Electrical</b>		
Maximum Continuous Operating Voltage	$U_c$	180V
Maximum Peak Power	$P_{max}$	125W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	10 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	20 kA
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 700V
Impedance	$Z$	50 $\Omega$
Insertion Loss	$I_L$	< 0.4 dB
Return Loss	$R_L$	> 20 dB
Insulation Resistance of Protection	$R_{iso}$	> 10 G $\Omega$
Frequency Range	$f_G$	0–6.0 GHz
<b>Mechanical</b>		
Temperature Range	-40 °F to +176 °F [-40 °C to +80 °C]	
Connection	TNC Female/Female	TNC Male/Female
Degree of Protection IEC/EN 60529	IP 20 (built-in)	
Housing Material	Metal	
<b>Order Information</b>		
Order Code		
CP TNC-6G-XX	800 867	800 868

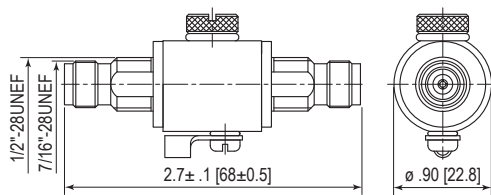
# RayDat CP TNC-6G Series

## Internal Configuration

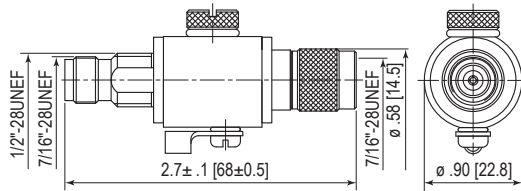
**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



## Dimensions & Packaging



**CP TNC-6G-FF**



**CP TNC-6G-MF**

CP TNC-6G	CP TNC-6G-FF	CP TNC-6G-MF
<b>Dimensions</b>		
Weight per Unit	4.6 oz [130g]	4.51 oz [128g]
Packaging Dimensions (Single Unit)	2.9 × 1.2 × 1.2" [73 × 30 × 30mm]	
Minimum Package Quantity	100 pieces	

inches  
[mm]

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**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP UHF Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180, 280 V  
 Maximum Peak Power: 40, 125, 300 W  
 Frequency Range: DC–600 MHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: UHF Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

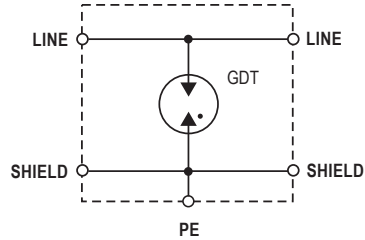
**Technical Data**

CP UHF		70	180	280
<b>Electrical</b>				
Maximum Continuous Operating Voltage	$U_c$	70 V	180 V	280 V
Maximum Peak Power	$P_{max}$	40 W	125 W	300 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$		10 kA	
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA	
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 600 V	< 700 V	< 900 V
Impedance	$Z$		50 $\Omega$	
Insertion Loss	$I_L$		< 0.4 dB	
Return Loss	$R_L$		> 20 dB	
Insulation Resistance of Protection	$R_{iso}$		> 10 G $\Omega$	
Frequency Range	$f_G$		0–600 MHz	
<b>Mechanical</b>				
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]		
Connection		UHF Female/Female		UHF Male/Female
Degree of Protection IEC/EN 60529		IP 20 (built-in)		
Housing Material		Metal		
<b>Order Information</b>				
Order Code		70	180	280
CP UHF-FF-xxx		800 869	800 870	800 871
CP UHF-MF-xxx		800 872	800 873	800 874

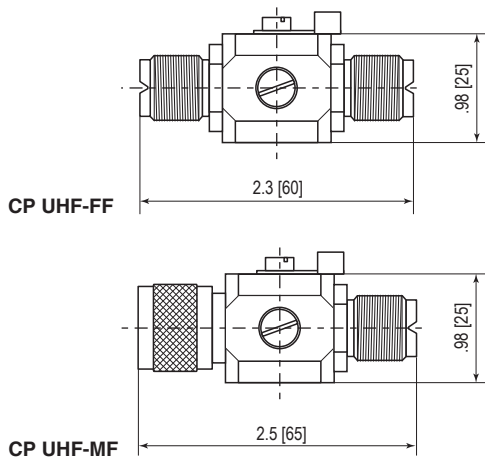
# RayDat CP UHF Series

## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



## Dimensions & Packaging



CP UHF	CP UHF-FF-xxx			CP UHF-MF-xxx		
	70	180	280	70	180	280
<b>Dimensions</b>						
Weight per Unit	3.67 oz [104 g]			3.67 oz [104 g]		
Packaging Dimensions (Single Unit)	2.4 x 1.2 x 1.4" [62 x 30 x 35 mm]					
Minimum Package Quantity	100 pieces					

inches  
[mm]

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G29-00-055 201120

**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP F75 Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180V  
 Maximum Peak Power: 40, 125W  
 Frequency Range: DC–2.0GHz  
 Impedance: 75Ω  
 Insertion Loss: <0.4 dB  
 Return Loss: >20 dB  
 Termination: F Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

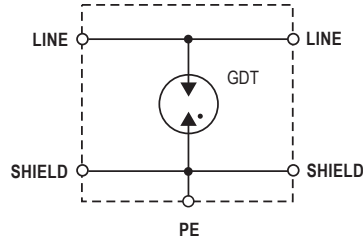
**Technical Data**

CP F75	70	180	
<b>Electrical</b>			
Maximum Continuous Operating Voltage	$U_c$	70V	180V
Maximum Peak Power	$P_{max}$	40W	125W
C2 Nominal Discharge Current (8/20μs)	$I_n$		10 kA
Maximum Discharge Current (8/20μs)	$I_{max}$		20 kA
Residual Voltage at (1 kV/μs)	$U_{res}$	<600V	<700V
Impedance	$Z$		75Ω
Insertion Loss	$I_L$		<0.4 dB
Return Loss	$R_L$		>20 dB
Insulation Resistance of Protection	$R_{iso}$		>10 GΩ
Frequency Range	$f_G$		0–2.0 GHz
<b>Mechanical</b>			
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]	
Connection		F Female/Female	F Male/Female
Degree of Protection IEC/EN 60529		IP20 (built-in)	
Housing Material		Metal	
<b>Order Information</b>			
Order Code	70	180	
CP F75-FF-xxx	800 875	800 876	
CP F75-MF-xxx	800 877	800 878	

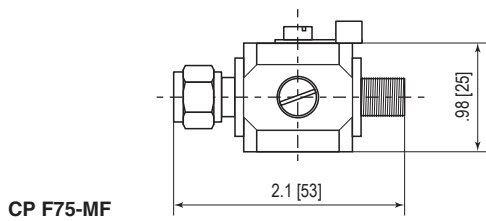
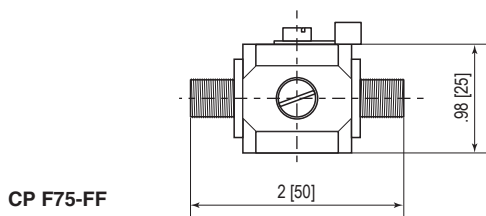
# RayDat CP F75 Series

## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground



## Dimensions & Packaging



CP F75	CP F75-FF		CP F75-MF	
	70	180	70	180
<b>Dimensions</b>				
Weight per Unit	2.82 oz [80 g]		2.96 oz [84 g]	
Packaging Dimensions (Single Unit)	2.8 × 1.2 × 1.2" [73 × 30 × 30 mm]			
Minimum Package Quantity	100 pieces			

inches  
[mm]

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**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP TV75 Series****C1 • C2 • C3**

IEC/EN Category: C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 10 kA,  $I_{max}$ : 20 kA  
 Max. Operating Voltage: 70, 180V  
 Maximum Peak Power: 40, 125W  
 Frequency Range: DC–2.0 GHz  
 Impedance: 75  $\Omega$   
 Insertion Loss: < 0.4 dB  
 Return Loss: > 20 dB  
 Termination: TV Type (F-F, M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

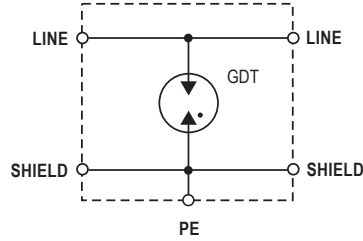
**Technical Data**

CP TV75	70	180	
<b>Electrical</b>			
Maximum Continuous Operating Voltage	$U_c$	70V	180V
Maximum Peak Power	$P_{max}$	40W	125W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$		10 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$		20 kA
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	< 600V	< 700V
Impedance	$Z$		75 $\Omega$
Insertion Loss	$I_L$		< 0.4 dB
Return Loss	$R_L$		> 20 dB
Insulation Resistance of Protection	$R_{iso}$		> 10 G $\Omega$
Frequency Range	$f_G$		0–2.0 GHz
<b>Mechanical</b>			
Temperature Range		-40 °F to +176 °F [-40 °C to +80 °C]	
Connection		TV Female/Female	TV Male/Female
Degree of Protection IEC/EN 60529		IP 20 (built-in)	
Housing Material		Metal	
<b>Order Information</b>			
Order Code	70	180	
CP TV75-FF-xx	800 879	800 880	
CP TV75-MF-xx	800 881	800 882	

# RayDat CP TV75 Series

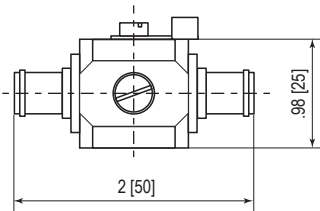
## Internal Configuration

**Legend**  
 GDT Gas Discharge Tube  
 PE Ground

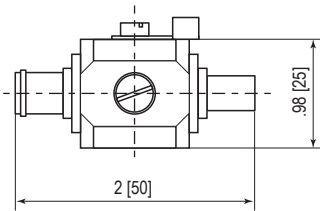


## Dimensions & Packaging

CP TV75-FF



CP TV75-MF



CP TV75	CP TV75-FF-xxx		CP TV75-MF-xxx	
	70	180	70	180
<b>Dimensions</b>				
Weight per Unit	2.82 oz [80g]		2.89 [82g]	
Packaging Dimensions (Single Unit)	2.8 x 1.2 x 1.2" [73 x 30 x 30mm]			
Minimum Package Quantity	100 pieces			

inches  
[mm]

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**DATA SHEET**

In-line SPD for Coaxial &amp; RF Systems

**RayDat CP-SMA Series****D1 • C1 • C2 • C3**

IEC/EN Category: D1/C1/C2/C3  
 Surge Discharge Ratings:  $I_n$ : 5 kA,  $I_{max}$ : 10 kA,  $I_{imp}$ : 1 kA  
 Max. Operating Voltage: 180 V  
 Maximum Peak Power: 125 W  
 Frequency Range: DC–6 GHz  
 Impedance: 50  $\Omega$   
 Insertion Loss: < 0.25 dB  
 Return Loss: > 20 dB  
 Termination: SMA Type (M-F)  
 Housing: In-line Installation, Shielded Enclosure  
 Compliance: IEC/EN 61643-21

**Technical Data****CP-SMA****180****Electrical**

Maximum Continuous Operating Voltage	$U_c$	180 V
Maximum Peak Power	$P_{max}$	125 W
C2 Nominal Discharge Current (8/20 $\mu$ s)	$I_n$	5 kA
Maximum Discharge Current (8/20 $\mu$ s)	$I_{max}$	10 kA
D1 Impulse Discharge Current (10/350 $\mu$ s)	$I_{imp}$	1 kA
Residual Voltage at (1 kV/ $\mu$ s)	$U_{res}$	1600 V
Impedance	$Z$	50 $\Omega$
Insertion Loss	$I_L$	< 0.25 dB
Return Loss	$R_L$	> 20 dB
Insulation Resistance of Protection at $U_c$	$R_{iso}$	> 10 G $\Omega$
Frequency Range	$f_G$	0 - 6.0 GHz

**Mechanical**

Temperature Range	-40 ° C to +80 ° C
Connection	SMA Male to SMA Female
Degree of Protection IEC/EN 60529	IP 20
Housing Material	Metal

**Order Information**

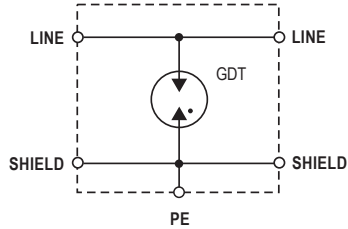
CP-SMA-MF-180	800 887
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## RayDat CP-SMA Series

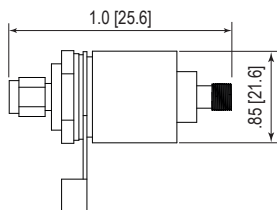
### Internal Configuration

#### Legend

GDT Gas Discharge Tube  
PE Ground



### Dimensions & Packaging



#### CP-SMA

180

#### Dimensions

Weight per Unit	2.40 oz [68 g]
Packaging Dimensions (Single Unit)	20.84 × 1.58 × 1.58" [72 × 40 × 40 mm]
Minimum Package Quantity	100 pieces

inches  
[mm]

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