

LP-GTR-N Series

- DC Pass Multi-Strike Design
- Replaceable Gas Tube
- Broadband Bidirectional Design
- Excellent IL/RL Performance Over the Entire Operating Frequency Band
- Fully Weatherized Housing
- Solid Brass Construction for Durability and Long Life
- Includes Universal Right Angle Bracket Adaptor

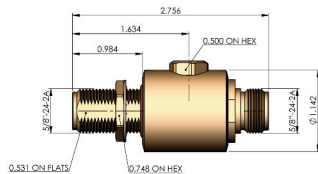


Lightning and Surge Protection for The 21st Century™

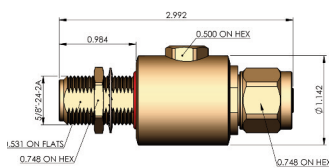
The **Times-Protect®** LP-GTR-N series is an exceptional broadband DC pass design for lightning protection applications requiring DC power to be supplied to the electronics. Offering outstanding surge performance, the LP-GTR-N series is the perfect protection solution for distributed antenna systems, tower mounted amplifiers, GPS systems and other applications requiring DC pass circuitry. These devices exhibit outstanding RF performance with high surge current handling characteristics and cover a broad range of power handling requirements from 50 to 550 watts. Its fully weatherized housing meeting IP67 standard allows for outdoor as well as indoor installation. The N connector designs cover the entire frequency spectrum from DC through 3000MHz.

LP-GTR-N Series:

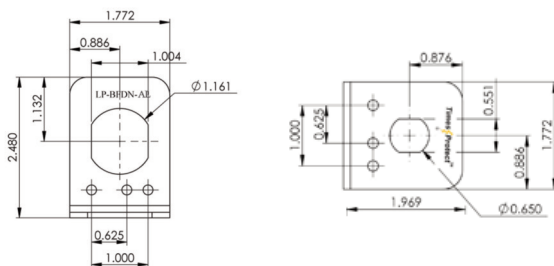
- LP-GTR-NFF (90Vdc/50W)
- LP-GTR-NFF-23 (230Vdc/210W)
- LP-GTR-NFF-35 (350Vdc/550W)
N Female connectors on both sides - bidirectional
- LP-GTR-NFM (90Vdc/50W)
- LP-GTR-NFM-23 (230Vdc/210W)
- LP-GTR-NFM-35 (350Vdc/550W)
N Male connector on one side & N Female connector on the other side - bidirectional



- LP-GTR-NFF
 - LP-GTR-NFF-23
 - LP-GTR-NFF-35
- DC Pass N Type F/F



- LP-GTR-NFM
 - LP-GTR-NFM-23
 - LP-GTR-NFM-35
- DC Pass N Type F/M



- Universal Right Angle Bracket Adaptor

*All Dimensions shown in inches

Electrical Specifications

Impedance	50 Ω		
Frequency Range	DC-3000 MHz		
VSWR/Return Loss	< 1.1:1 / <-26dB (DC-2800MHz) < 1.13:1 / <-24dB (2800-3000MHz)		
Insertion Loss	< 0.1dB (DC-1000MHz) < 0.2dB (1000-3000Mhz)		
Maximum Surge Current	20kA multiple (8x20 μ s wave-form)		
Part Number: LP-GTR	NFF/NFM	NFF-23/NFM-23	NFF-35/NFM-35
Impulse Sparkover	500V (1kV/ μ s)	700V (1kV/ μ s)	800V (1kV/ μ s)
Turn on	90Vdc	230Vdc	350Vdc
Average Power	50 Watts	210 Watts	550 Watts
Protection Circuit	DC Pass		

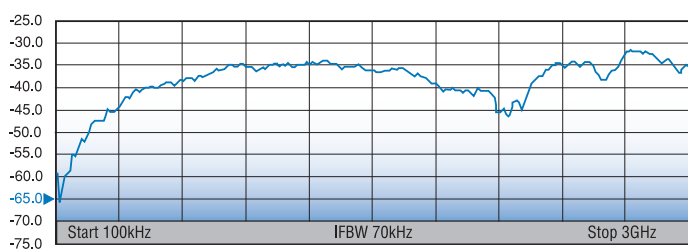
Mechanical / Environmental Specifications

Temp Range Storage/Operating	-40°C - +85°C		
Weatherization	IEC 60068 40/085/21 & IP67		
Thermal Shock	US MIL-STD 202, Meth.107,Cond.B		
Vibration	US MIL-STD 202, Meth.204,Cond.B		
Shock	US MIL-STD 202, Meth.213,Cond.I		
RoHS Compliant	Yes		
Wear/Mating Cycles	500 minimum		
Recommended Coupling Nut Torque	7 to 10 lb-in		
Unit Weight	0.2kg/pc \ 0.44lb		

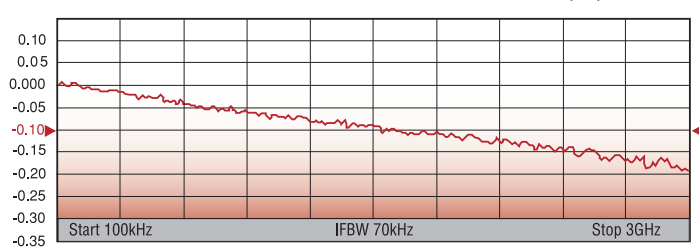
Material Specifications

Component	Material	Plating
Body	Brass	White Bronze
Inner Conductor Male	Brass	Silver
Inner Conductor	Phosphor Bronze	Silver
Washer	Brass	White Bronze
Coupling Nut	Brass	White Bronze
Insulator	TPX	--
O-Ring	Silicone Rubber	--

S11 TYPICAL RETURN LOSS(dB)



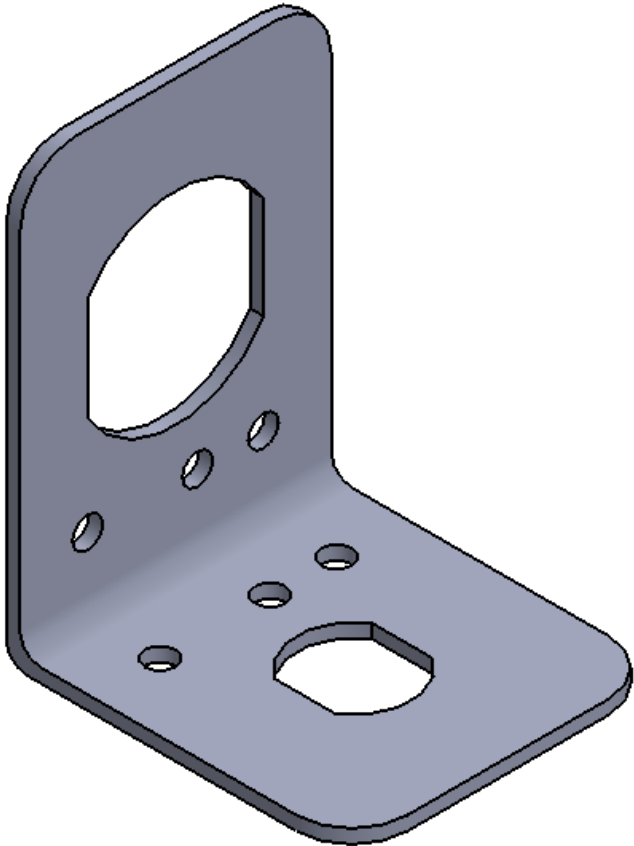
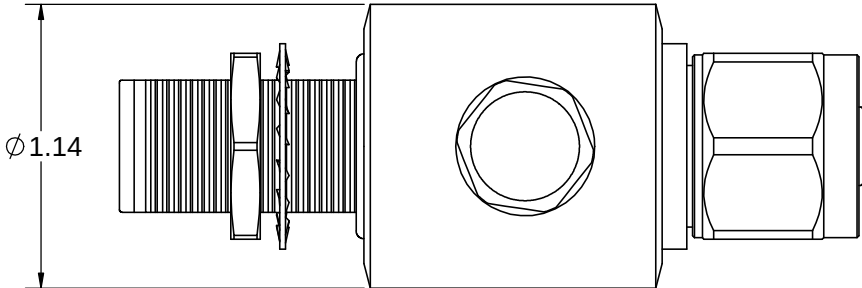
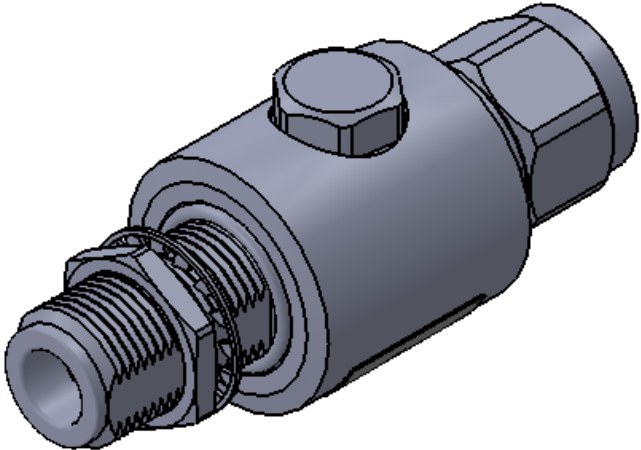
S21 TYPICAL INSERTION LOSS (dB)



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REV.	REVISION DESCRIPTION	DFM	DATE	APPD	DATE
A	RELEASED FOR PRODUCTION	M.E.	03/24/14	M.E.	03.24/14



NOTES:

1. ELECTRICAL PERFORMANCE

IMPEDANCE: 50 OHMS
OPERATING FREQUENCY: DC-3000 MHz
VSWR/RETURN LOSS: < 1.1:1 / < -26 dB (DC-2800 MHz)
< 1.13:1 / < -24 dB (2800-3000 MHz)
INSERTION LOSS: < 0.1 dB (DC-1000 MHz)
< 0.2 dB (1000-3000 MHz)
AVERAGE POWER: 210 W
MAX SURGE CURRENT: 20 kA MULTIPLE (8/20 us WAVE-FORM)
IMPULSE SPARKOVER: 700 V (1 kV/us)
TURN ON: 230 Vdc
PROTECTION CIRCUIT: DC PASS, BIDIRECTIONAL

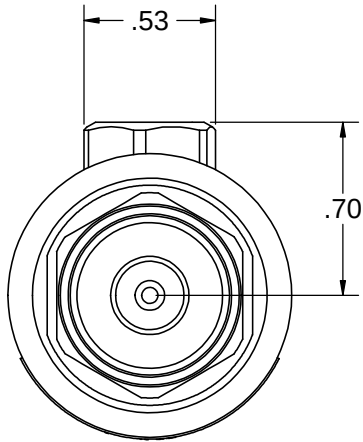
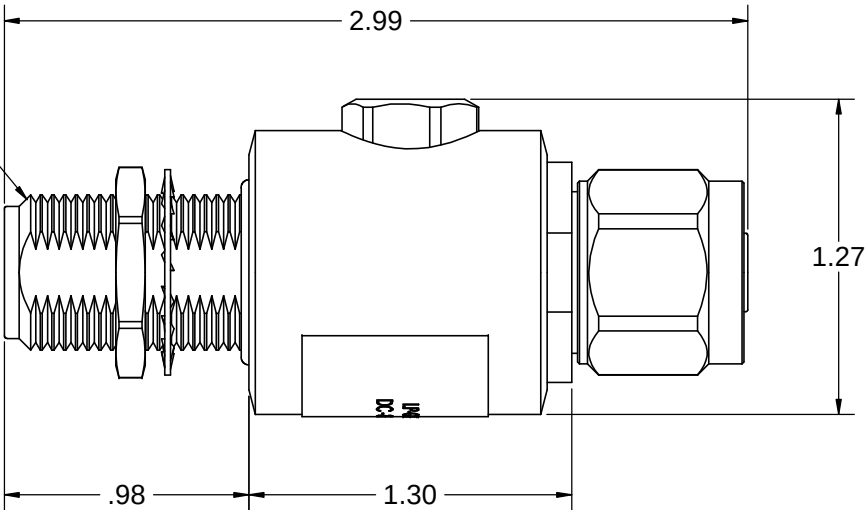
2. ENVIRONMENTAL CHARACTERISTICS

STORAGE/OPERATING TEMPERATURE: -40C TO +85C
WEATHERIZATION: IP67
VIBRATION: MIL-STD 202, METHOD 204, CONDITION B
RoHS COMPLIANT

3. MATERIAL AND FINISH

INNER CONNECTOR FEMALE: PHOSPHOR BRONZE, SILVER PLATE
INNER CONNECTOR MALE: BRASS, SILVER PLATE
BODY: BRASS, WHITE BRONZE PLATE
INSULATOR: TPX
COUPLING NUT: BRASS, WHITE BRONZE PLATE
O-RING: SILICONE RUBBER

5/8-24 UNEF-2A



MATERIAL:



USED ON ASSY.

DRAFTSMAN	M. ELLIS	03/24/14
CHECKER	M. ELLIS	03/24/14
APPROVED	M. ELLIS	03/24/14

UNLESS OTHERWISE SPECIFIED	
ALL DIMENSIONS ARE IN INCHES	
MACHINED SURFACES FINISH 32 RMS MAX.	
REMOVE ALL BURRS .005 MAX. BREAK	
MACHINE CORNERS .005 MAX. FILLET R.	
TOLERANCES ON DECIMALS	
.XX ± .01	.XXX ± .005
ANGLES ± 1°	FRACTIONS ± 1/32
DO NOT SCALE DRAWING	

TIMES MICROWAVE SYSTEMS

TITLE: SURGE PROTECTOR
N FEMALE TO N MALE
DC-3000 MHz

DWG. SIZE
C
CODE IDENT. 68999

DRWG. NO. LP-GTR-NFM-23
SCALE: 2:1

REV. A

SHEET 1 OF 1