DMT ONLINE
www.dmtonline.dk

ISO 9001 Certified

# Times Protect™

## LP-GTR-D 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™

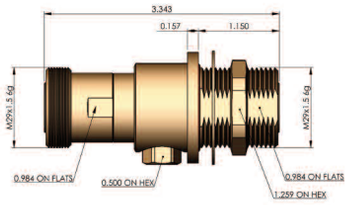
The **Times -Protect™** LP-GTR-D series is an exceptional broadband DC pass design for lightning protection applications requiring DC power to be supplied to the electronics. Offering outstanding surge performance the LP-GTR-D series is the perfect protection solution for distributed antenna systems, 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 716 DIN connector types can be used from DC through 2500MHz.

LP-GTR-D Series:

- LP-GTR-DFF (90Vdc/50W)
- LP-GTR-DFF-23 (230Vdc/210W)
- LP-GTR-DFF-35 (350Vdc/550W)
  716 DIN Female connectors on both sides - bidirectional
- LP-GTR-DFM (90Vdc/50W)
- LP-GTR-DFM-23 (230Vdc/210W)
- LP-GTR-DFM-35 (350Vdc/550W)
  716 DIN Male connector on one side & 716 DIN Female connector on the other side - bidirectional

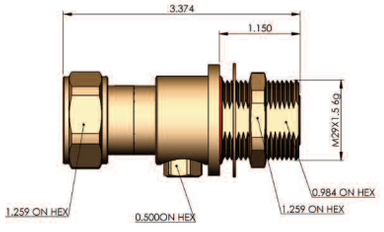
TIMES MICROWAVE SYSTEMS

# Times-Protect™ Specifications



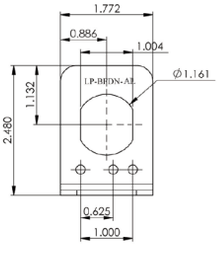

- LP-GTR-DFF
- LP-GTR-DFF-23
- LP-GTR-DFF-35

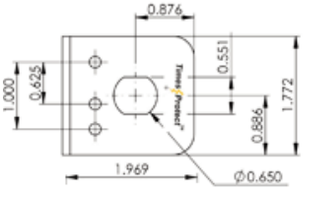
DC Pass DIN Type F/F




- LP-GTR-DFM
- LP-GTR-DFM-23
- LP-GTR-DFM-35

DC Pass DIN Type F/M




- Universal Right Angle Bracket Adaptor

*All dimensions shown in inches

## Electrical Specifications

| | | | |
|---|---|---|---|
| Impedance | | 50 Ω | |
| Frequency Range | | DC-2500 MHz | |
| VSWR/Return Loss | | < 1.08:1 / <-28dB (DC to 1000MHz)<br>< 1.1:1 / <-26dB (1000 to 2500MHz) | |
| Insertion Loss | | < 0.1dB (DC-1000MHz)<br>< 0.2dB (1000-2500MHz) | |
| Maximum Surge Current | | 20kA multiple (8x20µs wave-form) | |
| Part Number: LP-GTR- | DFF/DFM | DFF-23/DFM-23 | DFF-35/DFM-35 |
| Impulse Sparkover | 500V (1kV/µs) | 700V (1kV/µs) | 800(1kV/µs) |
| Turn-on | 90Vdc | 230Vdc | 350Vdc |
| Average Power | 50 Watts | 210 Watts | 550 Watts |
| Protection Circuit | DC Pass | | |

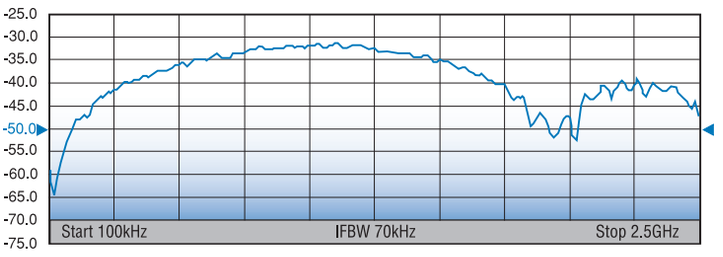
## Mechanical / Environmental Specifications

| | |
|---|---|
| Temp Range Storage/Operating | -40°C - +85°C |
| Weatherization | IEC 60068 40/085/21 & IP 67 |
| 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 | 220 to 300 lb-in |

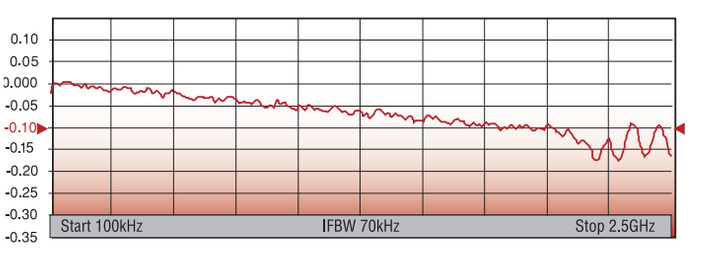
## Material Specifications

| Component | Material | Plating |
|---|---|---|
| Body | Brass | White Bronze |
| Inner Conductor Male | Brass | Silver |
| Inner Conductor Female | 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)




TIMES MICROWAVE SYSTEMS

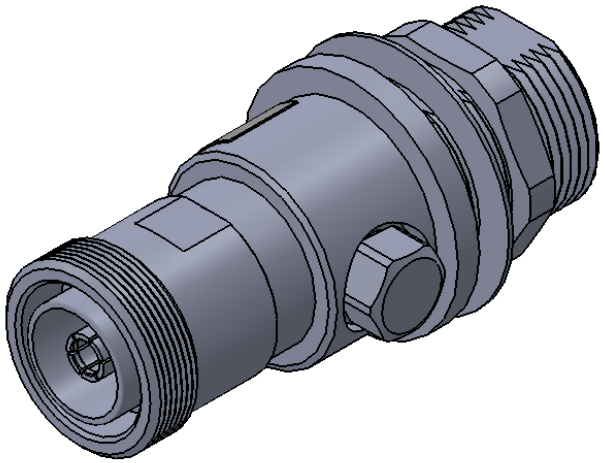
World Headquarters: 358 Hall Avenue, Wallingford, CT 06492 • Tel: 203-949-8400, 1-800-867-2629 • Fax: 203-949-8423
International Sales: 4 School Brae, Dysart, Kirkcaldy, Fife, Scotland KY1 2XB UK • Tel: +44(0)1592655428
China Sales: No. 318 Yuan Shan Road, Shanghai 201108 China • Tel: 86-21-51761234 • Fax: 86-21-64424098
www.timesmicrowave.com

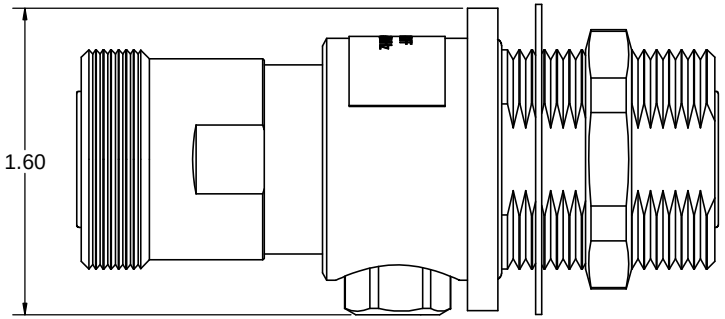
© 2010, Times Microwave Systems, Wallingford, CT 06492

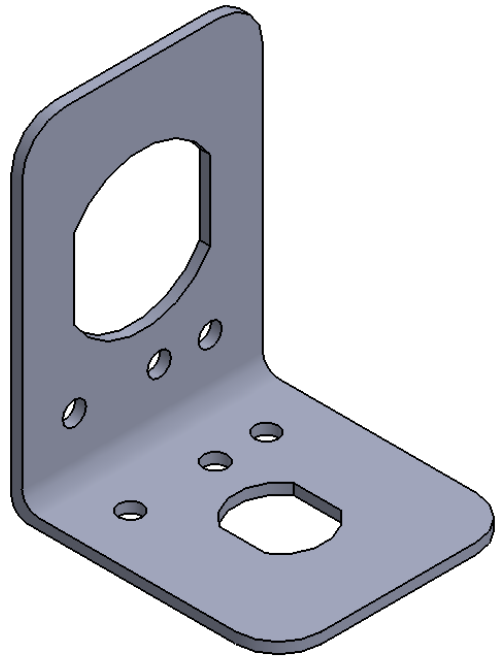
NOTICE OF PROPRIETARY RIGHTS

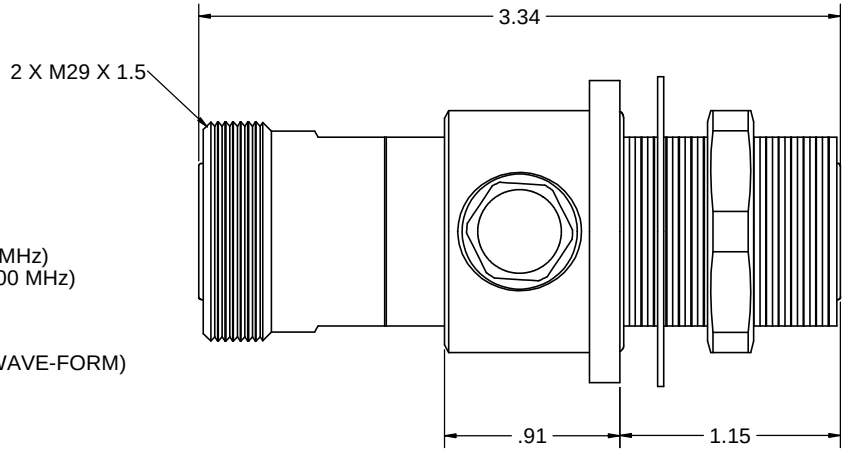
THIS DOCUMENT CONTAINS CONFIDENTIAL TECHNICAL DATA, INCLUDING TRADE SECRETS, PROPRIETARY TO TIMES MICROWAVE SYTEMS. DISCLOSURE OF THIS DATA IS EXPRESSLY CONDITIONED UPON YOUR ASSENT THAT ITS USE IS LIMITED TO USE WITHIN YOUR COMPANY ONLY. ANY OTHER USE IS STRICTLY PROHIBITED WITHOUT THE PRIOR WRITTEN CONSENT OF TIMES MICROWAVE SYSTEMS.

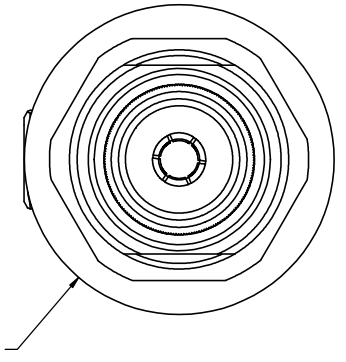
| REV. | REVISION DESCRIPTION | DFTM | DATE | APPD | DATE |
|---|---|---|---|---|---|
| A | RELEASED FOR PRODUCTION | M.E. | 03/24/14 | M.E. | 03/24/14 |








NOTES:

1. ELECTRICAL PERFORMANCE

IMPEDANCE: 50 OHMS
OPERATING FREQUENCY: DC-2500 MHz
VSWR/RETURN LOSS: < 1.08:1 / < -28 dB (DC-1000 MHz)
< 1.1:1 / < -24 dB (1000-2500 MHz)
INSERTION LOSS: < 0.1 dB (DC-1000 MHz)
< 0.2 dB (1000-2500 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
BODY: BRASS, WHITE BRONZE PLATE
INSULATOR: TPX
COUPLING NUT: BRASS, WHITE BRONZE PLATE
O-RING: SILICONE RUBBER

MATERIAL:

www.dmtonline.dk

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
DIN FEMALE TO DIN FEMALE
DC-2500 MHz

| DWG. SIZE | DRWG. NO. | REV. |
|---|---|---|
| C | LP-GTR-DFF-23 | A |
| CODE IDENT. 68999 | SCALE: 2:1 | SHEET 1 OF 1 |