TIMES MICROWAVE SYSTEMS

Engineered Products:

FBT-300
Flexible Low Loss High Power Communications Coax

Ideal for...

- High Power Base Station Jumper Assemblies
- In-Building Plenum Feeder Runs
- Any High Power Low Loss RF cable application

- **FBT™** is an indoor/outdoor highly fire retardant cable intended specifically for runs within and between base station cabinets. It is also applicable for return air handling plenums (e.g., dropped ceilings, raised floors). It has a UL/NEC rating of 'CL2P' for plenum applications.
- **Flexibility** and bendability are hallmarks of the FBT-300 cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.
- **Low Loss** is another hallmark feature of FBT-300. Size for size FBT has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.
- **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).
- **Weatherability:** FBT-300 cables designed for outdoor exposure incorporate FEP jackets for UV resistance and have life expectancy in excess of 20 years.
- **Connectors:** A wide variety of connectors are available for FBT-300 cable, including all common interface types, reverse polarity, and a choice of solder or non-solder center pins. Most FBT connectors employ crimp outer attachment using standard hex crimp sizes.
- **Cable Assemblies** – All FBT-300 cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

Construction Specifications

Description	Material	In.	(mm)
Inner Conductor	Solid BC	0.063	(1.60)
Dielectric	Low Density PTFE	0.190	(4.83)
Outer Conductor	Aluminum Tape	0.196	(4.98)
Overall Braid	Tinned Copper	0.225	(5.72)
Jacket	Brown FEP	0.260	(6.60)

Mechanical Specifications

Performance Property	Units	US	(metric)
Bend Radius: installation	in. (mm)	1.3	(31.8)
Bend Radius: repeated	in. (mm)	3	(76.2)
Bending Moment	ft-lb (N-m)	0.38	(0.52)
Weight	lb/ft (kg/m)	0.065	(0.10)
Tensile Strength	lb (kg)	120	(54.52)
Flat Plate Crush	lb/in. (kg/mm)	30	(0.54)

Environmental Specifications

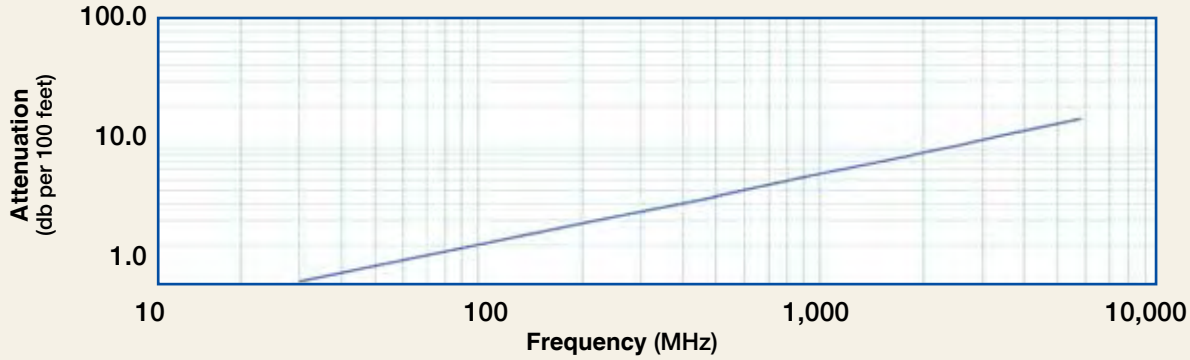
Performance Property	°F	°C
Installation Temperature Range	-67/+302	-55/+150
Storage Temperature Range	-67/+302	-55/+150
Operating Temperature Range	-67/+302	-55/+150

Electrical Specifications

Performance Property	Units	US	(metric)
Velocity of Propagation	%	76	
Dielectric Constant	NA	1.73	
Time Delay	nS/ft (nS/m)	1.34	(4.40)
Impedance	ohms	50	
Capacitance	pF/ft (pF/m)	26.7	(87.6)
Inductance	uH/ft (uH/m)	0.067	(0.22)
Shielding Effectiveness	dB	>90	
DC Resistance			
Inner Conductor	ohms/1000ft (/km)	2.61	(8.6)
Outer Conductor	ohms/1000ft (/km)	2.21	(7.3)
Voltage Withstand	Volts DC	2000	
Jacket Spark	Volts RMS	5000	
Peak Power	kW	10	

Part Description				Stock
Part Number	Application	Jacket	Color	Code
FBT-300	Indoor/Outdoor	FEP	Brown	54168

Attenuation vs. Frequency **(typical)**



Frequency (MHz)	30	50	150	220	450	900	1500	1800	2000	2500	3400	5800
Attenuation dB/100 ft	1.1	1.4	2.5	3.0	4.3	6.2	8.0	8.8	9.3	10.5	12.3	16.3
Attenuation dB/100 m	3.6	4.7	8.1	9.9	14.2	20.2	26.3	28.9	30.6	34.3	40.3	53.5
Avg. Power kW	3.44	2.67	1.53	1.26	0.87	0.61	0.47	0.43	0.40	0.36	0.30	0.23

Calculate Attenuation = (0.200179) • $\sqrt{\text{FMHz}}$ + (0.000183) • FMHz (interactive calculator available at http://www.timesmicrowave.com/cable_calculators)
Attenuation: VSWR=1.0 ; Ambient = +25°C (77°F) **Power:** VSWR=1.0; Ambient = +40°C; Inner Conductor = 100°C (212°F);
Sea Level; dry air; atmospheric pressure; no solar loading

Connectors

Interface	Description	Part Number	Stock Code	VSWR** Freq. (GHz)	Coupling Nut	Inner Contact Attach	Outer Contact Attach	Finish* Body /Pin	Length in (mm)	Width in (mm)	Weight lb (g)
1. SMA Male	Straight Plug	TC-300-SM	3190-501	<1.25:1 (2.5)	Hex	Solder	Crimp	SS/G	1.0 (25)	0.35 (8.9)	0.018 (8.2)
2. SMA Female	Bulkhead Jack	TC-300-SF-BH	3190-590	<1.25:1 (2.5)	NA	Solder	Crimp	SS/G	1.1 (28)	0.31 (7.9)	0.022 (10.0)
3. TNC Male	Straight Plug	TC-300-TM	3190-500	<1.25:1 (2.5)	Knurl	Solder	Crimp	N/S	1.7 (43)	0.59 (15.0)	0.050 (22.7)

*Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alballoy **VSWR spec based on 3 foot cable with a connector pair

Hardware Accessories

Type	Part Number	Stock Code	Description
Ground Kit	GK-S300TT	GK-S300TT	Standard Ground Kit (each)

Install Tools

Type	Part Number	Stock Code	Description
Crimp Tool	CT-400/300	3190-666	Crimp tool for LMR 300 connectors
Deburr Tool	DBT-U	3192-001	Removes center conductor rough edges
Cutting Tool	CCT-01	3190-1544	Cable end flush cut tool
Replacement Blade	RB-01	3190-1609	Replacement blade for cutting tool