



single path to optimal performance

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## ArcTite®

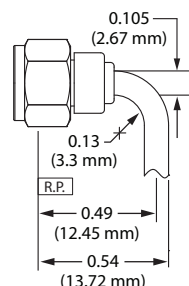
### Ultra-low profile bends

- ▶ Ultra-low profile height of 0.54 inch (13.7 mm)
- ▶ IP67 waterproof rating
- ▶ Replaces higher cost, lower performance right angle solutions
- ▶ Retains performance in bent condition
- ▶ Ideal for high density packaging
- ▶ Available in 0.086 and 0.141 cable sizes
- ▶ DC-40 GHz

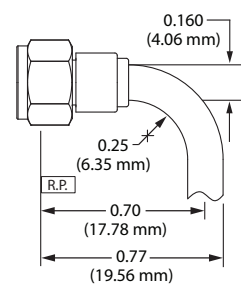
ArcTite® series cable assemblies provide ultra-low profile bends without the need for supplemental strain relief boots. Dynawave's innovative connector designs conform to the MIL-STD-348 interface specification and utilize a 360° internal solder termination for high reliability and enhanced shielding effectiveness.

These assemblies are ideal for high density, internal module connections and provide a cost effective, higher performance alternative to right angle connectors. ArcTite® assemblies replace standard 0.086 and 0.141 custom semi-rigid cables eliminating the need for complex, pre-defined bends.

ArcTite 086



ArcTite 141



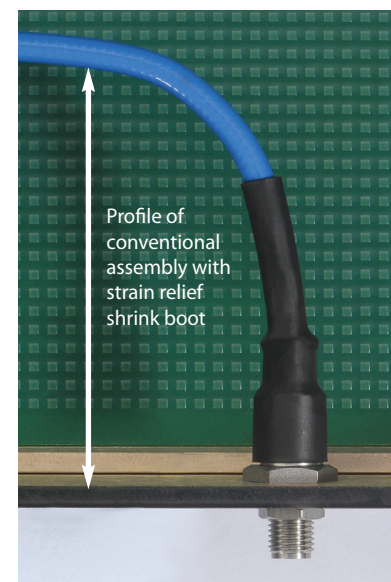
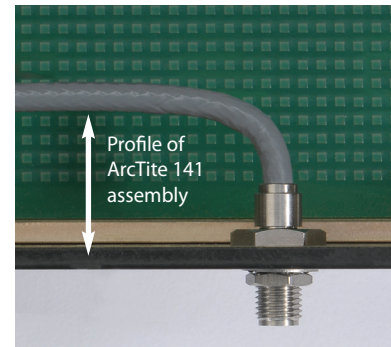
ArcTite® assemblies are available in standard lengths with SMA, SSMA, SMP, and 2.92 mm connectors, ready for quick delivery. Hybrid assemblies with traditional MCX or SMP right angle connectors on one end are also available to make PCB terminations.

General Specifications	ArcTite 086		ArcTite 141	
Frequency (maximum)	40 GHz		26.5 GHz	
Impedance	50 Ohms		50 Ohms	
Operating Temperature	- 65°C to + 125°C		-65°C to + 125°C	
Cable Attenuation (maximum)	dB/ft	dB/m	dB/ft	dB/m
1 GHz	0.232	0.761	0.128	0.420
3 GHz	0.418	1.371	0.238	0.781
6 GHz	0.615	2.018	0.360	1.181
12 GHz	0.916	3.005	0.558	1.831
18 GHz	1.170	3.839	0.728	2.388
26.5 GHz	1.459	4.787	0.934	3.064
32 GHz	1.661	5.449	—	—
40 GHz	1.913	6.276	—	—
Insertion Loss	Refer to product data sheet or website for insertion loss by specific cable assembly length			
Shielding Effectiveness	-90 dB		-90 dB	
Minimum Bend Radius	0.13 inch (3.18 mm)		0.25 inch (6.35 mm)	
Outer Cable Diameter	0.105 inch (2.67 mm)		0.160 inch (4.06 mm)	
Connector Retention	15 lbs (6.80 kg)		25 lbs (11.34 kg)	
Thermal Shock	MIL-STD-202, method 107, condition B-3			
Mechanical Shock	MIL-STD-202, method 213, condition F			
Sinusoidal Vibration*	MIL-STD-202, method 104, condition G			
Random Vibration*	MIL-STD-202, method 214, condition K			
Waterproof Rating*	IP67 (ATW versions only)			

\* See note on application page 6 & 7

## Material and Finish

Cable Jacket	Fluoroplastic, type IX (per ASTM D2116) or type X (per ASTM D3159)
Connector Housing	Passivated stainless steel (per ASTM-A-582, type 303)
Connector Dielectric	PTFE (per ASTM-D-1710-02) or composite polystyrene
Connector Center Contacts	BeCu, gold plated (per ASTM-B-488, type 1)
Gaskets/O-Rings	Silicone rubber (per ZZ-R-765)



## Ordering Information

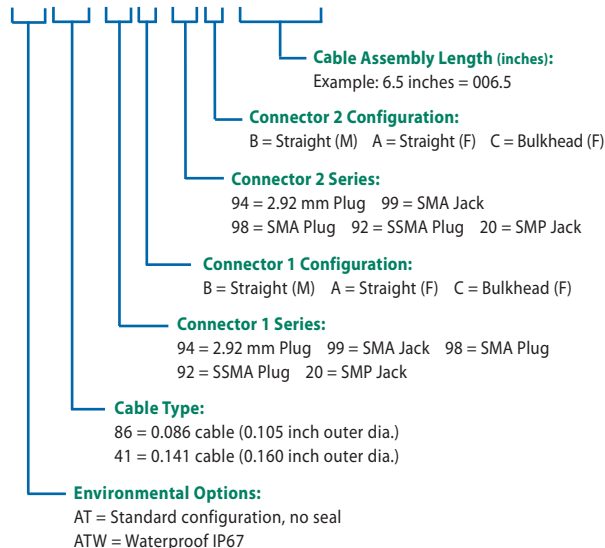
ArcTite® assemblies are available with two basic cable types, 0.086 and 0.141, and with connector options that include SMA, SSMA, SMP, and 2.92 mm. These assemblies are available in various standard lengths represented by the XXX.X designation of the part number and listed by cable type in the standard length table.

## Standard Lengths and Increments

Series	Standard Lengths
ArcTite 086	2.5 inch (64 mm) to 6.5 inch (165 mm), in increments of 0.5 inch (13 mm)
	7.0 inch (178 mm) to 18 inch (457 mm), in increments of 1.0 inch (25 mm)
ArcTite 141	4.0 inch (102 mm) to 6.5 inch (165 mm), in increments of 0.5 inch (13 mm)
	7.0 inch (178 mm) to 18 inch (457 mm), in increments of 1.0 inch (25 mm)

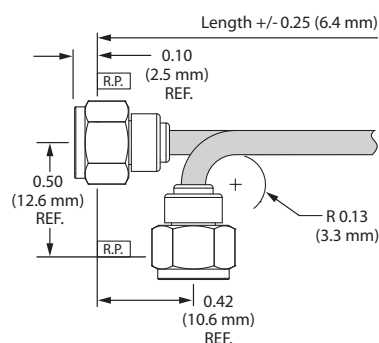
## Part Numbering System

### ATXX-98X-98X-XXX.X



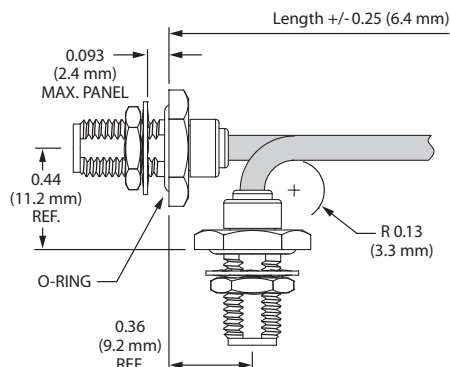
## Connector Options

### ArcTite 086 | SMA Straight Plug



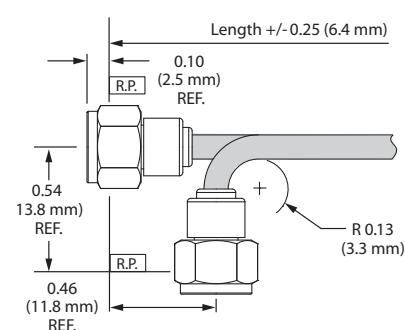
DC - 26.5 GHz	VSWR (maximum)
PN Code: 98B	18 GHz 1.30
	26.5 GHz 1.35

### ArcTite 086 | SMA Bulkhead Jack



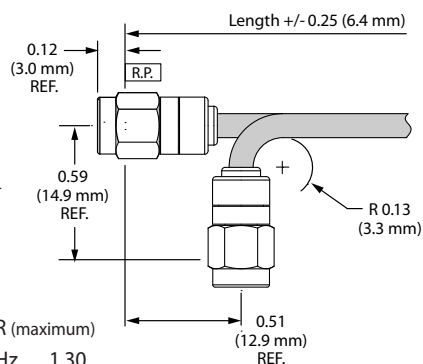
DC - 26.5 GHz	VSWR (maximum)
PN Code: 99C	18 GHz 1.30
	26.5 GHz 1.35

### ArcTite 086 | 2.92 mm Straight Plug



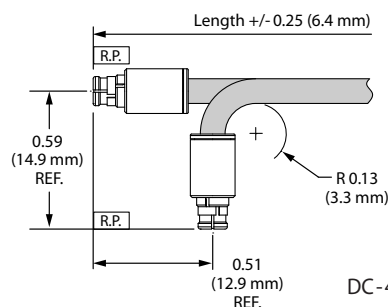
DC - 40 GHz	VSWR (maximum)
PN Code: 94B	18 GHz 1.20
	26.5 GHz 1.25
	40 GHz 1.30

### ArcTite 086 | SSMA Straight Plug



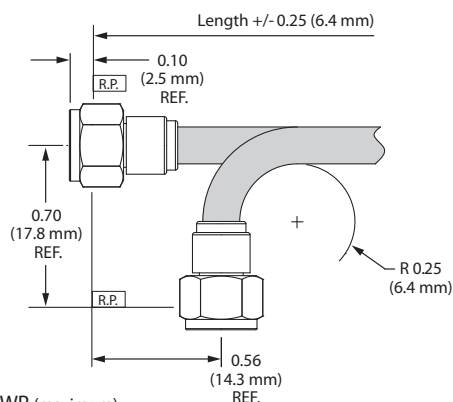
DC - 38 GHz	VSWR (maximum)
PN Code: 92B	18 GHz 1.30
	26.5 GHz 1.40
	38 GHz 1.55

### ArcTite 086 | SMP Straight Jack



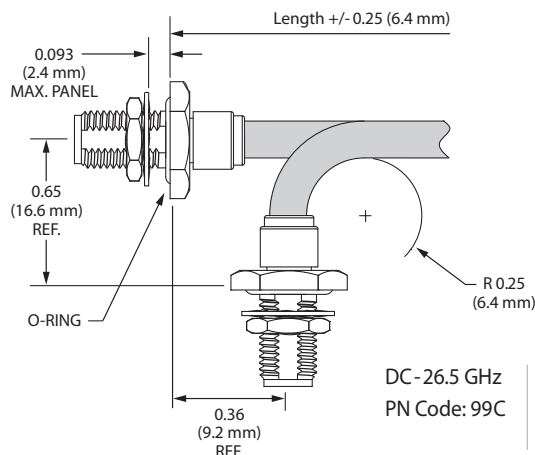
DC - 40GHz	VSWR (maximum)
PN Code: 20A	18 GHz 1.45
	26.5 GHz 1.50
	40 GHz 1.70

### ArcTite 141 | SMA Straight Plug



DC - 26.5 GHz	VSWR (maximum)
PN Code: 99C	18 GHz 1.30
	26.5 GHz 1.35

### ArcTite 141 | SMA Bulkhead Jack

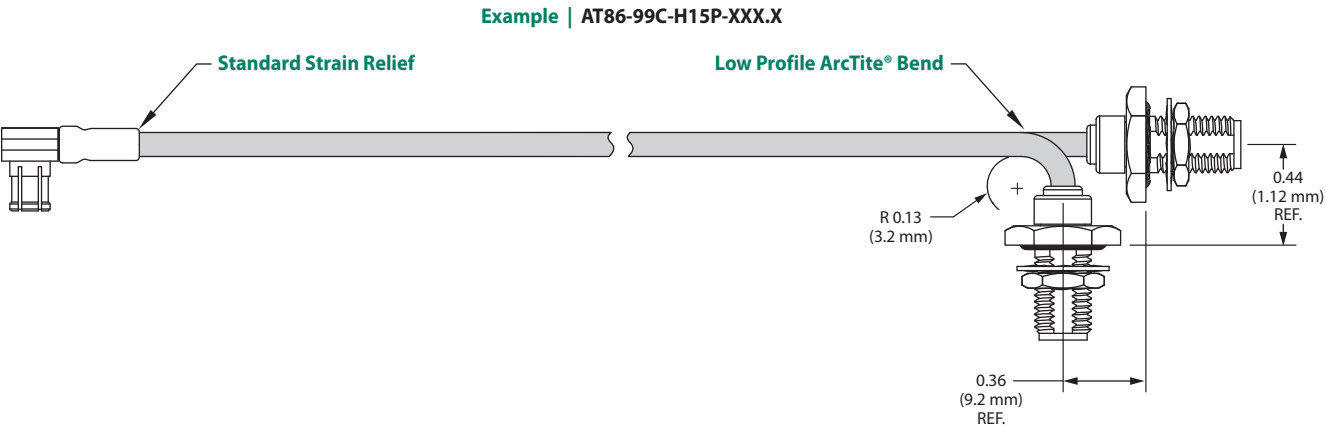


DC - 26.5 GHz	VSWR (maximum)
PN Code: 99C	18 GHz 1.30
	26.5 GHz 1.35

Hybrid Assemblies

Hybrid assemblies provide an ideal solution for applications that require a low profile ArcTite® cable bend on one side, and use of a standard right angle MCX or SMP terminating to a PCB or other point within a module.

Part Number	Description
AT86-98B-H15P-XXX.X	ArcTite 086 SMA plug to MCX right angle plug
AT86-98B-H15B-XXX.X	ArcTite 086 SMA plug to MCX straight plug
AT86-98B-H20P-XXX.X	ArcTite 086 SMA plug to SMP right angle jack
AT86-98B-H85C-XXX.X	ArcTite 086 SMA plug to TNC bulkhead jack
AT86-94B-H20P-XXX.X	ArcTite 086 2.92 mm plug to SMP right angle jack
AT86-99C-H15P-XXX.X	ArcTite 086 SMA bulkhead jack to MCX right angle plug
AT86-99C-H15B-XXX.X	ArcTite 086 SMA bulkhead jack to MCX straight plug
AT86-99C-H20P-XXX.X	ArcTite 086 SMA bulkhead jack to SMP right angle jack
AT86-99C-H30B-XXX.X	ArcTite 086 SMA bulkhead jack to SMPM jack
AT86-20A-H20P-XXX.X	ArcTite 086 SMP jack to SMP right angle jack



Additional Hybrid Connector Options

The following connector types are available for use in ArcTite® hybrid assemblies, utilizing traditional strain relief designs. Contact Dynawave to select from our extensive product offering for your specific connector configuration.

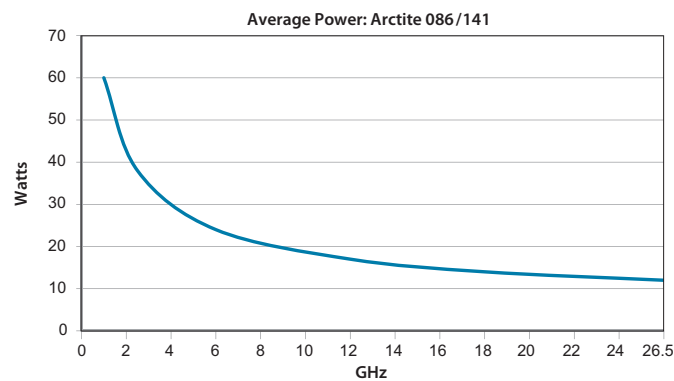
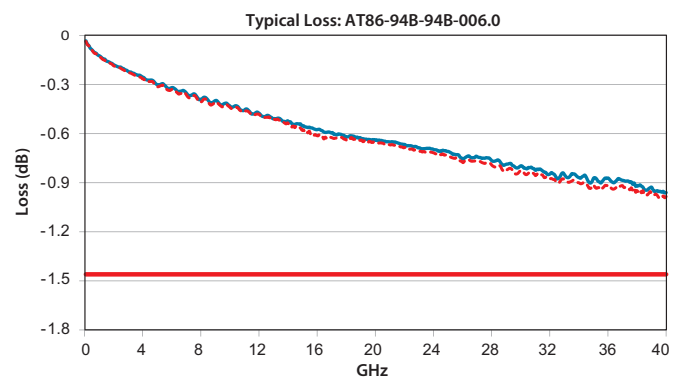
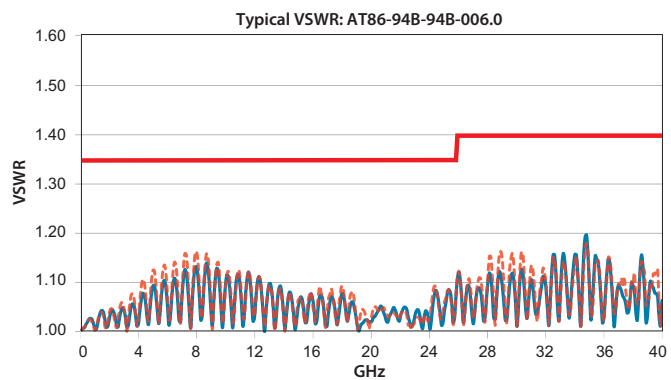
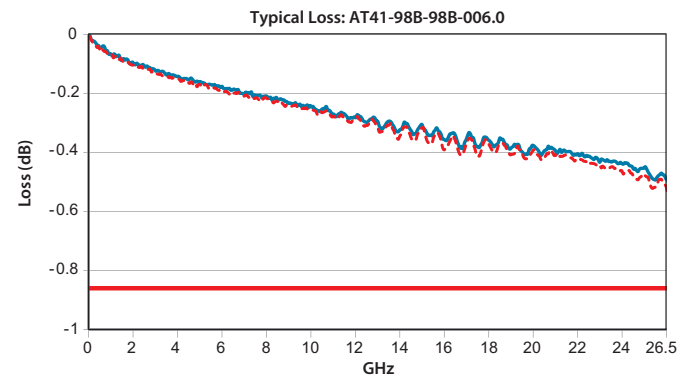
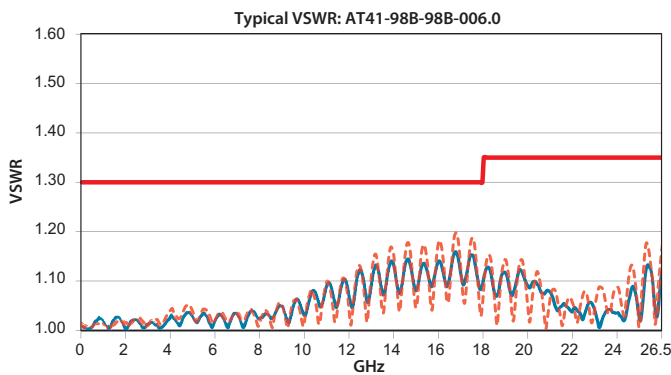
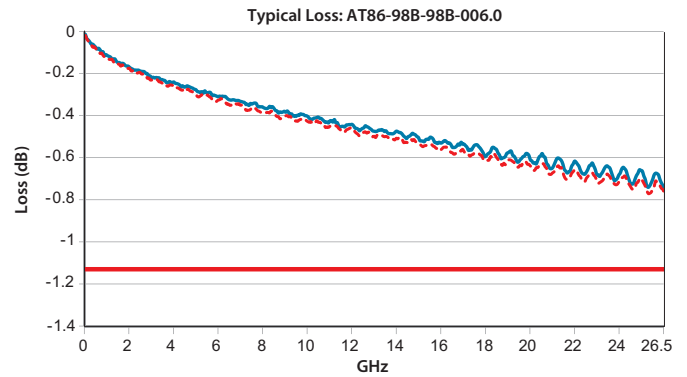
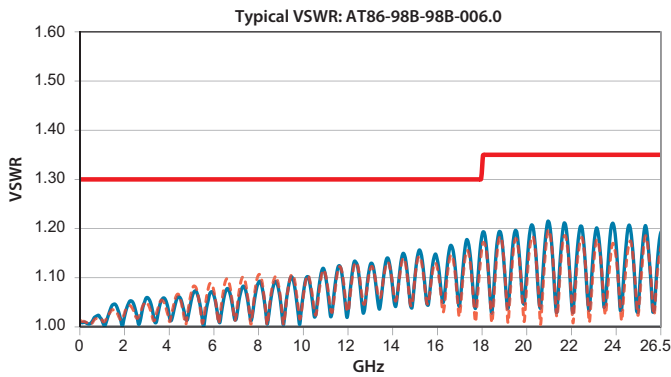
	MMCX	MCX	SMP	SMPM	SSMA	SMA	BMAM	BMA	2.92 mm	N	TNC
ArcTite 086	●	●	●	●	●	●	●	●	●	●	●
ArcTite 141						●		●	●	●	●

## Performance Data

ArcTite® assemblies are designed to allow multiple bends without significant degradation of performance. The performance data below shows typical VSWR and Loss for each cable size before and after bending. ArcTite® assemblies are rated for a minimum of 100 bends.

### Legend

**Blue solid line** = straight condition  
**Red dash line** = bent condition



Sea level, 25°C, no mismatch



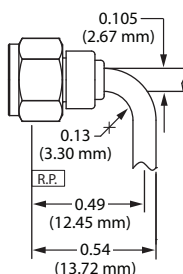
## ArcTite® Application Information

### Minimum Bend Capabilities

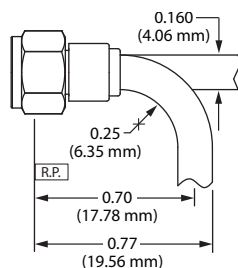
ArcTite® assemblies allow up to 100x 90° bends in any direction at a specified minimum bend radius. The minimum bend radius is defined in the figures below for each cable size.

Do not overstress the cable by using less than the recommended minimum bend radius. Best practice is to preform the bends prior to installation and avoid sharp kinks along the cable bend.

**ArcTite 086**



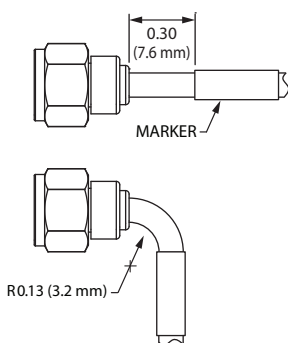
**ArcTite 141**



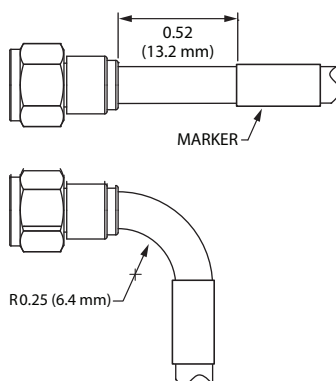
### Cable Markers

Fixed cable markers can be specified for custom ArcTite® assemblies but must be located at a minimum distance back from the connector (as shown below) to ensure that there is no interference or restriction in the minimum bend radius.

**ArcTite 086**

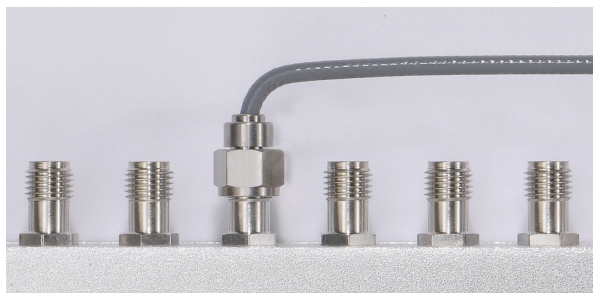


**ArcTite 141**



### Recommended Mating Torque

Recommended mating torque for SMA stainless steel connectors is 7-10 in-lbs (0.8–1.13 NM). ArcTite® SMA connectors are designed without coupling nut snap rings to minimize torque transfer and eliminate the need for anti-torque hex features that add length to the connector body. After hand mating, the cable can easily be positioned as desired prior to final interface torque.



Care should be taken not to rotate the cable after final torque has been applied which could cause excessive stress at the connector-cable junction.

### Recommended Application Usage

ArcTite® assemblies are ideal for high density, module connections where flexible cable and low profile height provide advantages to the system design.

#### Ideal replacement for:

- Custom pre-bent semi-rigid 0.086 or 0.141 cables.
- Conformable cables where cracking or fracture of the outer braid is a concern.
- Higher cost and lower performance right angle connectors.

#### Caution:

ArcTite® applications typically involve lengths less than 12 inches (305 mm) in a generally static environment after installation. This series is not recommended for use as a general purpose test lead that will experience flexure across its service life. Dynawave has specific test & measurement cable assembly designs that are intended for such applications.

### RF Leakage

Cable assembly cross-talk and RF leakage are an important performance considerations. ArcTite® assemblies utilize 360° solder termination in the connector (versus mechanical clamping of the braid) and a double shield cable construction to ensure consistent RF shielding effectiveness of -90 dB minimum.

### Installation Considerations for Vibration Environments

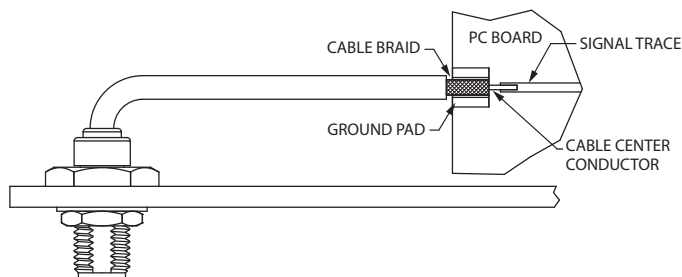
Applications that experience vibration require proper tie-down installation of the cable assemblies. It is recommended that the ArcTite® assemblies be tied-down no more than 2 inches (51 mm) from the back end of the connector. This will prevent work hardening of the connector/cable attachment over prolonged exposure to vibration and will ensure proper service life in the application.



## ArcTite® Application Information

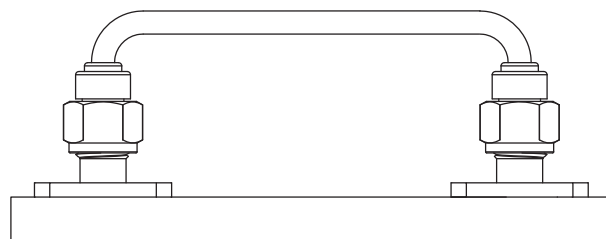
### Direct Solder to PCB Stripline

ArcTite® assemblies can be custom ordered as single-ended pigtails with one end trimmed to specification. Unlike competitive products using a stainless steel outer braid, ArcTite® cable braid is solderable allowing direct termination to stripline.



### Jumper Cables

ArcTite® assemblies provide an excellent, low profile solution for jumper cables between ports or components. ArcTite 086 assemblies are available in standard lengths as short as 2.5 inches (64 mm) for high density applications such as switch matrices or other similar multi-port devices.

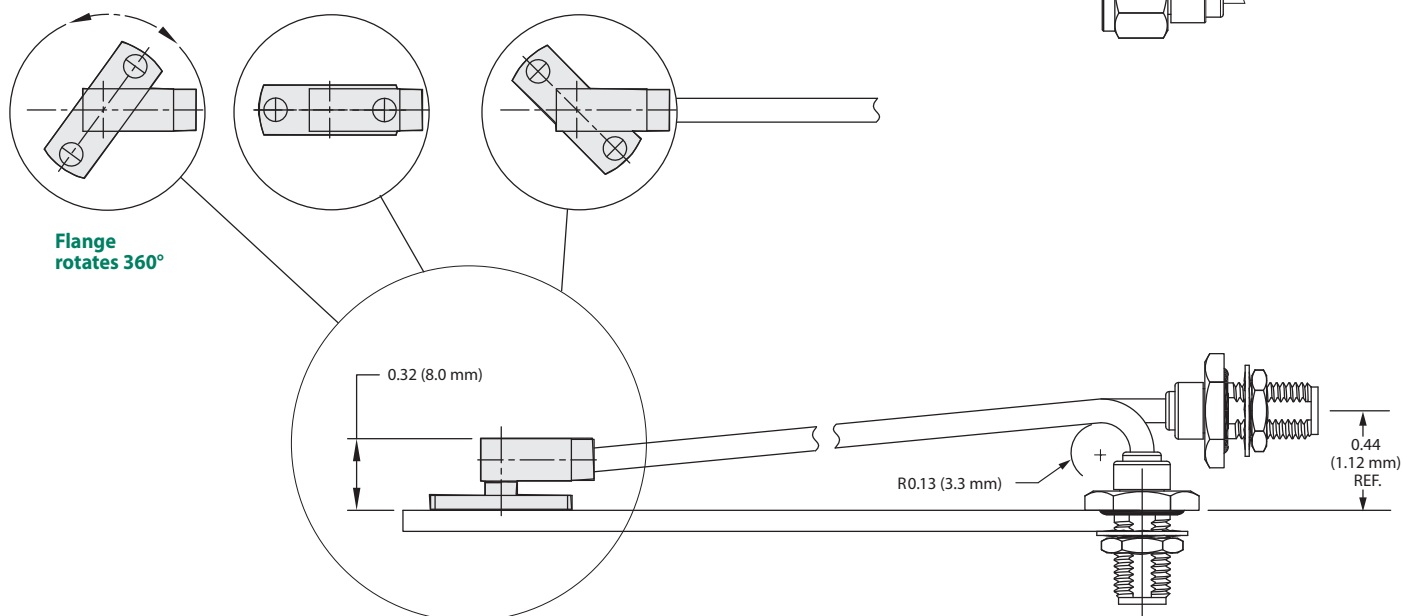


### Rotating Flange Solution

ArcTite 086 can be utilized with our unique rotating flange connector design that allows the cable to be oriented in the most natural position across a 360° arc to minimize stress on the connector/cable junction. The rotating flange connector can be designed to mate with a hermetic seal pin (as shown) or to an SMP, SMPM shroud.

### Waterproof Rating

Part numbers beginning with ATW meet the waterproof rating for IP67 (submersion at depth of at least one meter for 30 minutes). These assemblies employ a minimally longer connector body with a silicone o-ring seal.





Visit our website [www.dynawave.com](http://www.dynawave.com) to see our other innovative cable assembly solutions.

**dynawave**  
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**DynaFlex**  
RF and microwave cable assemblies

- Broadband performance up to 40 GHz
- Low Insertion Loss
- Design options to optimize mechanical or electrical characteristics
- Low loss, phase stable
- Excellent mechanical compression strength
- Stainless steel connectors
- Rugged strain relief design

DynaFlex™ series cable assemblies employ innovative design and material technology to deliver optimal electrical and mechanical performance across a wide range of RF & microwave applications. DynaFlex™ assemblies utilize our DynaCore™ dielectric technology to provide superior mechanical and electrical performance. DynaCore™ is the industry's most compression resistant (500,000 psi) dielectric that protects against damage caused by difficult routing, cable bending, and heat treatment.

DynaFlex™ assemblies are designed with robust, double-walled stress relief strain tubing at the connector cable junction and high temperature potting to ensure reliable, long service life. DynaFlex™ assemblies are available with standard connector options for rapid availability and ease of installation. Custom connector and potting options are available for specific application requirements.

**DynaCore™ Technology**



Our industry leading dielectric core technology provides unique advantages for your customers in system design.

**dynawave**  
single path to optimal performance



**DynaTest**  
The power of repeatable and reliable performance

- Broadband performance up to 30.3 GHz
- Repeatable phase stable performance
- Low Insertion Loss and VSWR
- 100% UT tested
- Mechanical coupling meets fast, reliable quick mating
- Stainless steel connectors
- Excellent strain relief at cable-connector junction

DynaTest™ series cable assemblies are designed to deliver repeatable, precise measurements while lowering your overall total cost. These assemblies offer exceptionally low VSWR and maintain low characteristics across a broad frequency range. This allows a single DynaTest™ cable assembly to be used for the maximum number of measurement requirements. These assemblies are highly flexible, maintain phase stability to ensure repeatable results without the need for modification.

DynaTest™ assemblies provide unique, high value features not commonly found on other production test cables. The rugged mechanical design and high reliability of these assemblies offer greater ease of use for test technicians and ensure long service life for your test applications. DynaTest™ cable assemblies are available through Distribution to support your standard product requirements.

**Applications**



Verify signal for parameter test systems and engineering data.

Visit our website and experience easy to use tools to design, specify, and quote the best assembly for your application.

**dynaflex Cable Configurator**

Cable Assembly Parameters

Maximum Operating Frequency: 40 GHz  
Cable Length: 3 ft  
Connector 1: 2.80 mm straight plug

Available Cable Assemblies

Part Number: KMKM-A7KH-036

View Assembly Report

Connector 1: 2.80 mm straight plug  
Cable: 2.80 mm straight plug  
Connector 2: 2.80 mm straight plug

Cable Assembly Configurator

**dynaflex Cable Assembly Insertion Loss Calculator**

Enter Frequency For Loss Calculation In GHz: 2  
Set Frequency For Calculation

Frequency For Loss Calculation In GHz: 2  
Cable Type: DP100  
Connector: 2.80 mm straight plug  
Connector 1: 2.80 mm straight plug

Unit Of Measurement: Feet  
Assembly Length In Feet: 3

Calculate Cable Assembly Insertion Loss

Cable	Connector	Cable Length	Frequency	VSWR	Insertion Loss	Assembly Loss	Part Number
DP100	2.80 mm straight plug	3 FT	2.0 GHz	0.97 dB	1.3-1	0.03 dB	KMKM-A7KH-036

Part numbers are shown in inches only. Your unit of measurement will be rounded to the nearest inch.

Cable Assembly Insertion Loss Calculator

**dynaflex Part Numbering System**

Maximum Operating Frequency: 35  
Cable Type: DP100  
Connector 1: 2.80 mm straight plug  
Connector 2: 2.80 mm straight plug  
Length In Inches: 36

Connector 1: KM  
Connector 2: KM  
Cable: A7  
Max Frequency: KH  
Length In Inches: 036

Part	Cable	Connector 1	Connector 2	Max Frequency	Part Number	Length In Inches
100	DP100	2.80 mm straight plug	2.80 mm straight plug	35GHz	KMKM-A7KH-036	36

DynaFlex® Part Numbering System

## Dynawave, Inc.

135 Ward Hill Avenue  
Haverhill, MA 01835  
Telephone: (978) 469-0555  
Fax: (978) 521-4589

[www.dynawave.com](http://www.dynawave.com)

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