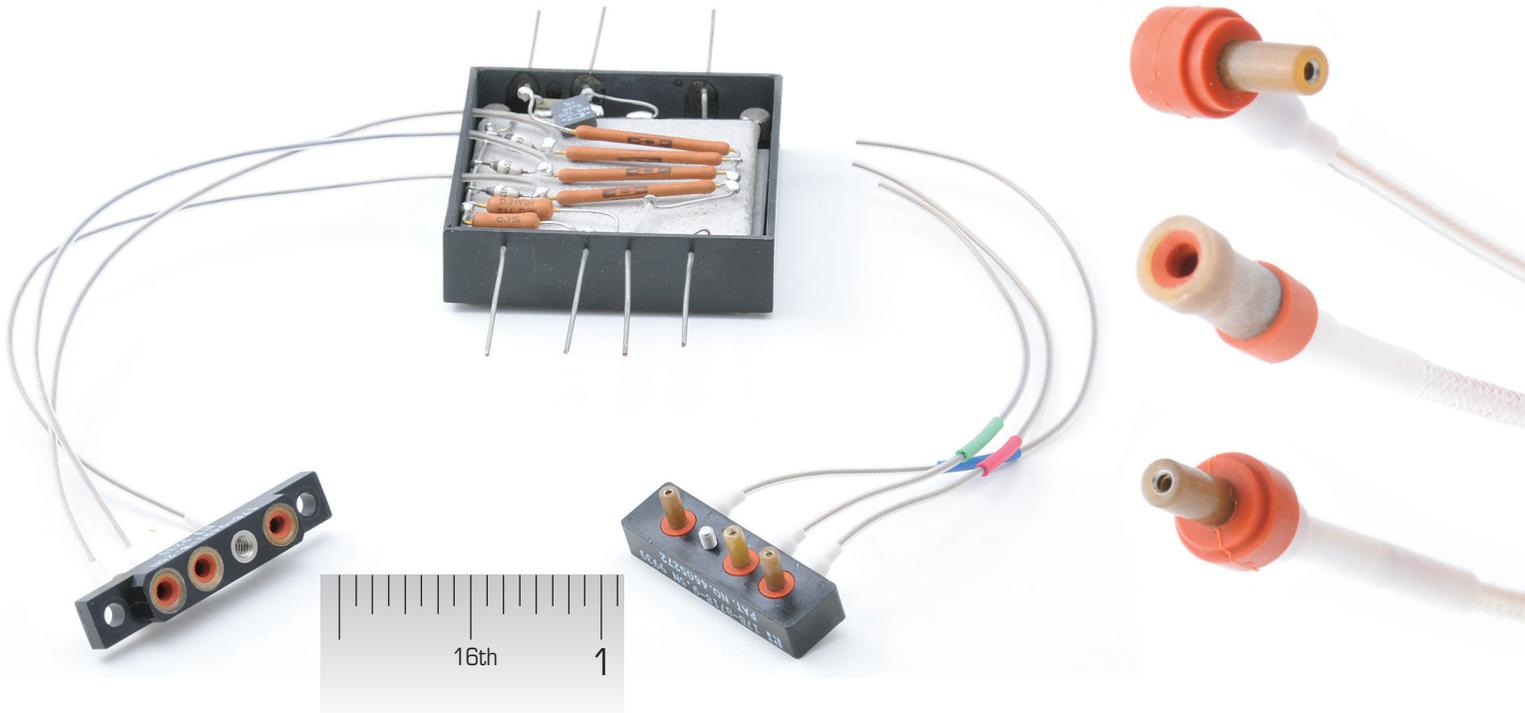


PEE-WEE SERIES

SUBMINIATURE, HIGH RELIABILITY CONNECTOR

12 kVDC • -55°C to 125°C • 70,000 ft. Rated • 1 & 2 Pin



INTRODUCTION

Pee-Wee is one of a family of subminiature, high-voltage connectors for use in high voltage applications where dense electronic packaging is required.

The Pee-Wee connector uses a unique method of sealing high voltage at reduced atmospheric pressure, which allows the connector to be rated at 12 kVDC at 70,000 feet with a temperature range of -55° to 125°C.

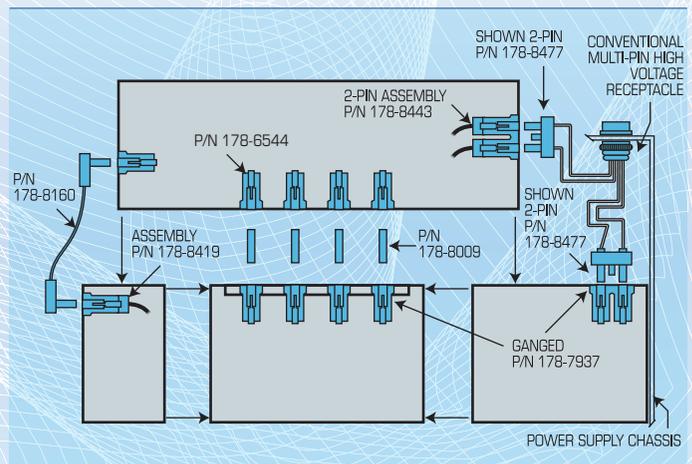
MODULARIZATION

By using Pee-Wee connectors, it is possible to package or re-package a high voltage power supply into multiple modules which can be easily and reliably mated and un-mated with one another.

The packaging technique permits the pre-testing of individual modules as they are being manufactured and the ability to replace modules or perform routine maintenance in the field when necessary.

FEATURES

- Hermetic feedthrough available
- Resistant to most chemicals
- Receptacle P/N 178-6544 contact is capable of being wave-soldered
- Bondable to most adhesives and potting compounds with minimal surface preparation
- Very small size
- Custom configurations available



Typical cross-section of modularized power supply utilizing Pee-Wee connectors and cable assemblies.



TELEDYNE REYNOLDS

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PATENTED ADVANCED INTERFACE SEALING SYSTEM

Teledyne Reynolds pioneered the development of miniature high voltage connectors used within non-pressurized areas of high altitude flying aircraft over forty years ago. This ingenuity is clearly evident in Teledyne Reynolds' patented Advanced Interface Sealing System that is used in the Advanced Group of connectors. The Advanced Group consists of a series of nine connector families described on back of this brochure. The following are the more significant advantages of selecting from the Advanced Group of high voltage connectors.

REPAIRABLE/REPLACEABLE

The seals are molded from a proprietary blend of high grade silicone rubber which allows the seal to function over a temperature range of -55° to 125° C. Because the seal is a separate component of the connector, it can be individually inspected, tested and installed. In addition, if necessary a damaged seal can be removed and replaced. This is not the case in conventional high voltage connectors where the insulator is one piece and a failure of any one pin or circuit usually results in the entire connector or, worse yet, a total cable assembly being scrapped or subjected to a costly repair operation.

SCALABILITY

The unique design of the Advanced Interface Sealing System permits the size of the seal and the connector to be scaled up or down to accommodate higher or lower operating voltages and larger or smaller mounting spaces. Our largest seal is in the Max and Maxxum series and the smallest in the JR series. This enables a high degree of customization to meet evolving customer needs.

MATING

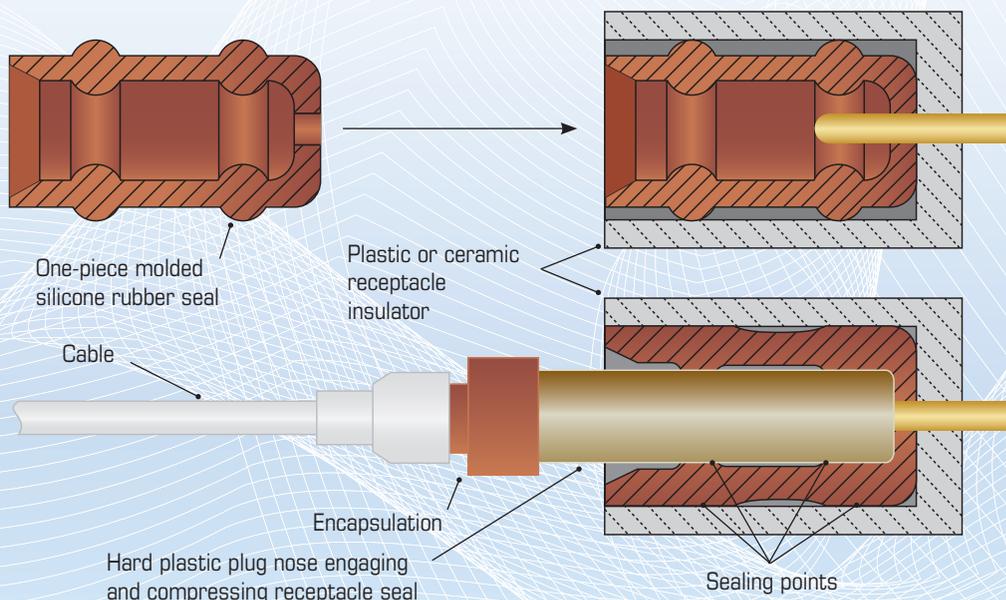
Conventional high voltage connectors require very high mating torque levels in order to effect and maintain an axial high voltage seal. In addition, they must continually compensate for the effects of compression set which is common in connectors using a cone shape or axial compression to achieve a seal. Compensating devices are expensive, bulky and often require special tools and even gauges to reliably mate the connectors.

Connectors using the Advanced interface sealing system require no undue mating forces and no compensation is ever required to maintain the integrity of the mated interface seal. In fact, once these connectors are fully mated, they need only be sufficiently held in place to resist severe vibration and shock. This is due to the use of redundant radial seals in the Advanced interface sealing system. Once the hard plastic insulator of the plug engages the radial rings on the receptacle seal, the high voltage interface seal is complete and will remain so until the plug insulator is withdrawn during any subsequent un-mating operation. The engagement of the seal is illustrated in Figure 1 below.

DESIGN FLEXIBILITY

Systems and Component Packaging Engineers will find connectors and the appropriate cable in the Advanced Group to satisfy a wide range of voltage and current ratings, shielded or non-shielded, ceramic or plastic, and single or multi-pin configurations. These choices allow the designer to utilize available space and maximize package density. Visit the www.teledynereynolds.co.uk or speak to one of our Application Engineers to learn about the variety of shapes and contact arrangements that can be assembled from products in the Advanced Group.

Figure 1. Advanced Interface Seal engagement



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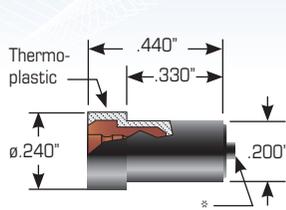
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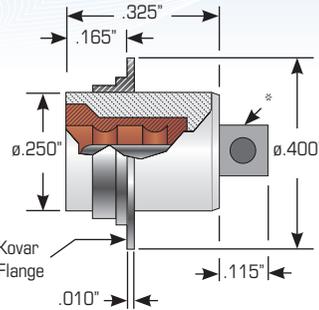
SINGLE PIN RECEPTACLES

Panel Connector*
P/N 178-8544
(Replaces P/N 178-7937)

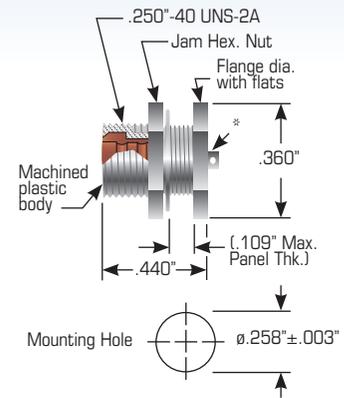


Recommend bonding into epoxy
G-10 plate .080 or .120 inch thick.
Hole diameter .243 inches

Weld Flange* - P/N 467-7022
Soldier Mount* - P/N 467-7024



Panel Receptacle (Threaded)
Rear Panel Mount††
P/N 178-8621



* Contact pot will accommodate 24 AWG wire. Do not exceed 400°F when soldering. Use SN 60 solder.
†† Mates with threaded plug assemblies. † Mates with all non-threaded Pee-Wee series plug assemblies.

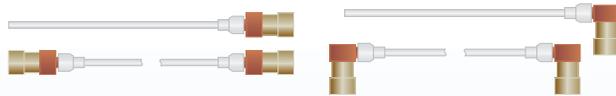
SINGLE PIN PLUG CABLE ASSEMBLIES



	SINGLE END	DOUBLE ENDED	SINGLE END WITH NOMEM™	DOUBLE ENDED WITH NOMEM™	CABLE TYPE
STRAIGHT	178-8166	178-8169	178-8174	178-8177	0.050" Etched FEP
STRAIGHT	178-8425	178-8426	178-8427	178-8428	0.060" Silicone Coated FEP
RT. ANGLE	178-8172	178-8160	178-8167	178-8163	0.050" Etched FEP
RT. ANGLE	178-8423	178-8424	178-8429	178-8430	0.060" Silicone Coated FEP

Mates with all Pee-Wee series non-threaded receptacle cable assemblies.

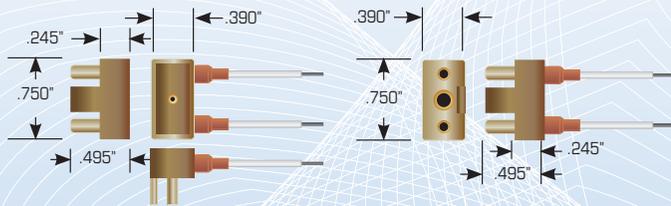
SINGLE PIN RECEPTACLE CABLE ASSEMBLIES



	SINGLE END	DOUBLE ENDED	CABLE TYPE
STRAIGHT	178-8110	178-8180	0.050" Etched FEP
STRAIGHT	178-8419	178-8420	0.060" Silicone Coated FEP
RT. ANGLE	178-8251	178-9768	0.050" Etched FEP
RT. ANGLE	178-8422	178-9769	0.060" Silicone Coated FEP

Mates with all Pee-Wee series non-threaded plug cable assemblies.

2 PIN PLUG CABLE ASSEMBLIES



	RIGHT ANGLE	CABLE TYPE
STRAIGHT	178-8566	0.050" Etched FEP
RIGHT ANGLE	178-8477	0.050" Etched FEP
STRAIGHT	178-8557	0.060" Silicone Coated FEP
STRAIGHT	178-8558	0.050" Etched FEP NOMEM™
STRAIGHT	178-8559	0.060" Silicone Coated FEP NOMEM™

Mates with all Pee-Wee series non-threaded 2 pin receptacle cable assemblies.

**Cable Assembly Ordering Information: Use "F" for feet, "N" for inches.

Example: Assembly 178-6027 10 feet 8 inches in length is ordered as P/N 178-6027-10F-8N

Note: Product part numbers, dimensions and specifications are subject to change without notice. Products listed represent only a small selection of Teledyne Reynolds' products. Please visit www.teledynereynolds.co.uk for the most up to date product line. Contact Teledyne Reynolds Engineering to discuss custom designs. **WARNING:** Connectors should **NEVER** be handled mated or unmated when voltage is applied.

SINGLE PIN, THREADED RECEPTACLE CABLE ASSEMBLIES



	SINGLE END	DOUBLE ENDED	CABLE TYPE
STRAIGHT	178-9499	178-9503	0.050" Etched FEP
STRAIGHT	178-9500	178-9504	0.060" Silicone Coated FEP
RT. ANGLE	178-9509	178-9513	0.050" Etched FEP NOMEM™
RT. ANGLE	178-9510	178-9514	0.060" Silicone Coated FEP NOMEM™

Mates with all Pee-Wee series threaded plug cable assemblies.

SINGLE PIN, THREADED COUPLING PLUG CABLE ASSEMBLIES

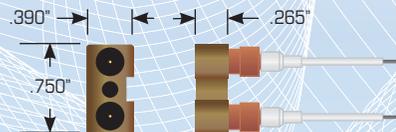


	SINGLE END	DOUBLE ENDED	CABLE TYPE
STRAIGHT	178-8398	178-8402	0.050" Etched FEP
STRAIGHT	178-8399	178-8403	0.060" Silicone Coated FEP
RT. ANGLE	178-9345	178-9349	0.050" Etched FEP NOMEM™
RT. ANGLE	178-9346	178-9350	0.060" Silicone Coated FEP NOMEM™

Mates with all Pee-Wee series threaded receptacle cable assemblies.

The threaded Pee-Wee version is a non-standard design and may require longer lead times.

2 PIN RECEPTACLE CABLE ASSEMBLIES



	CABLE TYPE
SINGLE END	0.050" Etched FEP
178-8433	0.050" Etched FEP
178-8560	0.060" Silicone Coated FEP
178-8561	0.050" Etched FEP NOMEM™
178-8562	0.060" Silicone Coated FEP NOMEM™

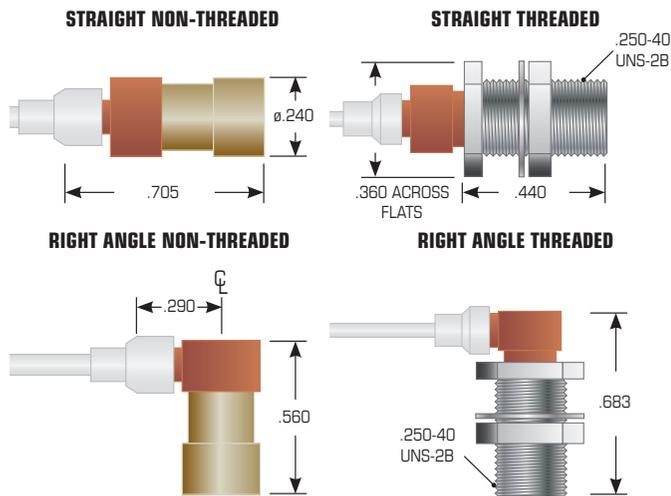
Mates with all Pee-Wee series non-threaded plug cable assemblies.

PEE-WEE SERIES

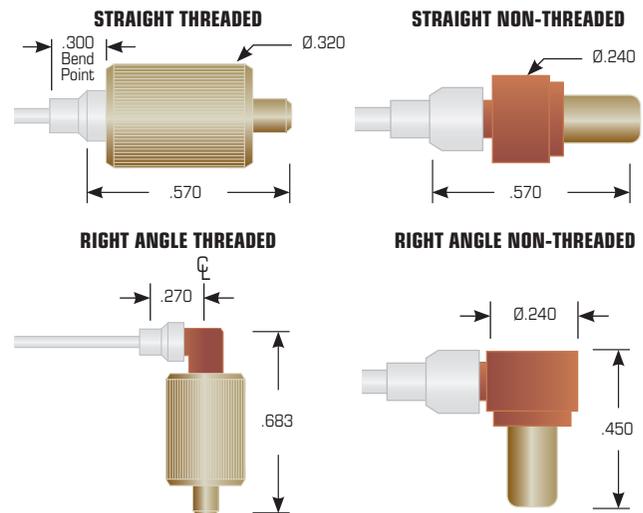
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SINGLE PIN RECEPTACLES



SINGLE PIN PLUGS



OTHER ADVANCED SERIES CONNECTORS

JR Series - 6 kVDC

A smaller version of the Pee-Wee series of high voltage connectors and cable assemblies. Although micro-miniature in size, this series of multi-pin connectors and cable assemblies will operate at voltages up to 6 kVDC at 70,000 feet altitude over a temperature range of -55 to +125° C.

Magnum Series* - 12 kVDC

Magnum is a series of multi-pin high voltage connectors and cable assemblies. These connectors provide a large number of design solutions because they are built-up of completely assembled individual high voltage contacts that are pre-tested as contrasted to a one piece, encapsulated, molded-in-place cable assembly. The Magnum series features stainless steel shells, a unique bayonet coupling and a range of receptacles that includes a hermetic ceramic version.

Magnum Plus Series* - 14 kVDC

This series is the same as the Magnum series with the exception that 3 of the 6 pins have slightly larger seals which enables them to be rated at 14 kVDC.

Century Series - 15 kVDC

This series of single pin connectors and shielded cable assemblies is slightly larger than the Pee-Wee series, has a higher voltage rating and is more rugged. The receptacles are available in both plastic and high alumina ceramic versions.

Century Plus Series - 18 kVDC

A slightly larger version of the Century series with a higher voltage rating.

Maxxum Series - 25 kVDC

These connectors and cable assemblies have the second highest voltage rating of any of the Advanced group of connectors. They are mainly used on ECM and Radar systems to connect the collector element of high power TWT's to a high voltage power supply. Ceramic receptacles are available for applications requiring a hermetic seal.

Max Series - 30 kVDC

A series of anode lead assemblies and receptacles designed specifically to interconnect cathode ray tube anodes to high voltage power supplies in airborne avionics suites of both military and commercial aircraft.

MIL-C-38999 Hi/Mate - 13.5 kVDC

Expands the capability of MIL-C-38999 Series I, III & IV connectors, by adapting them to carry DC voltages of up to 13.5 kVDC for airborne applications ranging to 70,000 feet altitude over a temperature range of -55°C to 125°C.

Sub-D Hi/Mate_D - 13.5 kVDC

Hi/Mate_D high voltage lead assemblies are rated at 13.5 kVDC and can be fitted into a Sub-D No. 8 gauge insert cavity. The assemblies are ideal for airborne applications up to 70,000 feet altitude over a temperature range of -55°C to 125°C. Hi/Mate_D is fully compatible with fiber optic and signal lines in the same Sub-D connector.

*The Magnum and the Magnum Plus Series are subject to the export jurisdiction of the U.S. Department of State and may require export license or other approval from the U.S. Department of State.

To learn more about the Advanced Series of connectors and other Teledyne Reynolds product offerings please visit www.teledynereynolds.co.uk



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