

Amphenol® Transient Protection Diode Connectors

Transient Protection - Diode Connectors

- Clamping voltage as low as 11.9 volts
- Low capacitance – suitable for high frequency applications
- Unipolar or bipolar – using existing proven diode technology
- Protection for 5.8 to 200 VDC circuits
- No additional circuits required
- Low impedance – high frequency response
- Increased reliability
- Nanosecond response time
- Elimination of costly external suppression assemblies
- Screened to applicable requirements of MIL-S-19500TX/ TXV
- Available as repairable or fixed diode design
- Keeps transients outside of the box
- Minimizes fast transient voltage overshoot

The Amphenol® [Diode Connector](#) offers the versatility of a standard connector, with transient protection for sensitive circuits, such as TTL Lines.

Transients in electrical circuits caused by a sudden release of stored energy can originate within or outside of the circuit and may be repeatable or random.

Regardless of frequency or origin, transient caused failures generated by load switching, lightning, electrostatic discharge (ESD) and electromagnetic pulse (EMP) can destroy unprotected IC components.

Compatible with present filter connector assembly procedures, diodes can stand alone or can be combined in series with filters. Internal housing of the diode offers weight and space savings over other protection methods available today, and eliminates costly and bulky exterior suppression mechanisms in appropriate situations. Diodes are presently available in contact sizes 22, 20 and 16.

Transient protection can be provided in receptacle, plug or adapter configurations. These connectors are intermateable and intermountable with the following MIL-Specs:

- MIL-C-5015
- MIL-C-26482
- MIL-C-26500
- MIL-C-27599
- MIL-C-38999
- MIL-C-83723
- MIL-C-24308
- MIL-C-28840

Low capacitance diodes <100 pfd are available; consult Amphenol, Sidney, NY.

Publication SL-360 offers in-depth information concerning front repairability of diode connectors.



Diode Connector and Adapter



Close-up View of Diode Contact

STANDARD DIODE CONNECTOR CHARACTERISTICS AT 25 °C

Stand-off Voltage † (VDC)	Max. Capacitance (pf)	Breakdown Voltage at 1 ma (VDC)	Max. Clamping Voltage (8 x 20μ sec. pulse)	Leakage Current at Stand-off Voltage (μA)	Power Capability † 20μs Exp. Impulse (Peak) (Watts)
+ 5.8	1600	+ 6.45 to + 7.1*	+11.9	<100	1000
± 5.8	1000	± 6.45 to ± 7.1*	±11.9	<150	1000
± 7.0	750	± 7.3 to ± 9.3	±13.5	<10	1000
± 8.0	750	± 8.2 to ±10.6	±15.4	<5	1000
+ 8.0	1500	+ 8.5 to +10.6	+15.4	<5	1000
±10.0	500	±11.1 to ±12.3	±17.0	<1	1000
+10.0	1100	+11.1 to +12.3	+17.0	<1	1000
±15.0	500	±16.7 to ±18.5	±24.9	<1	1000
+15.0	750	+16.2 to +19.2	+24.9	<1	1000
-15.0	750	-16.2 to -19.2	-24.9	<1	1000
±17.0	500	±18.9 to ±23.0	±32.0	<1	1000
+17.1	600	+19.0 to +21.0	+27.7	<1	1000
±22.0	500	±25.7 to ±28.4	±38.0	<1	1000
±25.0	500	±27.8 to ±30.7	±40.5	<1	1000
+28.0	500	+30.5 to +35.7	+46.4	<1	1000
±33.3	500	+37.1 to +41.0	±53.9	<1	1000
+33.3	500	+37.1 to +41.0	+53.9	<1	1000
±40.0	500	±44.4 to ±49.1	±64.5	<1	1000
±45.0	500	±47.1 to ±58.1	±84.2	<1	1000
+57.8	500	+64.6 to +71.4	+95.2	<1	1000
±57.8	500	±64.6 to ±71.4	±95.2	<1	1000

Clamping Time -

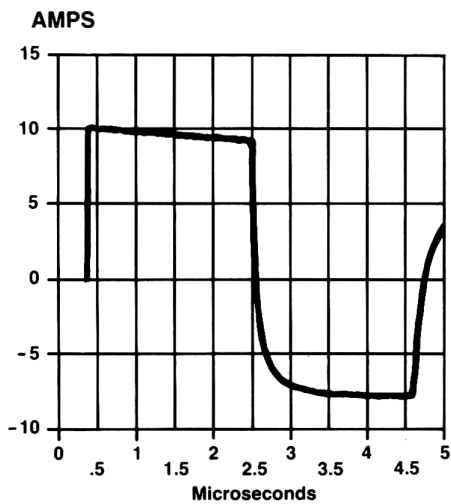
Unipolar: Less than 1 nanosecond, 0V to breakdown

Bipolar: Less than 5 nanoseconds, 0V to breakdown

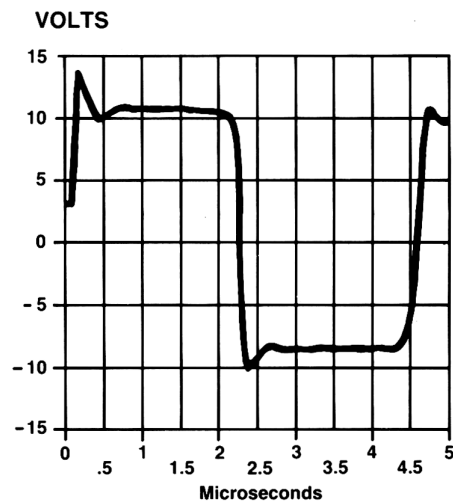
* This device only measured at 10ma

† Higher power ratings also available

DIODE CONTACT PULSE TEST, ± 5.8 DIODE



**INPUT CURRENT ±10A
TO CONTACT**



**OUTPUT VOLTAGE +14V
TO -10V AFTER DIODE**