

# BIASED COAXIAL SCHOTTKY DETECTORS

The ACSP series of high sensitivity detectors exhibit superior electrical and environmental reliability characteristics. They contain hermetically sealed modules, internal RF matching, DC return, and RF bypass capacitor. In addition, the video port is protected from static or transient voltages. This feature prevents damage due to handling (usually static) or system video transients. Models may be chosen for broadband RF performance or for optimized narrow bands.



#### Each detector model contains:

- Input Impedance Matching
- DC return
- RF bypass capacitor
- Detector diode

#### Applications:

- Transmitter Monitoring
- Radar Equipment
- Missile Guidance Systems
- Input to Low-Noise Amplifiers
- Broadband Or Narrowband ECM Receivers
- Power and Signal Monitors
- Doppler Radar and Beacon Receivers
- Matched units available for Multi-channel Receivers, Amplitude Comparator Systems and Discriminators

Frequency Range (GHz)	Part (1) Number	Minimum(2) Sensitivity K (mV/mW)	Flatness vs Frequency (+/-dB)	Typical (2) TSS (dBm)	Nominal (4) Video Capacitance (pF)	Standard Case Styles	Optional Case Styles
0.1 - 1	ACSP2517N	2000	0.28	-52	270	C3	C8,C15
0.1 - 2	ACSP2538N	2000	0.3	-52	270	C3	C8,C15
0.5 - 2	ACSP2501N	2000	0.3	-53	75	C3	C8,C15
1 - 4	ACSP2630N	2000	0.3	-53	39	C3	C8,C15
2 - 4	ACSP2502N	2000	0.2	-53	20	C3	C8,C15
2 - 6	ACSP2546N	2000	0.3	-53	12	C3	C8,C15
1 - 6	ACSP2656N	2000	0.5	-53	12	C3	C8,C15
4 - 8	ACSP2503N	2000	0.3	-53	12	C3	C8,C15
0.5 - 12	ACSP2658N	2000	1.3	-52	75	C3	C8,C15
1 - 12	ACSP2762N	2000	1.5	-51	20	C3	C8,C15
2 - 12	ACSP2507N	2000	1.1	-53	12	C3	C8,C15
8 - 12	ACSP2504N	2100	0.4	-53	12	C3	C8,C15,C32
0.5 - 18	ACSP2572N	1800	1.5	-52	12	C3	C15,C32
1 - 18	ACSP2759N	1500	1.25	-50	20	C3	C15,C32
2 - 18	ACSP2506N	1800	1.5	-51	12	C3	C15,C32
6 - 18	ACSP2523N	1800	1.0	-51	12	C3	C15,C32
12 - 18	ACSP2505N	2000	0.6	-52	12	C3	C15,C32

#### NOTES:

- 1) Standard output polarity is negative. If positive output is required, substitute "P" for "N" in part number.
- 2) Measured into an open circuit load (>10k ohm).
- 3) VSWR measured at or below -20dBm input power level.
- 4) Video capacitance is used for RF bypass. This value can be changed if required for video response time or other considerations. Contact the factory if value other than those shown are needed.
- 5) Standard bias is 100 microamps.
- 6) Zero bias schottky versions are available for most of listed biased schottky models with only minor differences in specifications.
  - a. The zero bias schottky has an impedance of several thousand ohms.
  - b. Zero bias schottky detectors exhibit less sensitive TSS due to the high diode impedance (typically a 3dB reduction).
  - c. The temperature performance of the zero bias schottky is poor when operating at low input power levels. This difference becomes small at high levels (above 0dBm input power). The part number of zero bias versions includes a "Z" following the polarity indicator.

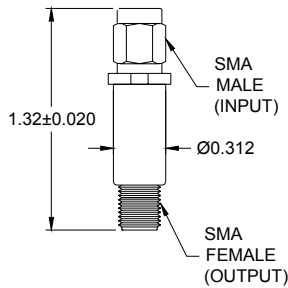


**ENVIRONMENTAL SPECIFICATIONS:**

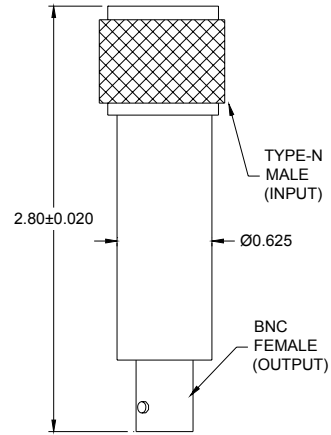
MIL-E-5400, MIL-STD-202, MIL-E-16400  
 Operating Temp: -65°C to +125°C  
 Storage Temp: -65°C to +150°C  
 Humidity: MIL-STD-202F, M103, Cond B  
 Shock: MIL-STD-202F, M213, Cond B  
 Altitude: MIL-STD-202F, M105, Cond B  
 Vibration : MIL-STD-202F, M204, Cond B  
 Thermal Shock: MIL-STD-202F, M107, Cond A  
 Temperature Cycle: MIL-STD-202F, M105C, Cond D  
 Maximum Input Power: +20dBm

**SCREENING :**

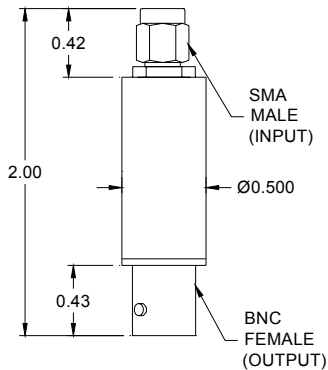
Standard Screening:  
 Internal Visual per MIL-STD-883, Method 2017  
 Temperature Cycle: -65°C to +100°C, 10 cycles  
Optional High-Rel Screening (Ref MIL-PRF-38534):  
 Internal Visual per MIL-STD-883, Method 2017  
 Stabilization Bake per MIL-STD-883, Method 1008  
 Temperature Cycle per MIL-STD-883, Method 1010  
 Constant Acceleration per MIL-STD-883, Method 2001  
 Burn-in per MIL-STD-883, Method 1015  
 Leak Test per MIL-STD-883, Method 1014  
 External Visual per MIL-STD-883, Method 2009



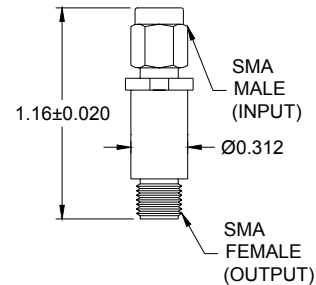
CASE STYLE C3



CASE STYLE C8



CASE STYLE C15



CASE STYLE C32

**Part Number Ordering Information:**

Example: ACSP2503Nzc3X20  
 ACSP2503: Biased Coaxial Schottky Detector, 4 - 8GHz  
 N: Negative output polarity  
 Z: Zero bias version (omit for biased version)  
 C3: Package type  
 X: No video protection (omit for inclusion of video protection)  
 20: 20pF custom output capacitance (omit for standard value)