

Detectors

Bias Coaxial Schottky, Padded Zero Bias Schottky, Bolt Channel Schottky Detector Module, and Schottky Diode Module, Maximally Flat Schottky Detector

Data Sheet Revision Date: 10/26/17

COBHAM

The most important thing we build is trust

Bias Coaxial Schottky and Bias Coaxial Schottky with Internal Pad

Description

High sensitivity and superior electrical and environmental reliability characterize these module detectors. They are hermetically sealed and contain internal RF matching, DC return, and RF bypass capacitor. In addition, the video port can be 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. They may be used in microstrip or stripline applications for power monitoring, broadband ECM receivers, radar equipment, beacon or multi-channel receivers. Padded input detectors allow for higher input power read and better VSWR than pure biased Schottky units.



Features

- Static Protection
- High Sensitivity
- Small Size

Frequency Range	Part No.	Min. Sensitivity K (mV/mW)	Flatness vs Frequency (+/-db)	Typical (2) TSS (dBm)	Nominal Video Capacitance (pF)	Standard Case Style	Optional Case Styles
0.1 - 1.0	ACSP-2517N	2,000	0.28	-52	270	C3	C8, C15, C32
1.0 - 4.0	ACSP-2630N	2,000	0.3	-53	39	C3	C8, C15, C32
4.0 - 8.0	ACSP-2503N	2,000	0.3	-53	12	C3	C8, C15, C32
8.0 - 12.0	ACSP-2504N	2,100	0.4	-53	12	C3	C8, C15, C32
0.5 - 18.0	ACSP-2572N	1,800	1.5	-52	12	C3	C15, C32
1.0 - 18.0	ACSP-2759N	1,500	1.25	-50	20	C3	C15, C32
12.0 - 18.0	ACSP-2505N	2,000	0.6	-52	12	C3	C15, C32
Frequency Range	Part No.	Min. Sensitivity K (mV/mW)	Flatness vs Frequency (+/-db)	Typical VSWR	Nominal Video Capacitance (pF)	Standard Case Styles	Optional Case Styles
0.01 - 20.0	ACSP-2644N	500	1.0	1.8:1	12	C3	C15, C32

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Bolt Channel Schottky, Schottky Diode Module, Maximally Flat Schottky

Description

Bolt Channel Schottky Detectors offer static protection and easy mounting, as well as excellent octave or broadband RF performance and rugged construction for harsh environments. Schottky Diode Modules offer high sensitivity and superior electrical and environmental reliability. They are hermetically sealed and contain internal RF matching, DC return, and RF bypass capacitor. Bolt Channel and Schottky Diode Modules are Microstrip or stripline compatible and static protection virtually eliminates damage due to handling or from video transients. Maximally Flat Schottky Diode Detectors have exceptional temperature stability and are designed for optimum output voltage flatness vs. input frequency. Excellent flatness performance is maintained up through +15dBm input power.



Bolt Channel Schottky Detector & Schottky Diode Module Features

- Static Protection
- High Sensitivity
- Small Size

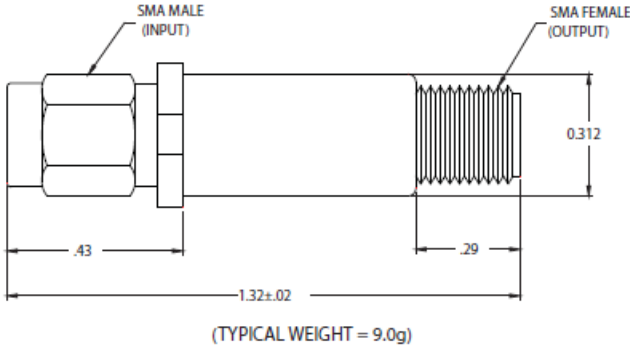
Maximally Flat Schottky Diode Detector Features

- Low Video Resistance (110Ω typical)
- Broadband Performance
- No Bias Required

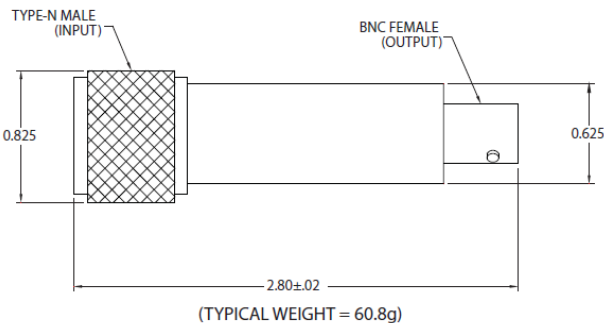
Frequency Range (GHz)	Part No.	Min. Sensitivity K (mV/mW)	Flatness vs Frequency (+/-db)	Typical VSWR	Nominal Video Capacitance (pF)	Standard Case Styles	Optional Case Styles	Description
2.0 - 6.0	ACSM-2030P	2,000	0.3	-53	12	M51	-	Bolt Channel Schottky
2.0 - 12.0	ACSM-2032P	2,000	1.0	-52	12	M51	-	Bolt Channel Schottky
2.0 - 18.0	ACSM-2031P	1,700	1.3	-51	12	M51	-	Bolt Channel Schottky
12.0 - 18.0	ACSM-2034P	1,800	0.75	-51	12	M51	-	Bolt Channel Schottky
0.1 - 1.0	ACSM-2035N	2,000	0.25	-52	270	M12*	M17, M47	Schottky Diode Module
0.5 - 2.0	ACSM-2001N	2,000	0.4	-53	75	M12*	M17, M47	Schottky Diode Module
0.5 - 4.0	ACSM-2108N	2,000	0.4	-53	20	M12*	M17, M43, M51	Schottky Diode Module
2.0 - 4.0	ACSM-2002N	2,000	0.4	-53	20	M12*	M17, M51	Schottky Diode Module
4.0 - 8.0	ACMS-2003N	2,000	0.4	-53	20	M12*	M17, M51	Schottky Diode Module
1.0 - 18.0	ACSM-2047N	1,800	1.0	-51	20	M12*	M17	Schottky Diode Module
2.0 - 18.0	ACSM-2006N	1,800	1.0	-51	12	M12*	M17	Schottky Diode Module
8.0 - 18.0	ACSM-2015N	1,800	0.7	-52	12	M12*	M17	Schottky Diode Module
ACSP-2154 (1-18 GHz) Maximally Flat Schottky Detector								
Nominal Output Voltage		Flatness vs. Frequency (+/- dB)		VSWR	Maximum RF Input Power (dBm)	Standard Case Styles	Optional Case Styles	
12mV @ -20dBm		0.5dB @ -20dBm		2:1 @ -20dBm	+20	M22	C36, C37	
100mV @ -10dBm		0.7dB @ -10dBm		3:1 @ -10dBm				
500 mV @ 0dBm		0.7dB @ 0dBm		4.5:1 @ 0dBm				
1V @ +5dBm		1.0dB @ +5dBm						

Case Styles

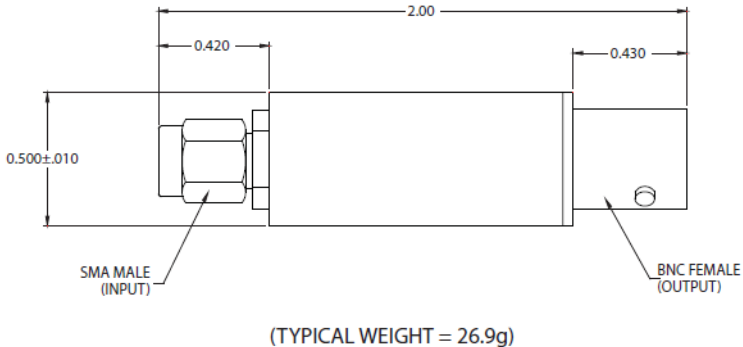
Outline Case Style C3



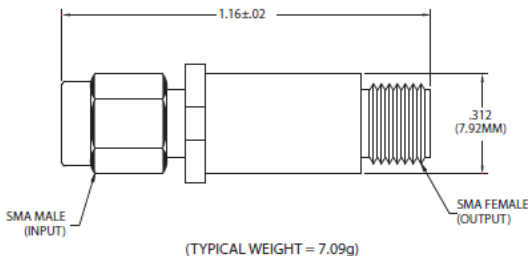
Outline Case Style C8



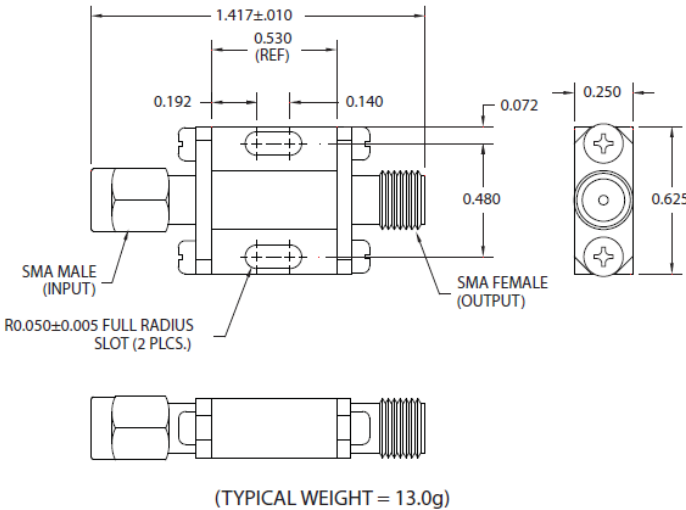
Outline Case Style C15



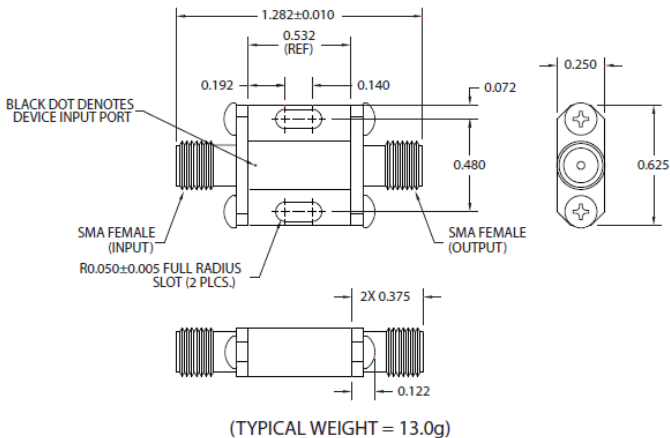
Outline Case Style C32



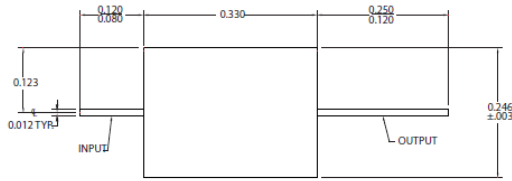
Outline Case Style C36



Outline Case Style C37

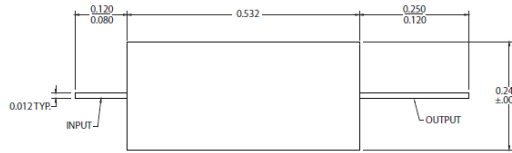


Outline Case Style M12



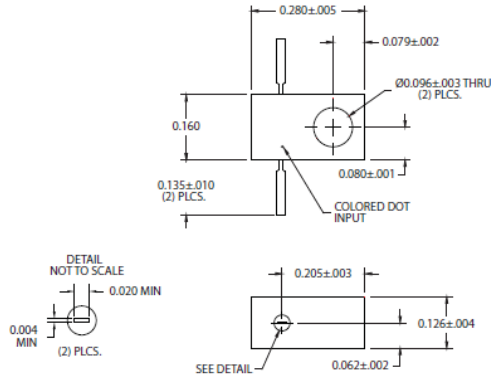
(TYPICAL WEIGHT = 1.0g)

Outline Case Style M22



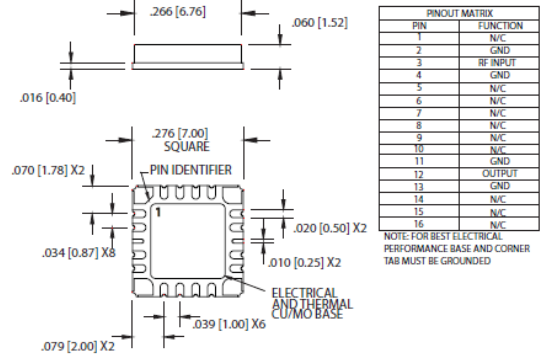
(TYPICAL WEIGHT = 1.55g)

Outline Case Style M51



(TYPICAL WEIGHT = 0.54g)

Outline Case Style M17

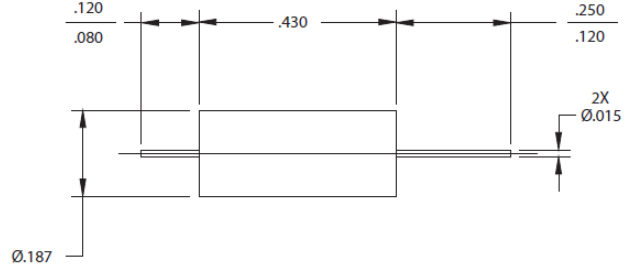


PINOUT MATRIX	
PIN	FUNCTION
1	N/C
2	GND
3	RF INPUT
4	GND
5	N/C
6	N/C
7	N/C
8	N/C
9	N/C
10	N/C
11	GND
12	OUTPUT
13	GND
14	N/C
15	N/C
16	N/C

NOTE: FOR BEST ELECTRICAL PERFORMANCE BASE AND CORNER TAB MUST BE GROUNDED

ATTENTION: THIS IS A TOP VIEW (AS MOUNTED) (TYPICAL WEIGHT = 0.27g)

Outline Case Style M43



(TYPICAL WEIGHT = 1.09g)

Part Number Ordering Information

Example: ACSM-2015NZM51X20

ACSM-2015: Schottky Module Detector, 8 -18GHz

N: Negative output polarity

- or -

P: Positive output polarity

Z: Zero bias version (Omit for biased version)

X: No video protection

- or -

V: Add video protection

20: 20 pF custom output capacitance (Omit for standard value)

Notes:

- Standard output polarity is negative. If positive output is required, substitute "P" for "N" in part number.
- Measured into an open circuit load (>10k ohm).
- VSWR measured at or below -20dBm input power level
- 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 is needed.
- Standard bias is 100 microamps.
- Zero bias schottky versions are available for most of the listed bias Schottky models with only minor differences in specifications.
 - The zero bias schottky has an impedance of several thousand ohms.
 - Zero bias schottky detectors exhibit less sensitive TSS due to the high diode impedance (typically 3dB reduction). 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 0 dBm input power). The part number of zero bias versions includes a "z" following the polarity indicator.