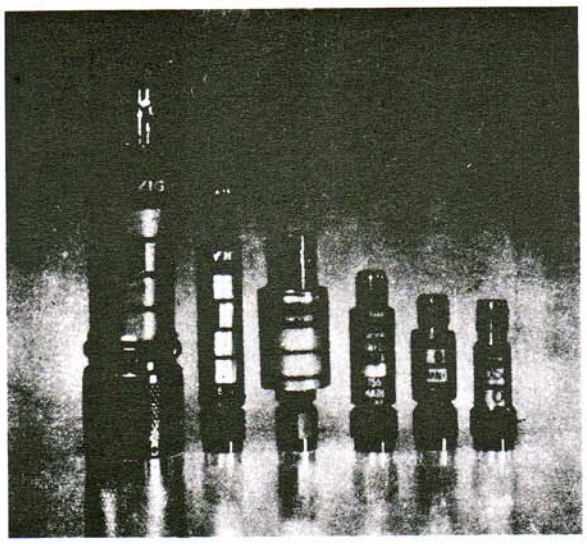
OMNIYIG INC.

ZERO BIAS SCHOTTKY DETECTORS



APPLICATIONS

- ☐ ECM Receivers
- ☐ Power Monitors
- ☐ Radar

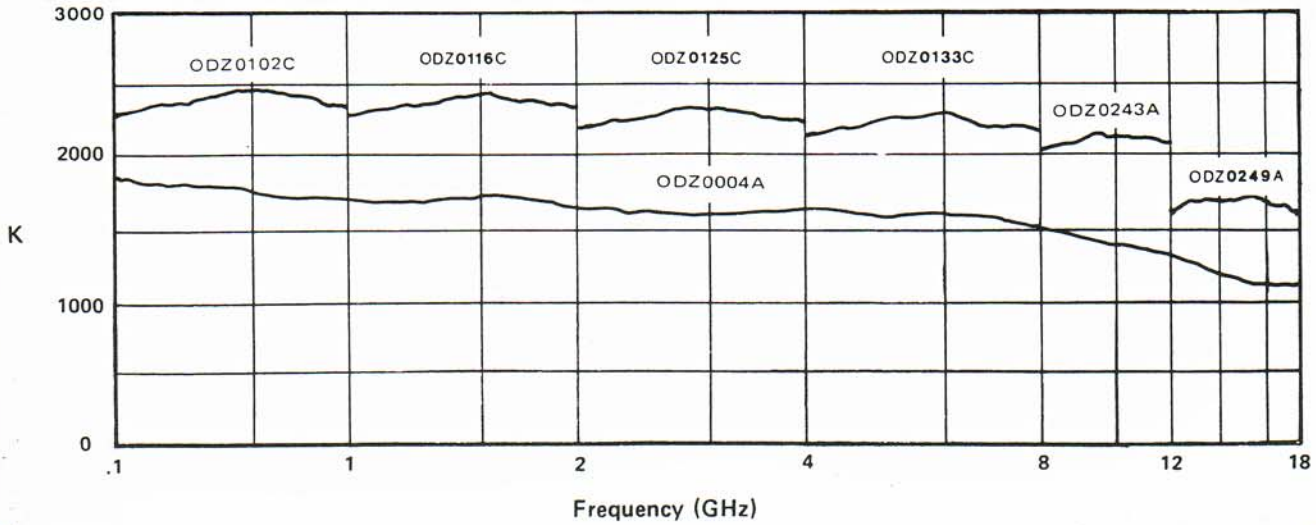
FEATURES

- ☐ High Sensitivity
- ☐ Low Cost
- ☐ Flat Response
- ☐ Compact Size
- ☐ Positive or Negative Polarity
- ☐ Diode Replaceable
- ☐ Fair Temperature Stability

DESCRIPTION

The Omniyig Schottky detectors are designed for octave or broad band performance. The Schottky detectors are available in many models from 0.1 to 26 GHz. These components utilize diodes in metal-ceramic or glass packages. The units display ±3.0 dB sensitivity stabilization of these Schottky over 0°C to 50°C temperature range. They include internal d.c. return and bypass capacitors. The dynamic range of these detectors covers at least 70 dB from T_{SS} to +20 dBm. The square law range is from T_{SS} to between -18 dBm and -14 dBm where 1 dB compression occurs depending upon bias level and video load. Transition to linear occurs at approximately 0 dBm. The safe power handling capability of these Zero Bias Schottky detectors is +20 dBm.

TYPICAL PERFORMANCE CURVES



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SPECIFICATIONS

	OMNIYIG MODEL NUMBER	FREQUENCY RANGE (GHz)	TYPICAL[2] TSS (dBm)	K-FACTOR[1] MINIMUM (mv/mw)	RF BYPASS[3] CAPACITOR (pf)	FLATNESS (±dB)	VIDEO CONNECTOR (female)
BROAD BAND UNITS	ODZ0004A	0.1–18	–51	1000	15	1.5	SMA
	ODZ0102C	0.1–1.0	–54	2000	500	0.5	BNC
	ODZ0502A	0.1–1.0	–54	2000	500	0.5	SMA
	ODZ0109C	0.5–2.0	–53	2000	100	0.5	BNC
	ODZ0509A	0.5–2.0	–53	2000	100	0.5	SMA
	ODZ0110C	0.5–4.0	–53	1750	100	0.5	BNC
	ODZ0510A	0.5–4.0	–53	1750	100	0.5	SMA
	ODZ0117C	1.0–4.0	–53	1750	50	0.5	BNC
	ODZ0517A	1.0–4.0	–53	1750	50	0.5	SMA
	ODZ0118C	1.0–12	–52	1250	50	1.0	BNC
	ODZ0518A	1.0–12	–52	1250	50	1.0	SMA
	ODZ0126C	2.0–8.0	–52	1500	50	0.7	BNC
	ODZ0526A	2.0–8.0	–52	1500	50	0.7	SMA
	ODZ0127C	2.0–12	–52	1250	50	1.0	BNC
	ODZ0527A	2.0–12	–52	1250	50	1.0	SMA
	ODZ0328A	2.0–18	–51	1000	30	1.2	SMA
	ODZ0428C	2.0–18	–51	1000	30	1.2	BNC
	ODZ0134C	4.0–12	–51	1250	30	0.7	BNC
	ODZ0234A	4.0–12	–52	1250	30	0.7	SMA
	ODZ0434C	4.0–12	–52	1250	30	0.7	BNC
	ODZ0235A	4.0–18	–51	1000	30	1.0	SMA
	ODZ0435C	4.0–18	–51	1000	30	1.0	BNC
	ODZ0240A	6.0–18	–51	1000	30	0.7	SMA
	ODZ0440C	6.0–18	–51	1000	30	0.7	BNC
OCTAVE BAND UNITS	ODZ0101C	0.1–0.5	–54	2000	500	0.3	BNC
	ODZ0501A	0.1–0.5	–54	2000	500	0.3	SMA
	ODZ0108C	0.5–1.0	–54	2000	100	0.3	BNC
	ODZ0508A	0.5–1.0	–54	2000	100	0.3	SMA
	ODZ0116C	1.0–2.0	–53	2000	50	0.3	BNC
	ODZ0516A	1.0–2.0	–53	2000	50	0.3	SMA
	ODZ0125C	2.0–4.0	–53	2000	50	0.4	BNC
	ODZ0425A	2.0–4.0	–53	2000	50	0.4	SMA
	ODZ0131C	2.5–5.0	–53	2000	50	0.4	BNC
	ODZ0531A	2.5–5.0	–53	2000	50	0.4	SMA
	ODZ0133C	4.0–8.0	–53	2000	30	0.5	BNC
	ODZ0233A	4.0–8.0	–53	2000	30	0.5	SMA
	ODZ0533A	4.0–8.0	–53	2000	30	0.5	SMA
	ODZ0137C	5.0–10	–52	2000	30	0.5	BNC
	ODZ0237C	5.0–10	–52	2000	30	0.5	SMA
	ODZ0537A	5.0–10	–52	2000	30	0.5	SMA
	ODZ0139C	6.0–12	–52	2000	30	0.6	BNC
	ODZ0239A	6.0–12	–52	2000	30	0.6	SMA
	ODZ0141C	7.0–11	–52	2000	30	0.5	BNC
	ODZ0241A	7.0–11	–52	2000	30	0.5	SMA
	ODZ0143C	8.0–12	–52	2000	30	0.5	BNC
	ODZ0243A	8.0–12	–52	2000	30	0.5	SMA
	ODZ0244A	8.0–16	–52	1500	20	0.7	SMA
	ODZ0245A	8.0–18	–51	1250	20	0.7	SMA
	ODZ0248A	11–18	–51	1500	20	0.6	SMA
	ODZ0249A	12–18	–51	1250	20	0.7	SMA
	ODZ0251A	18–26	–47	750	15	1.0	SMA
SPECIAL UNITS	ODZ0115C	0.7–1.4	–54	3000	100	0.3	BNC
	ODZ0515A	0.7–1.4	–54	3000	100	0.3	SMA
	ODZ0123C	1.7–2.4	–54	3000	50	0.15	BNC
	ODZ0523A	1.7–2.4	–54	3000	50	0.15	SMA
	ODZ0129C	2.2–2.3	–54	3000	50	0.15	BNC
	ODZ0529A	2.2–2.3	–54	3000	50	0.15	SMA
	ODZ0132C	3.7–4.2	–53	3000	50	0.15	BNC
	ODZ0532A	3.7–4.2	–58	3000	50	0.15	SMA
	ODZ0138C	5.4–5.9	–53	3000	30	0.15	BNC
	ODZ0538A	5.4–5.9	–53	3000	30	0.15	SMA
	ODZ0142C	7.5–8.5	–53	2500	30	0.2	BNC
	ODZ0242A	7.5–8.5	–53	2500	30	0.2	SMA
	ODZ0146C	8.5–9.6	–53	2500	30	0.2	BNC
	ODZ0146A	8.5–9.6	–53	2500	30	0.2	SMA

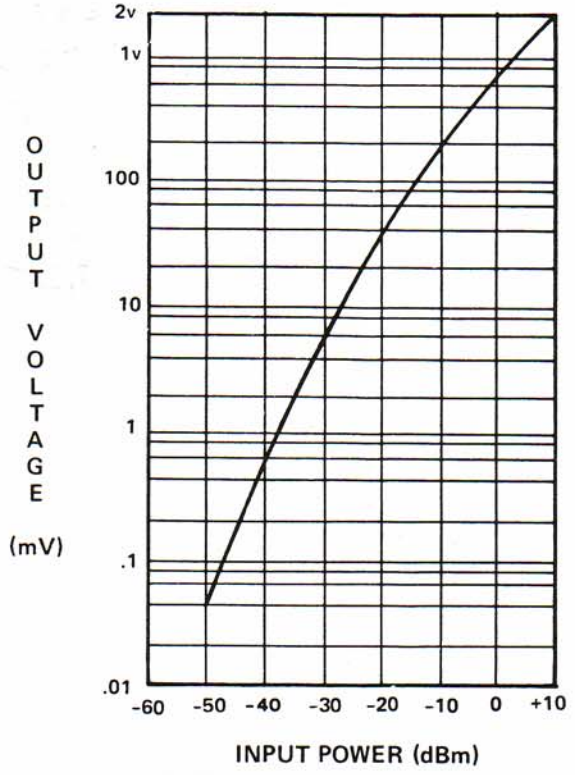
TECHNICAL NOTES

1. "K" is the small signal open circuit voltage sensitivity. V_{out}/P_{in}. Measurements are taken at -20 dBm RF incident power.
2. BW=2 MHz.
3. Capacitor valves listed are typical. Smaller valves available for improved video bandwidth.
4. Video connectors have standard options at no extra charge as follows:
   A. BNC female may be replaced with TNC female, SMA female, SMB male, SMC male, or solder pin.
   B. SMA female may be replaced with SMB male, SMC male or solder pin.
   C. Video connector designations are:

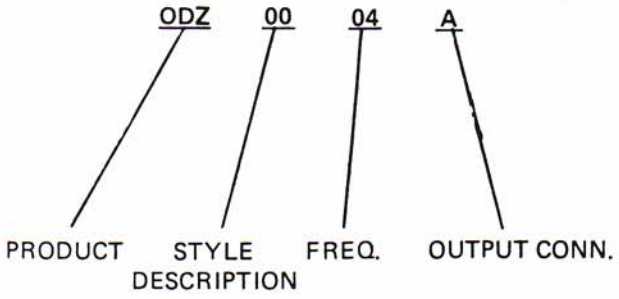
SMA female – A	SMB male – F
BNC female – C	SMC male – E
TNC female – G	Solder Pin – J

   D. Outline styles 00 and 03 have no video connector options; SMA female only!
5. Normal video polarity is negative. Add the letter "R" to the model for positive polarity. (No additional charge.)
6. Detectors can be matched within ±0.25 dB over octave bandwidths and ±0.4 dB over wider bandwidths. Add the letter "P" to the end of the model number for matched pairs. Add 10% to price for matching in pairs.
7. Warranty applies to mount only, not the diode element. This element may be replaced at the factory for a nominal charge of $45.00.

PERFORMANCE CURVES



MODEL NUMBER SYSTEM

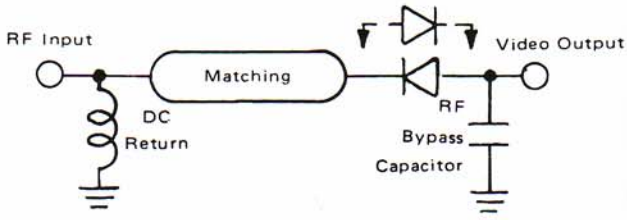


ENVIRONMENTAL

	MIL-STD-883	CONDITION
Temperature Range		
Storage	1008C	-65°C to +150°C
Operating (see derating curve)	1008C	-65°C to +125°C
Temperature Cycling	1010C	5 cycles, -65°C to +125°C
Thermal Shock	1011A	5 cycles, 0 to +100°C
Moisture Resistance	1004	10 days, 90 to 98% R H
Shock (Mechanical)	2002A	5 blows, X Y Z @ 50 G's
Vibration Variable Frequency	2007A	4, 4-min. cycles x y z @ 20 G's peak, 100 to 2,000 Hz
Constant Acceleration	2001A	X_1 Y_1 Y_2 500 G's

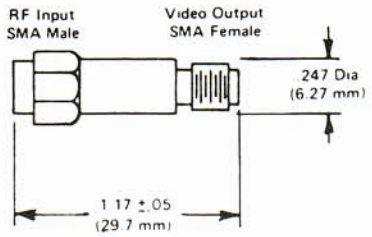
CIRCUIT

These Omniyig detector mounts include all circuit elements necessary for operation. These elements are DC return, matching network, diode and RF bypass capacitor.

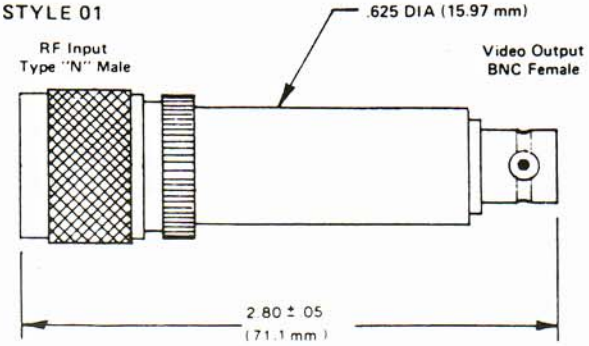


OUTLINES

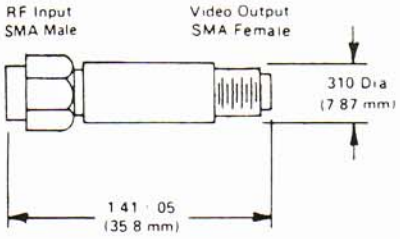
STYLE 00



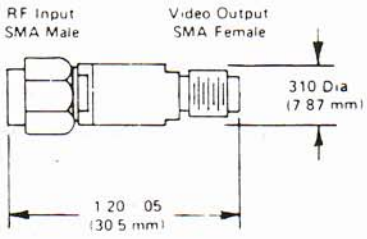
STYLE 01



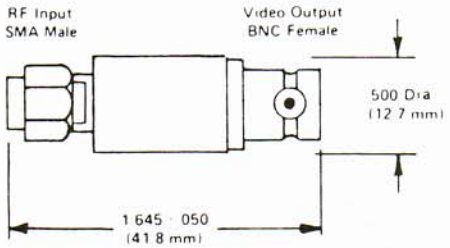
STYLE 02



STYLE 03



STYLE 04



STYLE 05