

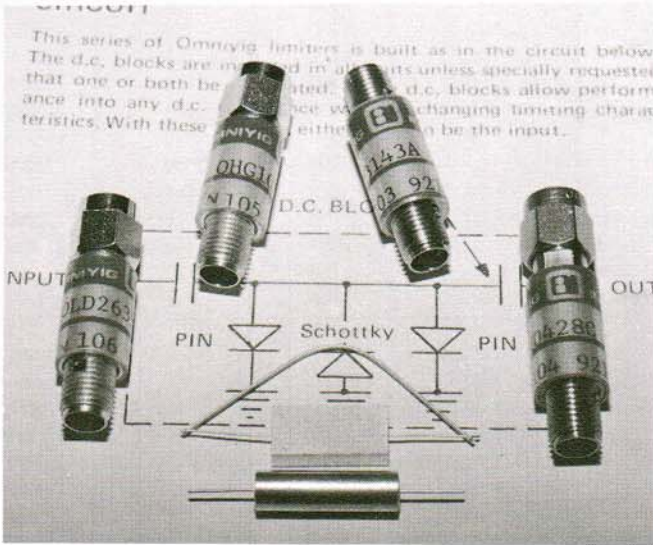
TUNNEL DETECTORS

APPLICATIONS

ECM Receivers
Power Monitors
Radar

FEATURES

No Bias Required
Low Cost
Flat Response
Compact Size
Positive or Negative Polarity
Diode Replaceable
Excellent Temperature Stability

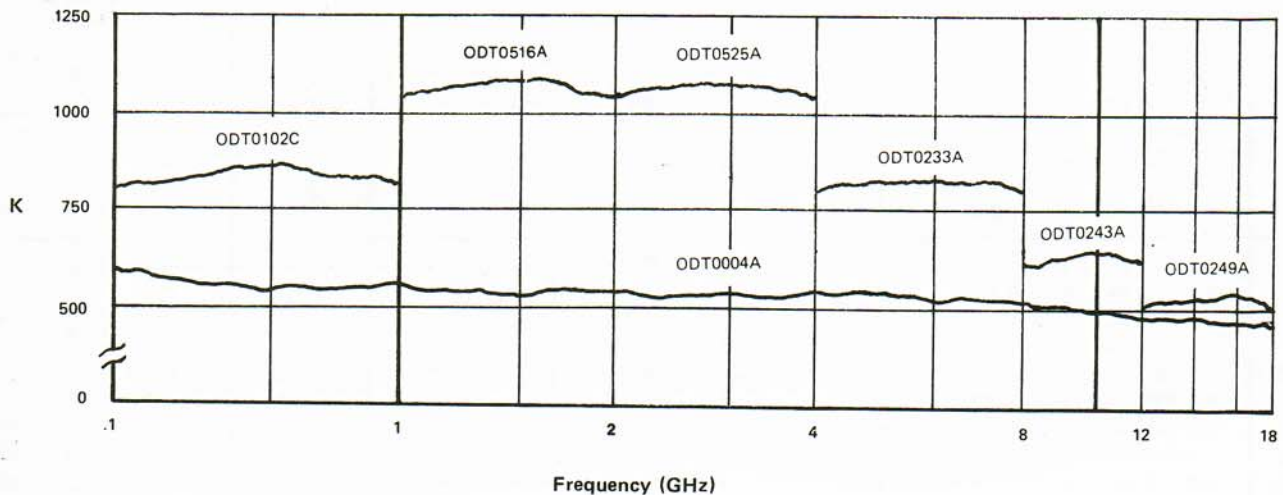


DESCRIPTION

The Omnyig Tunnel detectors are designed for octave or broad band performance. The Tunnel detectors are available in many models from 0.1 to 26 GHz. These components utilize diodes in metal-ceramic packages. The units display ± 0.5 dB sensitivity stability over MIL type temperature ranges. They include internal d.c. return and bypass capacitors. The dynamic range of these detectors covers at least 55 dB from T_{SS} to +5 dBm. The square law range is from T_{SS} to between -18 dBm and -15 dBm where 1 dB compression occurs depending upon diode selective video load. Transition to linear occurs at approximately 0 dBm. The safe power handling capability of these tunnel detectors is +17 dBm.

ENVIRONMENTAL

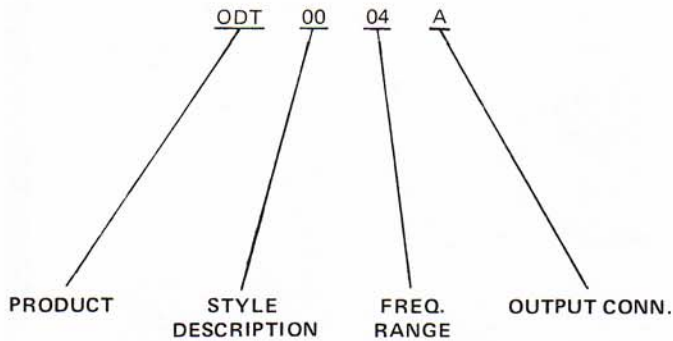
	MIL-STD-883	CONDITION
Temperature Range		
Storage	1008C	-65°C to +150°C
Operating	1008C	-65°C to +125°C
Temperature Cycling	1010C	5 cycles, 65°C to +125°C
Thermal Shock	1011A	5 cycles, 0 to +100°C
Moisture Resistance	1004	10 days, 90 to 98% RH
Shock (Mechanical)	2002A	5 blows, X Y Z @ 50 Gs
Vibration Variable		
Frequency	2007A	4, 4 min. cycles x y z @ 20 GS peak, 100 to 2000 Hz
Constant Acceleration	2001A	X ₁ Y ₁ Z ₂ 500 Gs



MODEL NUMBERS

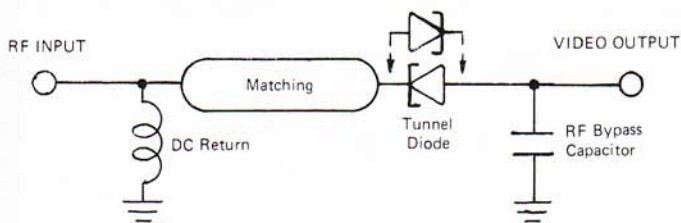
	Omniyig Model Number	Frequency Range (GHz)	Typical ² TSS (dBm)	K-Factor ¹ Minimum (mv/mw)	RF Bypass ³ Capacitor (pf)	VSWR ⁴ Typical (-:1)	Typical Flatness (±dB)	Video ⁵ Connector (Female)
B R O A D B A N D U N I T S	ODT0004A	0.1-18	-47	400	500	4.0	1.5	SMA
	ODT0102C	0.1-1.0	-50	750	500	3.0	0.4	BNC
	ODT0502A	0.1-1.0	-50	750	500	3.0	0.4	SMA
	ODT0109C	0.5-2.0	-50	800	100	3.0	0.4	BNC
	ODT0509A	0.5-2.0	-50	800	100	3.0	0.4	SMA
	ODT0110C	0.5-4.0	-50	300	100	3.0	0.5	BNC
	ODT0510A	0.5-4.0	-50	800	100	3.0	0.5	SMA
	ODT0117C	1.0-4.0	-51	800	50	3.0	0.4	BNC
	ODT0517A	1.0-4.0	-51	800	50	3.0	0.4	SMA
	ODT0118C	1.0-12	-50	550	50	3.0	1.0	BNC
	ODT0518A	1.0-12	-50	550	50	3.0	1.0	SMA
	ODT0126C	2.0-8.0	-50	600	30	3.0	0.6	BNC
	ODT0526A	2.0-6.0	-50	600	30	3.0	0.6	SMA
	ODT0127C	2.0-12	-50	550	30	3.0	0.8	BNC
	ODT0527A	2.0-12	-50	550	30	3.0	0.8	SMA
	ODT0328A	2.0-18	-48	450	30	3.0	1.0	SMA
	ODT0428C	2.0-18	-48	450	30	3.0	1.0	BNC
	ODT0134C	4.0-12	-50	500	20	3.0	0.6	BNC
	ODT0234A	4.0-12	-50	600	20	3.0	0.6	SMA
	ODT0434C	4.0-12	-50	600	20	3.0	0.6	BNC
ODT0235A	4.0-18	-48	500	20	3.0	1.0	SMA	
ODT04356	4.0-18	-48	500	20	3.0	1.0	BNC	
ODT0240A	6.0-18	-48	500	15	3.0	0.8	SMA	
ODT0440C	6.0-18	-48	500	15	3.0	0.8	BNC	
O C T A V E B A N D U N I T S	ODT0101C	0.1-0.5	-51	1000	500	2.0	0.2	BNC
	ODT0501A	0.1-0.5	-51	1000	500	2.0	0.2	SMA
	ODT0108C	0.5-1.0	-51	1000	100	2.0	0.2	BNC
	ODT0508A	0.5-1.0	-51	1000	100	2.0	0.2	SMA
	ODT0116C	1.0-2.0	-51	1000	50	2.0	0.2	BNC
	ODT0516A	1.0-2.0	-51	1000	50	2.0	0.2	SMC
	ODT0125C	2.0-4.0	-51	1000	30	2.0	0.2	BNC
	ODT0525A	2.0-4.0	-51	1000	30	2.0	0.2	SMA
	ODT0131C	2.5-5.0	-51	800	30	2.0	0.25	BNC
	ODT0531A	2.5-5.0	-51	800	30	2.0	0.25	SMA
	ODT0133C	4.0-8.0	-50	750	20	2.2	0.35	BNC
	ODT0233A	4.0-8.0	-50	750	20	2.2	0.35	SMA
	ODT0533A	4.0-8.0	-50	750	20	2.2	0.4	SMA
	ODT0137C	5.0-10	-50	700	20	2.2	0.4	BNC
	ODT0237A	5.0-10	-50	700	20	2.2	0.4	SMA
	ODT0537A	5.0-10	-50	700	20	2.2	0.5	SMA
	ODT0139C	6.0-12	-50	600	20	2.3	0.5	BNC
	ODT0239A	6.0-12	-50	600	20	2.3	0.5	SMA
	ODT0141C	7.0-11	-50	600	20	2.3	0.4	BNC
	ODT0241A	7.0-11	-50	600	20	2.3	0.4	SMA
ODT0143C	8.0-12	-50	600	20	2.3	0.5	BNC	
ODT0243A	8.0-12	-50	600	20	2.3	0.5	SMA	
ODT0244A	8.0-16	-48	500	20	2.3	0.6	SMA	
ODT0245A	8.0-18	-48	450	15	2.5	0.7	SMA	
ODT0248A	11-18	-48	450	15	2.5	0.6	SMA	
ODT0249A	12-18	-48	450	15	2.5	0.5	SMA	
ODT0251A	18-26	-45	300	8	3.5	1.0	SMA	
N A R R & O S B W P A E N C E I A U L N I T S	ODT0115C	0.7-1.4	-51	800	50	2.0	0.2	BNC
	ODT0515A	0.7-1.4	-51	800	50	2.0	0.2	SMA
	ODT0123C	1.7-2.4	-52	1000	50	1.4	0.2	BNC
	ODT0523A	1.7-2.4	-52	1000	50	1.4	0.2	SMA
	ODT0129C	2.2-2.3	-52	1000	50	1.35	0.1	BNC
	ODT0529A	2.2-2.3	-52	1000	50	1.35	0.1	SMA
	ODT0132C	3.7-4.2	-52	1000	30	1.5	0.2	BNC
	ODT0532A	3.4-4.2	-52	1000	30	1.5	0.2	SMA
	ODT0138C	5.4-5.9	-52	1000	30	1.5	0.15	BNC
	ODT0538A	5.4-5.9	-52	1000	30	1.5	0.15	SMA
	ODT0142C	7.5-8.5	-51	800	30	1.7	0.2	BNC
	ODT0242A	7.5-8.5	-51	800	30	1.7	0.2	SMA
	ODT0146C	8.5-9.6	-51	800	30	1.7	0.25	BNC
	ODT0246A	8.5-9.6	-51	800	30	1.7	0.25	SMA

MODEL NUMBERS

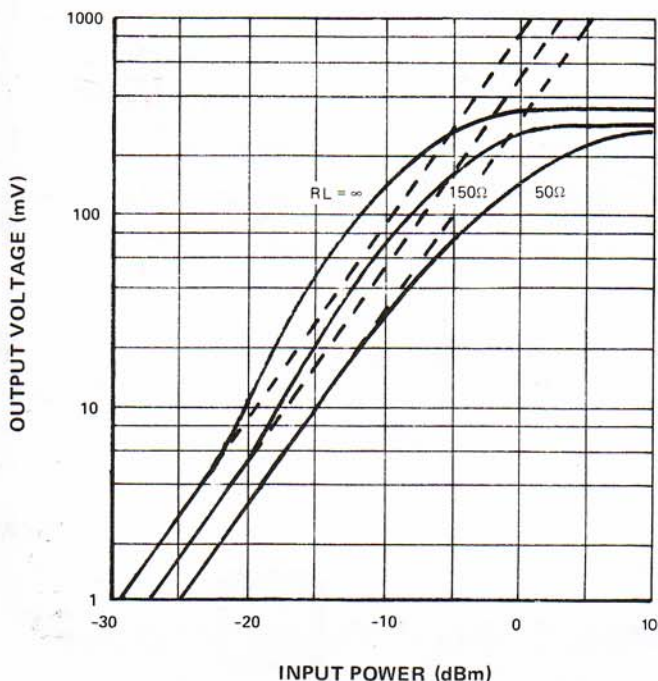


CIRCUIT

These Omnidig Detector mounts include all circuit element necessary for operation. These elements are: DC Return, Matching Network, Diode, and RF Bypass Capacitor.



PERFORMANCE CURVES



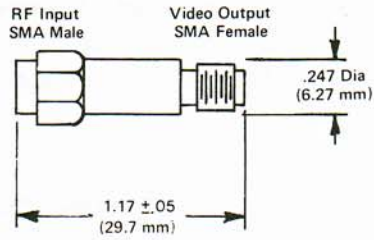
NOTES

- "K" is the small signal open circuit voltage sensitivity, V_{out}/P_{in} . Measurements are taken at -20 dBm RF incident power.
- BW = 2 MHz.
- Capacitor values listed are typical. Smaller values available for improved video bandwidth.
- VSWR is measured -20 dBm and with a 100 load.
- Video connectors have standard options at no extra cost as follows:

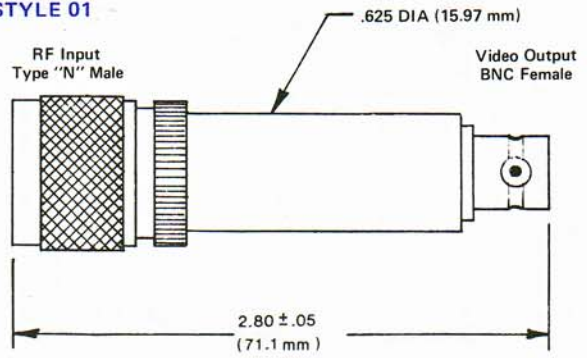
A. BNC female may be replaced with TNC female, SMA female, SMB male, SMC male or solder pin.
B. SMA female may be replaced with SMB male, SMC male or solder pin.
C. Video connector designation:
SMA female -A SMB male -F
BNC female -C SMC male -E
TNC female -G solder pin -J
D. Outline styles 00 and 03 have no video connector options. SMA female only available.
- Normal video polarity is negative. Add the letter "R" to the model number for positive polarity. (No additional charge.)
- 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 pairs.
- Warranty applies to mount only, not the diode element. This element may be replaced at the factory for a nominal charge of \$45.00.

OUTLINES

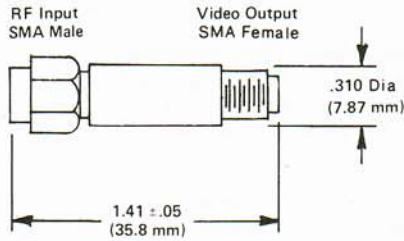
STYLE 00



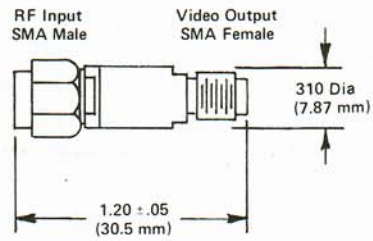
STYLE 01



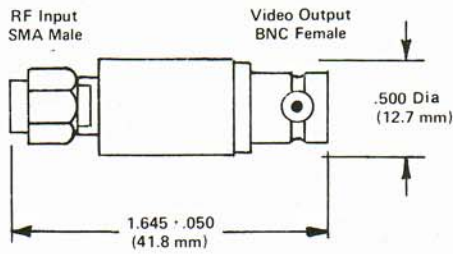
STYLE 02



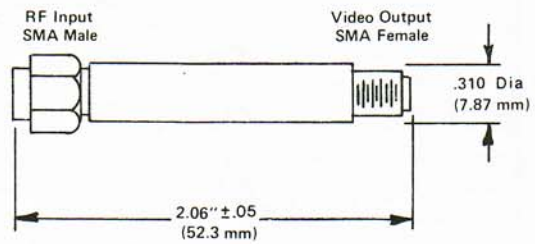
STYLE 03



STYLE 04



STYLE 05



NOTE: ALL DIA ±.010, PLUS LABEL