

DESCRIPTION

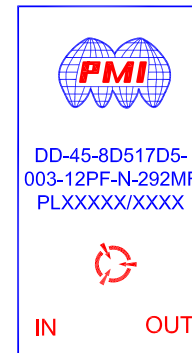
PMI MODEL: DD-45-8D517D5-003-12PF-N-292MF IS A LOW NOISE TUNNEL DIODE DETECTOR OPERATING OVER THE 8.5 TO 17.5 GHz FREQUENCY RANGE.

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	-	PRELIMINARY	9/24/19	
	1	UPDATED SPECS	10/15/19	

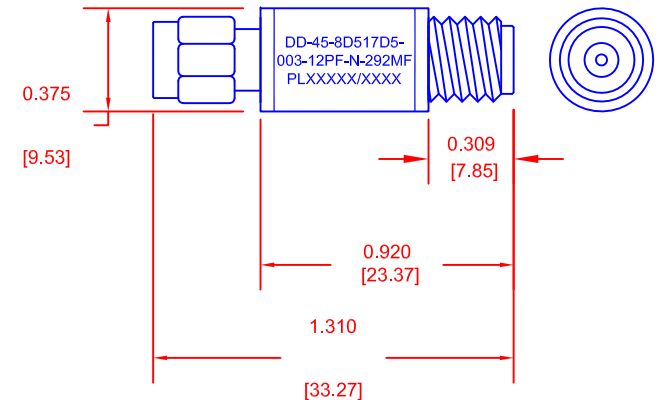
SPECIFICATIONS

- FREQUENCY RANGE: ----- 8.5 TO 17.5 GHz
- VOLTAGE SENSITIVITY: ----- 200 mV/mW MIN, 400 mV/mW TYP WITH 200 OHM LOAD (NOTE 2)
- FREQUENCY FLATNESS: ----- ± 1.5 dB MAX
- TANGENTIAL SENSITIVITY: ----- -45 dB MIN (NOTE 3)
- VIDEO RESISTANCE: ----- 80 OHMS TYP FOR RF POWER LEVEL BELOW -20 dBm
- OUTPUT CAPACITANCE: ----- +12 pF TYP
- OUTPUT VIDEO POLARITY: ----- NEGATIVE
- RF INPUT VSWR: ----- 4.0:1 MAX (NOTE 2)
- TEMPERATURE STABILITY: ----- ± 1.5 dB MAX OVER FREQUENCY AND TEMPERATURE (-55°C TO +100°C) (NOTE 2)
- MAXIMUM INPUT POWER: ----- 40 mW CW
- BIAS: ----- NO BIAS
- RISE TIME: ----- 50 ns MAX WITH 200 OHM LOAD
- CONNECTORS IN/OUT: ----- 2.92 mm MALE (SMA MALE COMPATIBLE)
2.92 mm FEMALE (SMA FEMALE COMPATIBLE)
- SIZE: ----- (L) 1.31" x $\varnothing 0.375$ "
- SEALING: ----- HARD EPOXY SEALED
- FINISH: ----- PASSIVATED STAINLESS STEEL

LABEL



MECHANICAL OUTLINE



ENVIRONMENTAL RATINGS

THE DETECTOR SHALL BE DESIGNED TO MEET SPECIFIED REQUIREMENTS AND PROVIDE REQUIRED PERFORMANCE UNDER ANY NATURAL COMBINATION OF THE SERVICE CONDITIONS SPECIFIED IN MIL-E-5400R AS SUMMARIZED BELOW.

- TEMPERATURE (AMBIENT AIR): ----- -54 °C TO +125 °C (CONTINUOUS OPERATION)
-62 °C TO +125 °C (STORAGE)
- VIBRATION: ----- MIL-E-5400R FIG2 CURVE VIa
5 TO 2000 Hz ± 0.1 INCH P-P OR ± 20 G
- SHOCK: ----- MIL-E-5400R 3.2.24.6.1
15G X 11 ± 1 ms, 3 TIMES X 6 DIRECTIONS
- HUMIDITY (NOTE 1): ----- MIL-E-5400R 3.2.24.4, 100% RH
- HARD EPOXY SEALED: ----- MIL-E-5400R TABLE 1 VIII
SEA LEVEL: 70,000 ft

ALL DIMENSIONS
ARE IN INCHES (mm)
TOLERANCES:
X.XX ± 0.020
X.XXX ± 0.010

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PMI CONFIDENTIAL AND PROPRIETARY

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ISO 9001 CERTIFIED



APPROVALS		DATE		TITLE	
DRAWN	EW	9/24/19		PRODUCT FEATURE	
REDRAWN				DD-45-8D517D5-003-12PF-N-292MF	
ISSUED					
SIZE	A	FSCM NO.	05XQ0	DWG NO.	PRELIMINARY
SCALE	N:S			SHEET	1 OF 2

DESCRIPTION

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SCREENING, QUALITY ASSURANCE PROVISION

- PRESEAL INTERNAL VISUAL: ----- ALL DETECTORS SHALL BE SUBJECTED TO PRESEAL INTERNAL VISUAL INSPECTION IN ACCORDANCE WITH T.B.S.
- STABILIZATION BAKE: ----- ALL DETECTORS SHALL BE SUBJECTED TO STABILIZATION BAKE IN ACCORDANCE WITH MIL-STD-883, METHOD 1008, CONDITION B FOR 24 HOURS.
- THERMAL SHOCK: ----- ALL DETECTORS SHALL BE SUBJECTED TO THERMAL SHOCK IN ACCORDANCE WITH MIL-STD-202, METHOD 107D, CONDITION B.
- RANDOM VIBRATION: ----- ALL DETECTORS SHALL BE SUBJECTED TO RANDOM VIBRATION IN ACCORDANCE WITH MIL-STD-202, METHOD 214, CONDITION IIF.
- FINAL ELECTRICAL TEST: ----- FINAL ELECTRICAL TEST SHALL ASSURE THAT THE DETECTOR TESTED MEETS ALL ELECTRICAL REQUIREMENTS SPECIFIED IN ITEM 3.2. ITEMS MENTIONED BELOW MUST AT LEAST BE TESTED AT OPERATING TEMPERATURE, -54°C, +25°C, +100°C AND THIS DATA MUST BE INCLUDED IN THE FINAL ELECTRICAL TEST DATA.
TEST ITEMS; 3.2.1 TO 3.2.9
- EXTERNAL VISUAL INSPECTION: ----- ALL DETECTORS SHALL BE SUBJECTED TO EXTERNAL VISUAL INSPECTION IN ACCORDANCE WITH T.B.S.

TABLE 1

TEST	METHOD	REQMT
PRESEAL INTERNAL VISUAL		100%
STABILIZATION BAKE	1008, COND. B, 24 HOURS	100%
THERMAL SHOCK	107D, COND. B	100%
RANDOM VIBRATION	214, COND. IIF	100%
FINAL ELECTRICAL TEST		100%
EXTERNAL VISUAL		100%

*NOTE 1: THE DETECTOR SHALL BE ABLE TO MEET ALL PERFORMANCE SPECIFIED IN ITEM 3.2 DURING AND AFTER EXPOSURE TO AN ATMOSPHERE OF UP TO 100% RELATIVE HUMIDITY, UNDER CONTINUOUS OPERATION TEMPERATURE RANGE.

*NOTE 2: FOR RF INPUT POWER LEVELS BELOW -20 dBm AND WITH AN OPEN CIRCUIT.

*NOTE 3: MEASURED WITH A VIDEO AMPLIFIER OF 1 MHz VIDEO BANDWIDTH AND 2 dB NOISE FIGURE.

ACCEPTANCE INSPECTION

ARTICLE 3,3 EXCEPT 3,3.3 AND ARTICLE 3,2.2 TO 3,2.9 OVER THE FREQUENCY.

ALL DIMENSIONS
ARE IN INCHES (mm)
TOLERANCES:
X.XX ±0.020
X.XXX ±0.010

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		TITLE PRODUCT FEATURE DD-45-8D517D5-003-12PF-N-292MF			
APPROVALS	DATE				
DRAWN <i>EW</i>	9/24/19				
REDRAWN		SIZE A	FSCM NO. 05XQ0	DWG NO. PRELIMINARY	REV. 1
ISSUED		SCALE N:S	SHEET 2 OF 2		