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### Threshold Detectors:

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NOTES:
1. MATERIAL: HOUSING AND COVERS ALUMINUM ALLOY. CONNECTORS, CRES.
2. FINISH: (EXCEPT CONNECTORS) WASH PRIMER PER DOD-P-15328D, PRIMER PER MIL-P-23377D, PAINT PER MIL-C-22750, COLOR BLUE.
3. MOUNTING PLATE IS ANODIZED PER MIL-A-8625, TYPE I.
4. MARKING: BLACK EPOXY INK AS FOLLOWS:
   "L", "R", "I", "1U73", "900-M10X", "SERNO XXX".
5. DATE CODE ON SIDE OF HOUSING. (YYWW)

SPECIFICATIONS
1. MATERIAL: HOUSING AND COVERS ALUMINUM ALLOY. CONNECTORS, CRES.
2. FINISH: (EXCEPT CONNECTORS) WASH PRIMER PER DOD-P-15328D, PRIMER PER MIL-P-23377D, PAINT PER MIL-C-22750, COLOR BLUE.
3. MOUNTING PLATE IS ANODIZED PER MIL-A-8625, TYPE I.
4. MARKING: BLACK EPOXY INK AS FOLLOWS:
   "L", "R", "I", "1U73", "900-M10X", "SERNO XXX".
5. DATE CODE ON SIDE OF HOUSING. (YYWW)

ATTENTION DEVICES SENSITIVE ELECTROSTATIC FOR HANDLING OBSERVE PRECAUTIONS.
SPECIFICATIONS

PAINTER PER MIL-C-22750, COLOR BLUE.

LO & RF INPUT FREQUENCY:
- 2.0 TO 18.0 GHz
- 0.7 TO 6.0 GHz

LO DRIVE (900-M104):
- +7 dBm TO +10 dBm
- +11 dBm TO +13 dBm
- +14 dBm TO +17 dBm

SSB CONVERSION LOSS:
- 6.5 dB TYP.
- 9.5 dB MAX.

IF OUTPUT FREQUENCY:
- 2.0 TO 18.0 GHz
- 0.7 TO 6.0 GHz

SOM CONVERSION LOSS:
- +28 dB TYP.
- +23 dB MIN.

LO TO RF ISOLATION:
- 25 dB TYP.
- 20 dB MIN.

LO TO IF ISOLATION:
- 25 dB TYP.
- 20 dB MIN.

LO DRIVE (900-M105):
- +11 dBm TO +13 dBm
- +14 dBm TO +17 dBm

LO DRIVE (900-M106):
- +10 dBm TYP.

INPUT 1dB COMPRESSION POINT:
- 6.5 dB TYP.

INPUT TWO-TONE THIRD ORDER INTERCEPT POINT:
- 900-M104: +15 dBm TYP.
- 900-M105: +17 dBm TYP.
- 900-M106: +20 dBm TYP.

OPERATING TEMPERATURE:
- -55°C TO +100°C

NOTES:
1. MATERIAL: HOUSING AND COVERS
   ALUMINUM ALLOY. CONNECTORS, CRES
2. FINISH: (EXCEPT CONNECTORS) WASH PRIMER PER DOD-P-15328D,
   PRIMER PER MIL-P-23377D. PAINT PER MIL-C22750, COLOR BLUE.
3. MOUNTING PLATE IS ANODIZED PER MIL-A-8625, TYPE I.
4. MARKING: BLACK EPOXY INK AS FOLLOWS:
   "L", "R", "T", "1UJ73", "900-M10X", "SERNO XXX".
5. DATE CODE ON SIDE OF HOUSING. (YYWW)

ATTENTION: IMMEDIATE ATTENTION FOR ANY CHANGE IN MATERIALS, SIZE, OR CONDITIONS. NO PAINT ON THIS SURFACE.
I SERNO XXXX
L

MOUNTING PLATE

3 PLACES
SMA FEMALE CONN
NO PAINT ON THIS SURFACE

1. MATERIAL: HOUSING AND COVERS
   ALUMINUM ALLOY. CONNECTORS, CRES
2. FINISH: (EXCEPT CONNECTORS) WASH PRIMER PER DOD-P-15328D,
   PRIMER PER MIL-P-23377D, PAINT PER MIL-C-22750, COLOR BLUE.
3. MOUNTING PLATE IS ANODIZED PER MIL-A-8625, TYPE I.
4. MARKING: BLACK EPOXY INK AS FOLLOWS:
   "L", "R", "I", "1UJ73", "900-M10X", "SERNO XXX".
5. DATE CODE ON SIDE OF HOUSING. (YYWW)

2.1 1 1 1
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MIXER OUTLINE
TO .005 MAX. R OR CHAMFER
REMOVE BURRS AND SHARP EDGES
FILLETS: .005R MAX
1 PLACE DECIMALS: ±
2 PLACE DECIMALS: ±
3 PLACE DECIMALS: ±
ANGLES: ±1/2° FRACTIONS: ±1/64
TOLERANCES ON FINISH: RMS 63
DIMENSIONS ARE IN INCHES UNLESS OTHERWISE SPECIFIED

REVISIONS

SPECIFICATIONS
LO & RF INPUT FREQUENCY: 2.0 TO 8.0 GHz
IF OUTPUT FREQUENCY: 0.7 TO 6.0 GHz
LO DRIVE (900-M110): +7 dBM TO +10 dBm
LO DRIVE (900-M111): +11 dBm TO +13 dBm
LO DRIVE (900-M112): +14 dBm TO +17 dBm
SSB CONVERSION LOSS: 6.5 dB TYP.
9.0 dB MAX.
LO TO RF ISOLATION: 28 dB TYP.
23 dB MIN.
LO TO IF ISOLATION: 25 dB TYP.
20 dB MIN.
VSWR:
LO: 3.5:1 MAX.
RF: 2.7:1 MAX.
IF: 2.2:1 TYP.
INPUT 1 dB COMPRESSION POINT:
900-M110: +3 dBm TYP.
900-M111: +7 dBm TYP.
900-M112: +10 dBm TYP.
INPUT TWO-TONE THIRD ORDER INTERCEPT POINT:
900-M110: +15 dBm TYP.
900-M111: +17 dBm TYP.
900-M112: +20 dBm TYP.
OPERATING TEMPERATURE: -55°C TO +100°C

NOTES:
1. MATERIAL: HOUSING AND COVERS
   ALUMINUM ALLOY. CONNECTORS, CRES
2. FINISH: (EXCEPT CONNECTORS) WASH PRIMER PER DOD-P-15328D,
   PRIMER PER MIL-P-23377D, PAINT PER MIL-C22750, COLOR BLUE.
3. MOUNTING PLATE IS ANODIZED PER MIL-A-8626, TYPE I.
4. MARKING: BLACK EPOXY INK AS FOLLOWS:
   "L", "R", "T", "1UJ73", "900-M11X", "SERNO XXX".
5. DATE CODE ON SIDE OF HOUSING. (YYWW)

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PERMISSION
### Specifications

1. **Material:** Housing and covers - aluminum alloy. Connectors, CRES
2. **Finish:** (Except Connectors) Wash primer per DOD-P-15328D, primer per MIL-P-23377D, paint per MIL-C22750, color blue.
3. **Mounting plate** is anodized per MIL-A-8625, Type I.
4. **Marking:** Black epoxy ink as follows: "L", "R", "T", "1UJ73", "900-M11X", "SERNO XXXX".
5. **Date code** on side of housing. (YYWW)

#### Notes:
- **LO & RF Input Frequency:** 8.0 to 18.0 GHz
- **IF Output Frequency:** DC to 850 MHz
- **LO Drive:** (900-M113): +7 dBm to +10 dBm
  - (900-M114): +11 dBm to +13 dBm
  - (900-M115): +14 dBm to +17 dBm
- **SSB Conversion Loss:** 6.5 dB TYP.
- **LO to RF Isolation:** 30 dB TYP.
- **LO to IF Isolation:** 24 dB MIN.
- **LO to IF:** 30 dB MIN.
- **VSWR:**
  - LO: 3.5:1 MAX.
  - RF: 2.8:1 MAX.
  - IF: 2.5:1 TYP.
- **INPUT 1 dB Compression Point:**
  - 900-M113: +2 dBm TYP.
  - 900-M114: +6 dBm TYP.
  - 900-M115: +9 dBm TYP.
- **INPUT Two-Tone Third Order Intercept Point:**
  - 900-M113: +13 dBm TYP.
  - 900-M114: +16 dBm TYP.
  - 900-M115: +19 dBm TYP.
- **Operating Temperature:** -55°C to +100°C

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**REVISIONS**

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**DRAWING:** MIXER OUTLINE

**TITLE:** MIXER OUTLINE

**SCALE:** 2:1

**SHEET:** 1 OF 1
NOTES:
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON FINISH: RMS63
ANGLES: ±1/2° FRACTIONS: ±1/64
3 PLACE DECIMALS: ± .005
2 PLACE DECIMALS: ± .01
1 PLACE DECIMALS: ± .1
FILETS: .005R MAX
REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

NOTE: RF INPUT FREQUENCY (GHz): 1.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 1800 mV/mW MIN.
INPUT POWER RANGE: TSS TO +10.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±1.2 dB
TSS: -52 dBm MIN.
MAX. CW RF INPUT: +23 dBm
OPERATING TEMP. RANGE: -55°C TO +125°C
STORAGE TEMP. RANGE: -65°C TO +150°C

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ATTENTION: OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES.

R.A.J. TITLE
8/27/02 DATE

DRAFT R.A.J. DATE 8/27/02
CHKD
PROD
ENGR R.A.J. 8/27/02
QA

ZERO BIAS DETECTOR

SIZE A CAGE CODE 1UJ73 DWG NO OD930-D101
SCALE 2:1 SHEET 1 OF 1
**NOTES:**
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

**SPECIFICATION NOTES:**
1. SENSITIVITY MEASURED AT -20 dBm, LOAD = 30k OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
**NOTES:**
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

**SPECIFICATION NOTES:**
1. SENSITIVITY MEASURED AT -20 dBm, LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
RF INPUT FREQUENCY (GHz): 2.0 TO 8.0 GHz
OPEN CIRCUIT SENSITIVITY: 2000 mV/mW MIN.
INPUT POWER RANGE: TSS TO +10.0 dBm
OUTPUT VOLTAGE FLATNESS
vs FREQUENCY: ±0.6 dB
TSS: -52 dBm MIN.
NOMINAL VIDEO CAPACITANCE: 20 pF
MAX. CW RF INPUT: +23 dBm
OPERATING TEMP. RANGE: -55°C TO +125°C
STORAGE TEMP. RANGE: -65°C TO +150°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
FINISH: GOLD PLATE PER MIL-G-45204, TYPE III
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE
Sensitivity measured at -20dBm, load = 30K ohms.
And 2 dB Amplifier NF.

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE
OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH
AND 2 dB AMPLIFIER NF.
RF INPUT FREQUENCY (GHz): 8.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 1800 mV/mW MIN.
INPUT POWER RANGE: TSS TO +10.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±0.7 dB
TSS: -52 dBm MIN.
NOMINAL VIDEO CAPACITANCE: 15 pF
MAX. CW RF INPUT: +23 dBm
OPERATING TEMP. RANGE: -55°C TO +125°C
STORAGE TEMP. RANGE: -65°C TO +150°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

NOTES:
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FINISH: RMS63 ANGLES ±1/2° FRACTIONS ±1/64 3 PLACE DECIMALS: ± .005 2 PLACE DECIMALS: ± .01 1 PLACE DECIMALS: ± .1 FILLETS: .005 MAX REMOVE BURRS AND SHARP EDGES TO .005 MAX R OR CHAMFER
NOTES:
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

SILICON PIN diode detector

RF INPUT FREQUENCY (GHz):
1.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY:
600 mV/mW MIN.
INPUT POWER RANGE:
TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS
vs FREQUENCY:
±1.3 dB
RF INPUT VSWR:
2.8:1 MAX.
TSS:
-51 dBm MIN.
OUTPUT IMPEDANCE:
120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE:
20 pF
MAX. CW RF INPUT:
+17 dBm
OPERATING TEMP. RANGE:
-55°C TO +100°C
STORAGE TEMP. RANGE:
-65°C TO +110°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
RF INPUT FREQUENCY (GHz): 1.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 600 mV/mW MIN.
INPUT POWER RANGE: TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±1.3 dB
RF INPUT VSWR: 2.8:1 MAX.
TSS: -51 dBm MIN.
OUTPUT IMPEDANCE: 120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE: 20 pF
MAX. CW RF INPUT: +17 dBm
OPERATING TEMP. RANGE: -55°C TO +100°C
STORAGE TEMP. RANGE: -65°C TO +110°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

NOTES:
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III
**SPECIFICATIONS**

- **RF INPUT FREQUENCY (GHz):** 2.0 TO 8.0 GHz
- **OPEN CIRCUIT SENSITIVITY:** 800 mV/mW MIN.
- **INPUT POWER RANGE:** TSS TO -5.0 dBm
- **OUTPUT VOLTAGE FLATNESS vs FREQUENCY:** ±0.5 dB
- **RF INPUT VSWR:** 2.5:1 MAX.
- **TSS:** -51 dBm MIN.
- **OUTPUT IMPEDANCE:** 120 OHMS TYP.
- **NOMINAL VIDEO CAPACITANCE:** 30 pF
- **MAX. CW RF INPUT:** +17 dBm
- **OPERATING TEMP. RANGE:** -55°C TO +100°C
- **STORAGE TEMP. RANGE:** -65°C TO +110°C

**SPECIFICATION NOTES:**

1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30 K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE, FOR POSITIVE
5. OUTPUT ADD "P" TO PART NUMBER.
6. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
NOTES:
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBM, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBM, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBM
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

RF INPUT FREQUENCY (GHz): 2.0 TO 8.0 GHz
OPEN CIRCUIT SENSITIVITY: 800 mV/mW MIN.
INPUT POWER RANGE: TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±0.5 dB
RF INPUT VSWR: 2.5:1 MAX.
TSS: -51 dBm MIN.
OUTPUT IMPEDANCE: 120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE: 30 pF
MAX. CW RF INPUT: +17 dBm
OPERATING TEMP. RANGE: -55°C TO +100°C
STORAGE TEMP. RANGE: -65°C TO +110°C

DOT DENOTES RF INPUT
NOTES:
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

RF INPUT FREQUENCY (GHz): 8.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 800 mV/mW MIN.
INPUT POWER RANGE: TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±0.75 dB
RF INPUT VSWR: 2.5:1 MAX.
TSS: -51 dBm MIN.
OUTPUT IMPEDANCE: 120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE: 15 pF
MAX. CW RF INPUT: +17 dBm
OPERATING TEMP. RANGE: -55°C TO +100°C
STORAGE TEMP. RANGE: -65°C TO +110°C

TUNNEL DIODE DETECTOR

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ON FINISH: RMS63
ANGLES: ±1/2° FRACTIONS: ±1/64
3 PLACE DECIMALS: ± .005
2 PLACE DECIMALS: ± .01
1 PLACE DECIMALS: ± .1
Fillet: .005R MAX
REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

DRAFT: R.A.J. DATE: 8/27/02
CHKD: R.A.J. PROD: ENGR: QA:
CAGE CODE
DESCRIPTION
REVISIONS
PERMISSION

BASIS FOR THE MANUFACTURE OR SALE OF ITEM(S) WITHOUT WRITTEN
AND SHALL NOT BE REPRODUCED OR COPIED OR USED IN PART AS THE
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF RH LABS
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON FINISH: RMS63
ANGLES: ± 1/2° FRACTIONS: ± 1/64
3 PLACE DECIMALS: ± .005
2 PLACE DECIMALS: ± .001
1 PLACE DECIMALS: ± .1
FILLETS: .005 MAX
REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

NOTE:
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

SPECIFICATIONS
RF INPUT FREQUENCY (GHz): 8.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 800 mV/mW MIN.
INPUT POWER RANGE: TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±0.75 dB
RF INPUT VSWR: 2.5:1 MAX.
TSS: -51 dBm MIN.
OUTPUT IMPEDANCE: 120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE: 15 pF
MAX. CW RF INPUT: +17 dBm
OPERATING TEMP. RANGE: -55°C TO +100°C
STORAGE TEMP. RANGE: -65°C TO +110°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

NOTE:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

NOTE:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

NOTE:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
RF INPUT FREQUENCY (GHz): 6.0 TO 18.0 GHz
OPEN CIRCUIT SENSITIVITY: 800 mV/mW MIN.
INPUT POWER RANGE: TSS TO -5.0 dBm
OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±1.0 dB
RF INPUT VSWR: 2.5:1 MAX.
TSS: -51 dBm MIN.
OUTPUT IMPEDANCE: 120 OHMS TYP.
NOMINAL VIDEO CAPACITANCE: 15 pF
MAX. CW RF INPUT: +17 dBm
OPERATING TEMP. RANGE: -55°C TO +100°C
STORAGE TEMP. RANGE: -65°C TO +110°C

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, LOAD = 30K OHMS
2. VSWR MEASURED AT -20dBm, LOAD = 100 OHMS
3. VIDEO IMPEDANCE MEASURED AT -20dBm
4. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
5. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

MATERIAL: BODY, ConnectORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
MARKING: BLACK EPOXY INK

TUNNEL DIODE DETECTOR

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UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON FINISH RMS63
ANGLES ±1/8" FRACTIONS ± 1/64
3 PLACE DECIMALS ± .005
2 PLACE DECIMALS ± .01
1 PLACE DECIMALS ± .1
FILLETS .005R MAX.
REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

DATE APPROVED
R.A.J. 8/27/02

DATE
8/27/02

TUNNEL DIODE DETECTOR

SIZE
A

CAGE CODE
1UJ73

DWG NO
OD930-D133

SCALE
2:1

SHEET 1 OF 1
NOTES:
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, 100uA BIAS, VIDEO LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
**REVISIONS**

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<tr>
<th>SYM</th>
<th>DESCRIPTION</th>
<th>DATE</th>
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**SPECIFICATIONS**

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<tr>
<th>Specification</th>
<th>Value</th>
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<tbody>
<tr>
<td>RF INPUT FREQUENCY (GHz)</td>
<td>1.0 TO 18.0 GHz</td>
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<tr>
<td>OPEN CIRCUIT SENSITIVITY</td>
<td>1600 mV/mW MIN.</td>
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<tr>
<td>INPUT POWER RANGE</td>
<td>TSS TO +5.0 dBm</td>
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<tr>
<td>OUTPUT VOLTAGE FLATNESS vs FREQUENCY</td>
<td>±1.2 dB</td>
</tr>
<tr>
<td>TSS</td>
<td>±51 dB MIN.</td>
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<tr>
<td>NOMINAL VIDEO CAPACITANCE</td>
<td>20 pF</td>
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<td>MAX. CW RF INPUT</td>
<td>+23 dBm</td>
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<tr>
<td>OPERATING TEMP. RANGE</td>
<td>-55°C TO +125°C</td>
</tr>
<tr>
<td>STORAGE TEMP. RANGE</td>
<td>-65°C TO +150°C</td>
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</table>

**SPECIFICATION NOTES:**

1. SENSITIVITY MEASURED AT -20dBm, 100uA BIAS, VIDEO LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

**NOTES:**

1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

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**DIAGRAM NOTES:**

- DIMENSIONS ARE IN INCHES
- TOLERANCES ON FINISH-RMS3
- ANGLES: ±1/2° FRACTIONS: ±1/64
- 3 PLACE DECIMALS: ± .005
- 2 PLACE DECIMALS: ± .01
- 1 PLACE DECIMALS: ± .1
- FILLETS: .005R MAX
- REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

**TABLE: BIASED SCHOTTKY DETECTOR**

<table>
<thead>
<tr>
<th>TITLE</th>
<th>SIZE</th>
<th>CAGE CODE</th>
<th>DWG NO</th>
<th>SCALE</th>
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<tr>
<td>BIASED SCHOTTKY DETECTOR</td>
<td>A</td>
<td>1UJ73</td>
<td>OD930-D114</td>
<td>4:1</td>
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**DRAWING SIZE:** SHEET 1 OF 1
### Specifications

<table>
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<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>RF Input Frequency (GHz)</td>
<td>2.0 TO 8.0 GHz</td>
</tr>
<tr>
<td>Open Circuit Sensitivity</td>
<td>2000 mV/mW MIN.</td>
</tr>
<tr>
<td>Input Power Range</td>
<td>TSS TO +5.0 dB</td>
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<tr>
<td>Output Voltage Flatness vs Frequency</td>
<td>±1.0 dB</td>
</tr>
<tr>
<td>TSS</td>
<td>-51 dB MIN.</td>
</tr>
<tr>
<td>Nominal Video Capacitance</td>
<td>20 pF</td>
</tr>
<tr>
<td>Max. CW RF Input</td>
<td>+23 dB</td>
</tr>
<tr>
<td>Operating Temp. Range</td>
<td>-55°C TO +125°C</td>
</tr>
<tr>
<td>Storage Temp. Range</td>
<td>-65°C TO +150°C</td>
</tr>
</tbody>
</table>

### Notes:

1. Material: Body, Connectors and Sleeve CRES Passivated per QQ-P-35.
2. Marking: Black epoxy ink

### Attention

Observe precautions for handling Electrostatic Sensitive Devices.

### Diagram

The diagram shows the physical layout of the device with labels for RF input, video output, SMA male, and SMA female connectors.

### Notes

- Material: Body, Connectors and Sleeve CRES Passivated per QQ-P-35.
- Marking: Black epoxy ink

### Drawing Information

- **Title:** Biased Schottky Detector
- **Size:** A
- **Cage Code:** 1UJ73
- **DWG No.:** OD930-D115
- **Scale:** 2:1
- **Sheet:** 1 of 1
NOTES:
1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, 100uA BIAS, VIDEO LOAD = 30K ΩHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.
NOTES:
1. MATERIAL: BODY, CONNECTORS AND SLEEVE CRES PASSIVATED PER QQ-P-35.
2. MARKING: BLACK EPOXY INK

SPECIFICATION NOTES:
1. SENSITIVITY MEASURED AT -20dBm, 100uA BIAS, OHMS VIDEO LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH AND 2 dB AMPLIFIER NF.

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SCALE 2:1 SHEET 1 OF 1
REVISIONS

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SPECIFICATIONS

- RF INPUT FREQUENCY (GHz): 8.0 TO 18.0 GHz
- OPEN CIRCUIT SENSITIVITY: 1800 mV/mW MIN.
- INPUT POWER RANGE: TSS TO +5.0 dB
- OUTPUT VOLTAGE FLATNESS vs FREQUENCY: ±1.0 dB
- TSS: -51 dB MIN.
- NOMINAL VIDEO CAPACITANCE: 15 pF
- MAX. CW RF INPUT: +23 dB
- OPERATING TEMP. RANGE: -55°C TO +125°C
- STORAGE TEMP. RANGE: -65°C TO +150°C

SPECIFICATION NOTES:

1. SENSITIVITY MEASURED AT -20dBm, 100uA BIAS, OHMS
   VIDEO LOAD = 30K OHMS
2. OUTPUT POLARITY IS NEGATIVE. FOR POSITIVE
   OUTPUT ADD "P" TO PART NUMBER.
3. TSS BASED ON 2 MHz VIDEO BANDWIDTH
   AND 2 dB AMPLIFIER NF.

NOTES:

1. MATERIAL: KOVAR PER MIL-I-23011, CLASS 1
2. FINISH: GOLD PLATE PER MIL-G-45204, TYPE III

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ON FINISH: RMS3
ANGLES ±1/2° FRACTIONS ±1/64
2 PLACE DECIMALS ± .005
1 PLACE DECIMALS ± .01
FILLETS ± .005R MAX
REMOVE BURRS AND SHARP EDGES TO .005 MAX. R OR CHAMFER

DRAFT R.A.J. 8/27/02
CHKD R.A.J.
PROD R.A.J. 8/27/02
ENGR R.A.J.
QA

PRODUCTION SCALE 4:1
1 SHEET 1 OF 1