SILICON SCHOTTKY DETECTOR DIODES

These low barrier diodes are suitable for use in waveguide, coaxial and stripline applications. They feature high sensitivity, and low I/F noise. These diodes are listed by increasing frequency, grouped by package style and T_{ss}. Other case styles are available upon request.

SPECIFICATIONS @ +25°C

PACKAGED N-TYPE DETECTOR DIODES

Type Number	Test Frequency (GHz)	Tangential Signal Sens. T_{ss} (dBm) Min	Video Impedance Range (kOhms)	Package Description	Case Style
ML40053	3.0	-55	1 - 2	Glass Axial Lead	54
ML40052	3.0	-50	1 - 2	Glass Axial Lead	54
ML40064	3.0	-55	1 - 2	Ceramic MQM	119
ML40063	3.0	-50	1 - 2	Ceramic MQM	119
ML40261	3.0	-55	1 - 2	Hermetic Stripline	186
ML40260	3.0	-50	1 - 2	Hermetic Stripline	186
ML40202	10.0	-55	1 - 2	Glass Axial Lead	54
ML40204	10.0	-52	1 - 2	Glass Axial Lead	54
ML40072	10.0	-50	1 - 2	Glass Axial Lead	54
ML40201	10.0	-55	1 - 2	Ceramic MQM	119
ML40203	10.0	-52	1 - 2	Ceramic MQM	119
ML40065	10.0	-50	1 - 2	Ceramic MQM	119
ML40207	10.0	-55	1 - 2	Ceramic Pill	120/276
ML40208	10.0	-52	1 - 2	Ceramic Pill	120/276
ML40264	10.0	-55	1 - 2	Hermetic Stripline	186
ML40263	10.0	-52	1 - 2	Hermetic Stripline	186
ML40262	10.0	-50	1 - 2	Hermetic Stripline	186
ML40205	16.0	-52	1 - 2	Ceramic MQM	119
ML40206	16.0	-50	1 - 2	Ceramic MQM	119
ML40215	16.0	-52	1 - 2	Ceramic Pill	120/276
ML40216	16.0	-50	1 - 2	Ceramic Pill	120/276
ML40267	36.0	-49	1 - 2	Ceramic Pill	119
ML40268	36.0	-49	1 - 2	Ceramic Pill	120

NOTES

1. Schottky barrier junction diodes are thermocompression bonded in case style 119 and 120. Case style 54 uses pressure contacts. The standard case style is given for each model number. Other case styles are available upon request. For additional information, contact the factory.
2. T_{ss} is measured with a video amplifier bandwidth of 2MHz and nominal amplifier noise figure of 3dB. DC impedance is 10K ohms. The dc Bias is 20μA.
3. Video Impedance is measured with RF Power = -30dBm. The dc forward bias is +20μA.
4. Storage/Operating Temperature -65°C to +150°C
5. Power Ratings at 25°C
   - Maximum Peak Incident RF Power: S-X Band 1 Watt for 1 microsecond maximum pulse length; Ku-K Band 0.5 watt for 1 microsecond maximum pulse length
   - Maximum CW RF Power: S-X Band 150mW; Ku-K Band 100mW
   - Derate Linearly to Zero at 150°C
6. Solder Temperature Ratings
   - (case style 54, 276, 186): 230°C for 5 seconds, 1mm from package
   - (case style 120): 200°C for 5 seconds

PACKAGED P-TYPE DETECTOR DIODES

Type Number	Test Frequency (GHz)	Tangential Signal Sens. T_{ss} (dBm) Min	Sensitivity (mV/mW) Min	Video Impedance Range (k Ohms) Min.	Max.	Case Style
ML40252	10.0	-55	5000	1.2 -	1.8	54
ML40254	10.0	-52	3500	1.2 -	1.8	54
ML40251	10.0	-55	5000	1.2 -	1.8	119
ML40253	10.0	-52	3500	1.2 -	1.8	119
ML40257	10.0	-55	5000	1.2	1.8	120
ML40258	10.0	-52	3500	1.2 -	1.8	120
ML40257	10.0	-55	5000	1.2 -	1.8	276
ML40258	10.0	-52	3500	1.2 -	1.8	276
ML40255	16.0	-52	3500	1.2 -	1.8	119
ML40256	16.0	-50	3000	1.2 -	1.8	119
ML40265	16.0	-52	3500	1.2 -	1.8	120
ML40266	16.0	-50	3000	1.2 -	1.8	120
ML40265	16.0	-52	3500	1.2 -	1.8	276
ML40268	16.0	-50	3000	1.2 -	1.8	276

NOTES

1. T_{ss} is measured with a video amplifier bandwidth of 2MHz and noise figure of 3dB. Impedance is 10 kilohm and dc bias is +20μA.
2. Video impedance is measured with RF power = -30dBm. The DC forward bias is +20μA.
3. Sensitivity is measured at the indicated test frequency and at -30dBm RF power with R_L = 10K ohms and DC forward bias +20μA.
4. Alternative case styles are available on request.
5. Storage/Operating Temperature -65°C to +150°C
6. Power Ratings at 25°C

   Maximum Peak Incident RF Power S-X Band 1 Watt for 1 microsecond maximum pulse length
   Ku-K Band 0.5 watt for 1 microsecond maximum pulse length

   Maximum CW RF Power S-X Band 150mW
   Ku-K Band 100mW

   Derate Linearly to Zero at 150°C
7. Solder Temperature Ratings

   (case style 54, 276, 186) 230°C for 5 seconds, 1mm from package
   (case style 120) 200°C for 5 seconds

TYPICAL PERFORMANCE

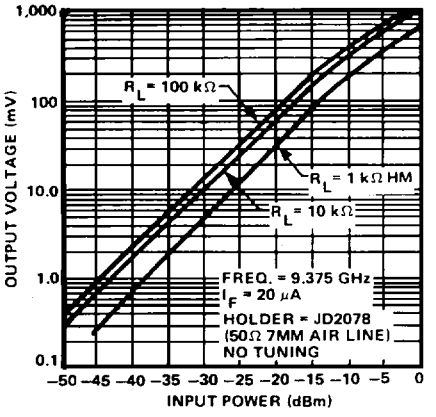

FIG. 1 ML 40200 Series Nominal Output Voltage at X Band (Forward Bias)

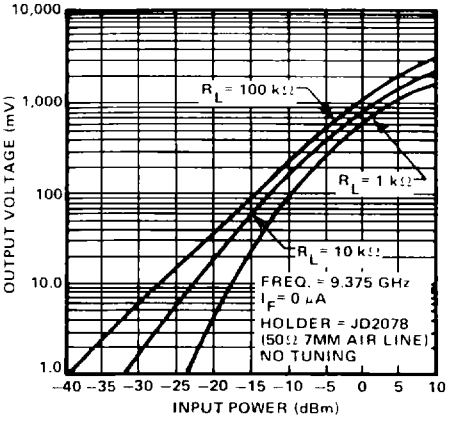

FIG. 2 ML 40200 Series Nominal Output Voltage An X Band (with zero bias)

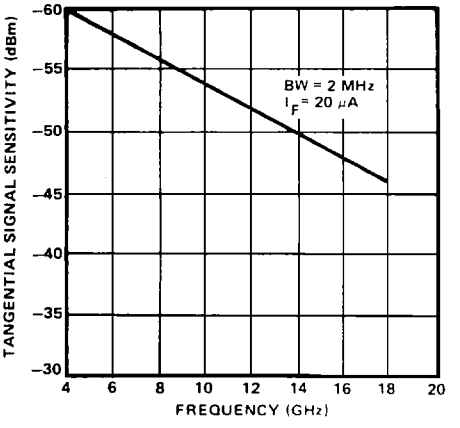

FIG. 3 ML 40200 Series Nominal Tangential Signal Sensitivity vs. Frequency

TYPICAL PERFORMANCE

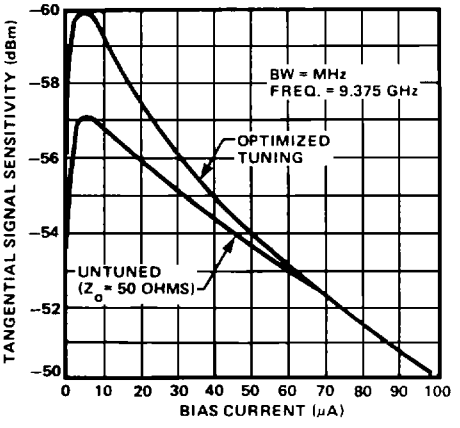

FIG. 4 ML 40200 Series Nominal Tangential Signal Sensitivity vs. Bias Current at X Band

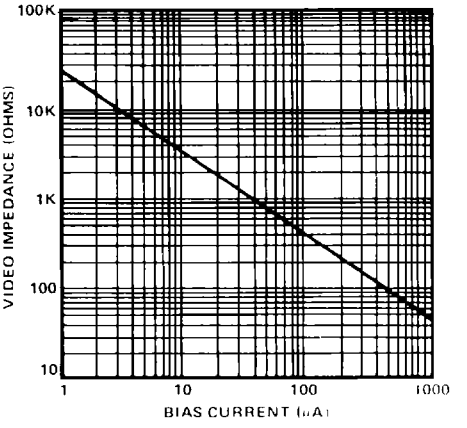

FIG. 5 ML 40200 Series Nominal Video Impedance vs. Bias Current