

NSR15TW1

Triple RF Schottky Diode

These diodes are designed for analog and digital applications, including DC based signal detection and mixing applications.

Features:

- Low Capacitance (<1 pF)
- Low V_F (390 mV typical @ 1 mA)
- Low V_{FA} (1 mV typical @ 1 mA)

Benefits:

- Reduced Parasitic Losses
- Accurate Signal Measurement

MAXIMUM RATINGS

| Rating | Symbol | Max | Unit |
|---|----------------|-------------|------|
| Peak Reverse Voltage | V_R | 15 | V |
| Forward Current | I_F | 30 | mA |
| Operating and Storage Temperature Range | T_J, T_{stg} | -65 to +150 | °C |
| ESD Rating: Class 1 per Human Body Model Class A per Machine Model | | | |

THERMAL CHARACTERISTICS

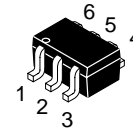
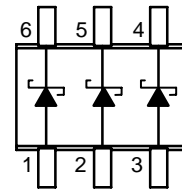
| Characteristic | Symbol | Value | Unit |
|--|-----------------|-------|------|
| Maximum Thermal Resistance – Junction to Ambient | $R_{\theta JA}$ | 500 | °C/W |



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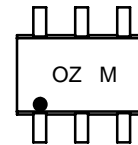
<http://onsemi.com>

RF SCHOTTKY BARRIER DIODES 15 VOLTS, 30 mA



SC-88
CASE 419B
STYLE 15

MARKING DIAGRAM



OZ = Specific Device Code
M = Date Code

ORDERING INFORMATION

| Device | Package | Shipping |
|------------|---------|------------------|
| NSR15TW1T2 | SC-88 | 3000/Tape & Reel |

ELECTRICAL CHARACTERISTICS

| Characteristic | Symbol | Min | Typ | Max | Unit |
|---|--------------|-----|-----|-----|------|
| Breakdown Voltage ($I_R = 10 \mu A$) | V_{BR} | 15 | 20 | – | V |
| Reverse Leakage ($V_R = 1 V$) | I_R | – | 2 | 50 | nA |
| Forward Voltage ($I_F = 1 mA$) | V_{F1} | – | 390 | 415 | mV |
| Forward Voltage ($I_F = 10 mA$) | V_{F2} | – | 530 | 680 | mV |
| Delta V_F ($I_F = 1 mA$, All Diodes) | ΔV_F | – | 1 | 15 | mV |
| Capacitance ($V_F = 0 V$, $f = 1 MHz$) | C_T | – | 0.8 | 1 | pF |

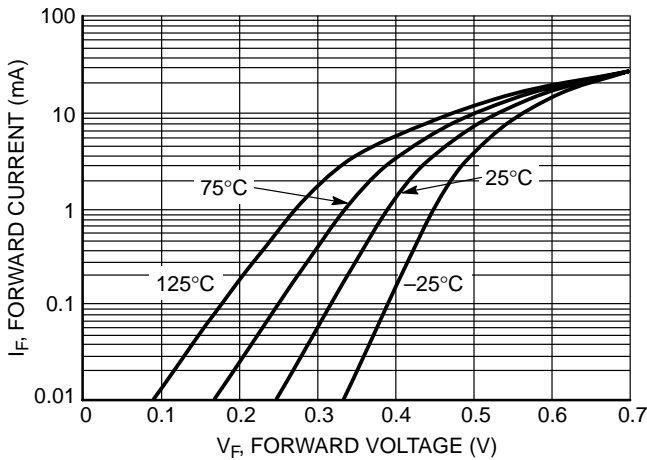


Figure 1. Forward Current versus Forward Voltage at Temperatures

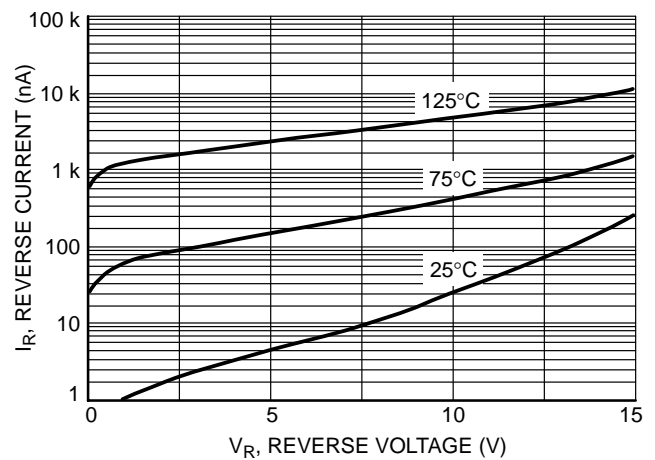


Figure 2. Reverse Current versus Reverse Voltage

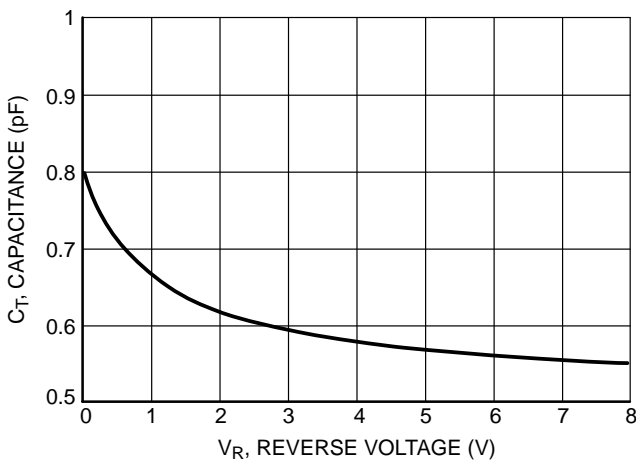


Figure 3. Total Capacitance versus Reverse Voltage

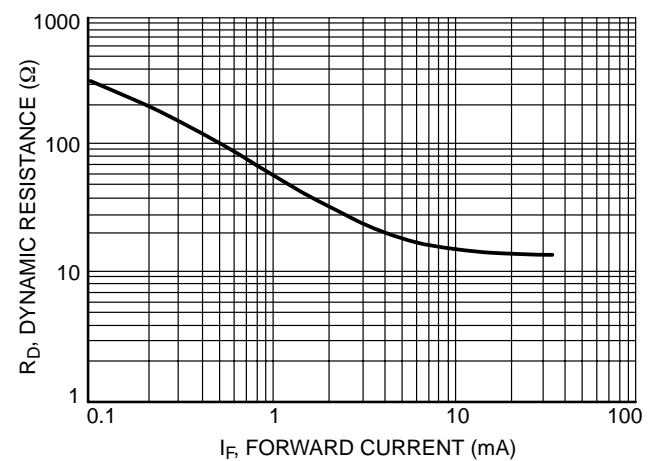


Figure 4. Dynamic Resistance versus Forward Current

NSR15TW1

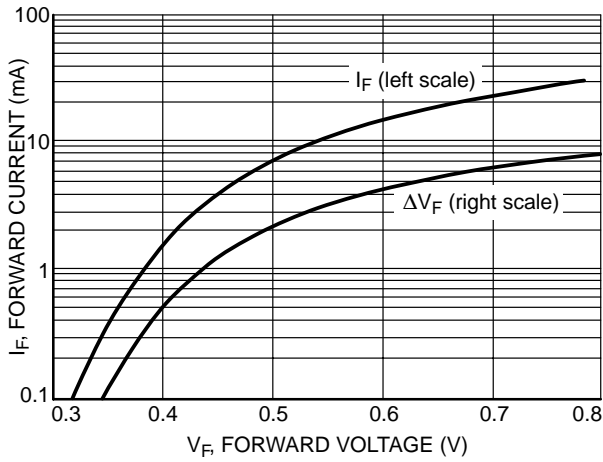


Figure 5. Typical V_F Match at Mixer Bias Levels

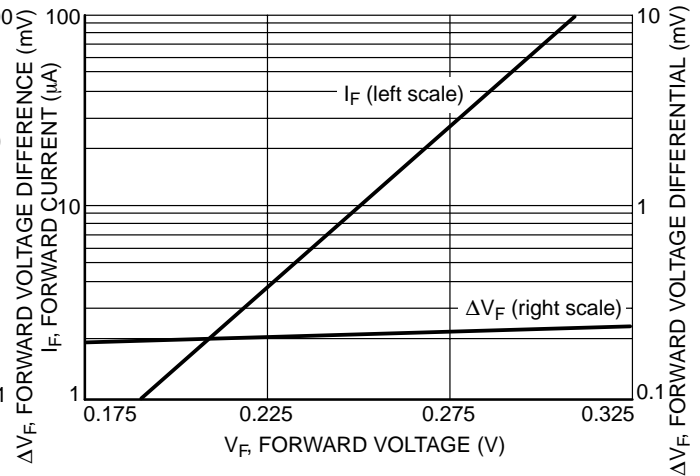


Figure 6. Typical V_F Match at Detector Bias Levels

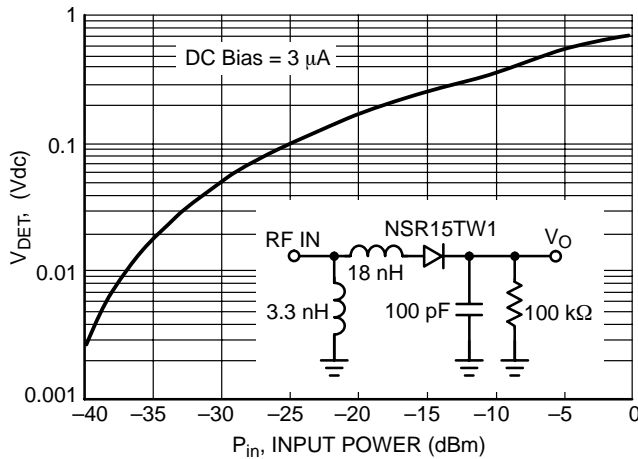


Figure 7. Typical Output Voltage versus Input Power, Small Signal Detector Operating at 850 MHz

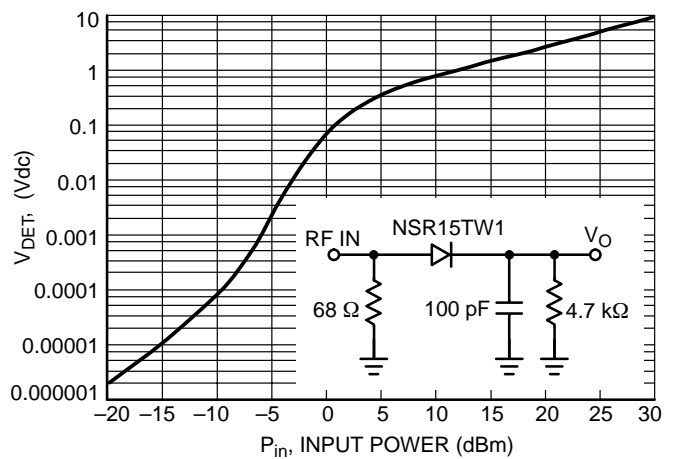


Figure 8. Typical Output Voltage versus Input Power, Large Signal Detector Operating at 915 MHz

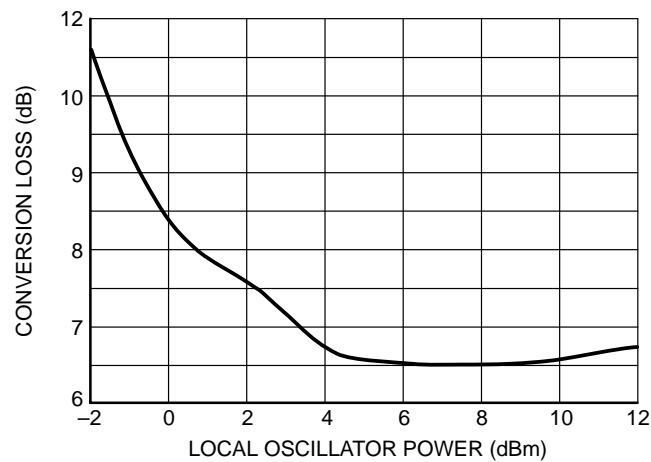
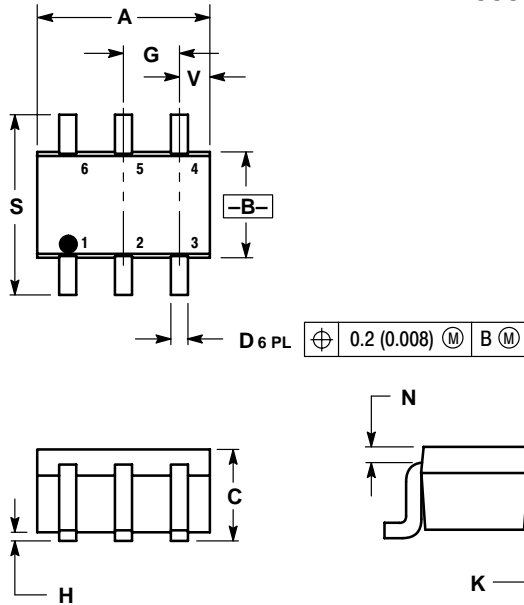


Figure 9. Typical Conversion Loss versus L.O. Drive, 2.0 GHz

NSR15TW1

PACKAGE DIMENSIONS


SC-88 (SOT-363)
CASE 419B-01
ISSUE G



- NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
 2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|-----|-----------|-------|-------------|------|
| | MIN | MAX | MIN | MAX |
| A | 0.071 | 0.087 | 1.80 | 2.20 |
| B | 0.045 | 0.053 | 1.15 | 1.35 |
| C | 0.031 | 0.043 | 0.80 | 1.10 |
| D | 0.004 | 0.012 | 0.10 | 0.30 |
| G | 0.026 BSC | | 0.65 BSC | |
| H | --- | 0.004 | --- | 0.10 |
| J | 0.004 | 0.010 | 0.10 | 0.25 |
| K | 0.004 | 0.012 | 0.10 | 0.30 |
| N | 0.008 REF | | 0.20 REF | |
| S | 0.079 | 0.087 | 2.00 | 2.20 |
| V | 0.012 | 0.016 | 0.30 | 0.40 |

- STYLE 15:
- PIN 1: ANODE
2: ANODE
3: ANODE
4: CATHODE
5: CATHODE
6: CATHODE

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