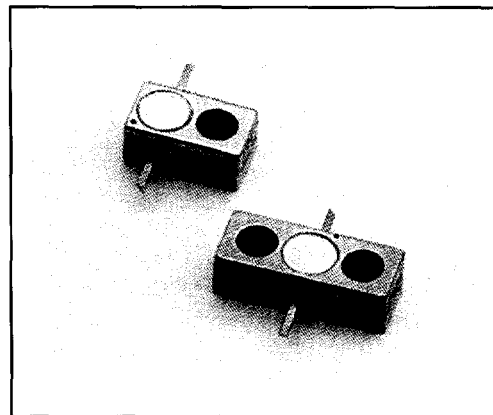


BOLT CHANNEL SCHOTTKY DETECTORS

Static protection and easy mounting are important features of these high sensitivity detectors. They offer excellent octave or broadband RF performance and rugged construction for harsh environments. The static protection virtually eliminates damage due to handling or from video transients. The Bolt Channel package allows for very simple and reliable screw-on mounting. The modified package saves additional space by eliminating one thru hole. The standard output polarity is positive. Negative output versions are available with slightly lower sensitivity.



They may be used in microstrip or stripline applications for radar equipment, broadband or narrowband ECM receivers, missile guidance systems, power and signal monitors, input to low noise video amplifiers, Doppler radar and beacon receivers. In addition, matched units may be used in multichannel receivers, amplitude comparator systems and discriminators.

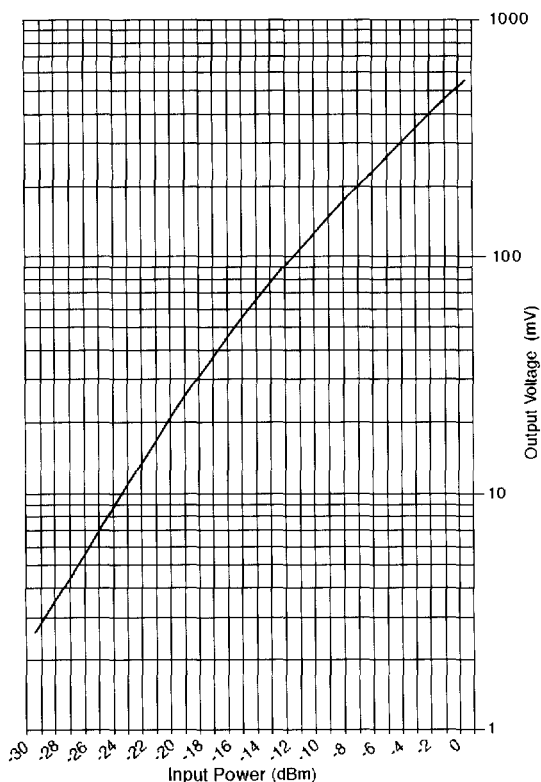
Each detector model contains:

- | | |
|-------------------|---------------------------|
| 1. DC return | 2. RF bypass capacitor |
| 3. Detector diode | 4. Video Protection Diode |

FEATURES

- Static Protection
- Easy Mounting
- High Sensitivity
- Small Size

BOLT CHANNEL SCHOTTKY DETECTOR PERFORMANCE



ACSM-2032PM51 TRANSFER CHARACTERISTIC

BOLT CHANNEL ELECTRICAL SPECIFICATIONS

| Model Number | Frequency Range (GHz) | Minimum Sensitivity K (mV/mW) | Typical TSS (dBm) | Flatness (± dB) | Typical Output Capacitance (pF) | Standard Case Style | Optional Case Style |
|---------------|-----------------------|-------------------------------|-------------------|-----------------|---------------------------------|---------------------|---------------------|
| ACSM-2036PM51 | 0.95-1.25 | 2000 | -53 | 0.2 | 20 | M51 | M50 |
| ACSM-2155PM51 | 1.0-1.50 | 1700 | -52 | 0.25 | 75 | M51 | M50 |
| ACSM-2030PM51 | 2.0-6.0 | 2000 | -53 | 0.4 | 12 | M51 | M50 |
| ACSM-2032PM51 | 2.0-12.0 | 2000 | -52 | 1.0 | 12 | M51 | M50 |
| ACSM-2131PM51 | 2.0-18.0 | 1800 | -51 | 1.3 | 12 | M51 | M50 |
| ACSM-2033PM51 | 8.0-18.0 | 1800 | -51 | 1.0 | 12 | M51 | M50 |
| ACSM-2034PM51 | 12.0-18.0 | 1800 | -51 | .75 | 12 | M51 | M50 |
| ACSM-2139PM51 | 17.0-20.0 | 1700 | -51 | 0.5 | 9.1 | M51 | M50 |

NOTES:

- Output capacitance may be chosen. Contact the factory if a special value is needed.
- TSS is measured using a 2MHz video bandwidth and an amplifier with a 2dB noise figure (NF).
- Model number modification applies to:
 - Output polarity (N= negative, P = positive)
 - Special output RF bypass capacitor value
 - Case style option
 - Zero bias option
 Example: ACSM-2036PM519 P (polarity) M51 (outline) 9 (9.1 pF capacitor)
- Zero bias schottky versions are available for most of the listed biased schottky models, with only minor differences in specifications. The important differences are:
 - The zero bias schottky has an impedance of several thousand Ohms. (Low Level power input.)
 - A less sensitive TSS due to the high diode impedance (typically a 3dB reduction).
 - The temperature performance of the zero bias schottky is poor when operating a low input power levels. This difference becomes small at high levels (above 0dBm input power). The part number of zero bias versions includes a "Z" following the polarity (negative). Example: ACSM-2036PZM519
- Video protection is available on most models. This feature helps to prevent damage to the detector diode from incidents occurring at the video port. Transient electromagnetic spikes, static contact, or voltage surges can easily damage a detector diode. A video protection diode will clamp the voltage at a value less than the detector breakdown voltage. NOTE: Inclusion of this protection will cause this output voltage to compress and clamp. This occurs at about +10dBm input to the detector. If operation above +10dBm is required then the output protection should be modified or excluded. Contact the factory for assistance. Adding a suffix "X" at the end of this model number will exclude the video protection feature.

ENVIRONMENTAL CONSIDERATIONS

All components manufactured by Advanced Control Components are built to withstand difficult environments. Individual tests can be performed per customer requirements. Listed below are some typical conditions our detectors are capable of meeting.

- Temperature Range: Operating -65°C to +125°C
Storage -65°C to +150°C
(A decrease in sensitivity occurs at elevated temperature)
- Mechanical Shock: 50 g's, 11msec
- Vibration: 20 g's, 5 to 2000 Hz
- Constant Acceleration: 20,000 g's, Y₁ Plane
- Humidity: 98% RH

Tests and conditions vary for each application.
Performance of these or other environmental tests will be quoted on request.