

PIN and Limiter Diodes

Features

- Limiter diodes
 - Low-distortion performance
 - Low loss
 - Excellent power handling
 - Available in single, series pair and low inductance configurations
 - Application: Used as a passive receiver protector
- PIN diodes
 - Available as:
 - Very low capacitance
 - Fast switching speed
 - Low resistance and capacitance
 - Low resistance
 - Large signal switching
 - Low distortion attenuator
 - Very low distortion attenuator
 - Available configurations:
 - Single
 - Ring
 - Common cathode
 - Common anode
 - Anti-parallel
 - Low and ultra-low inductance
 - π network
 - Series pair



Skyworks offers over 70 packaged PIN diodes for all RF applications. These parts can be found in handsets, mobile infrastructure, WLAN systems, GPS systems, automobiles, radar, and much more. These products are fabricated in our Silicon facilities and packaged in industry-standard, RoHS-compliant, plastic surface mount packages. Many diodes are also available as bare die, beam-lead, or in ceramic packaging.

PIN Diodes for Switch and Attenuator Applications

Feature/Application	Characteristics	Configuration	Package	Part Number
0402 High Isolation Switch	Very Low Capacitance (0.13 pF), Isolation 40 dB	Single	0402	SMP1345-040LF
T/R Switch Quad PIN	Low Insertion Loss (0.4 dB)	Ring Quad	LGA	SMP1345-518
High Isolation Switch	Very Low Capacitance (0.2 pF), Isolation 40 dB	Series Pair	SOT-23	SMP1345-005LF
High Isolation Switch	Low Capacitance, Fast Switching	Single	SC-79	SMP1340-079LF
Low Inductance Switch	Low Capacitance, Low R_s , Low Inductance (0.4 nH)	Single	SOT-23	SMP1320-007LF
Ultra Low Inductance Switch	Ultra-Low Inductance (0.2 nH)	Single	SOT-143	SMP1320-017LF
High Isolation (LNB Multi-Switch)	Low Capacitance (< 0.25 pF)	Series Pair	SOT-23	SMP1321-005LF
Large Signal Switch	Large Signal	Single	SC-79	SMP1352-079LF
Attenuator	Low Distortion	Single	SC-79	SMP1302-079LF
High Power Switch	Handles Up to 30 W C/W	Shunt	QFN	SMP1302-085LF
Attenuator	Low Distortion	Common Cathode	SOT-23	SMP1304-004LF
Attenuator	Low Inductance (0.4 nH)	Single	SOT-23	SMP1304-007LF
CATV and Infrastructure Attenuator	Lowest Distortion, High IP3	Single	SOD-323	SMP1307-011LF
CATV and Infrastructure Attenuator	Lowest Distortion, High IP3	Common Cathode	SOT-23	SMP1307-004LF
CATV and Infrastructure Attenuator	Lowest Distortion, High IP3, Quad	PI Quad	SOT-5	SMP1307-027LF

Limiter Diodes for Receiver Protection Applications

Feature/Application	Characteristics	Configuration	Package	Part Number
0402 Receiver Protection	Clean-up Limiter, C_i 0.7 pF, 1.25 Ω @ 10 mA	Single	0402	SMP1330-040LF
Receiver Protection	Clean-up Limiter, C_i 0.7 pF, 1.25 Ω @ 10 mA	Series Pair	SOT-23	SMP1330-005LF
Receiver Protection	High Power Limiter	Single	QFN	CLA4609-086LF

Schottky Diodes

Features

- Schottky diodes
 - Available as:
 - General purpose
 - Low capacitance and high voltage
 - Mixer and detector
 - Available configurations:
 - Single
 - Common cathode
 - Series pair
 - Unconnected pair
- Schottky quad mixer diodes
 - Applications: double balanced mixers, modulators, frequency multipliers
 - Available configurations
 - Ring quad
 - Crossover ring quad
 - Bridge quad
 - Ring octoquad
 - Crossover ring octoquad



Skyworks offers over 40 packaged Schottky diodes for RF applications. These quality products are fabricated in our Silicon facilities and packaged in industry standard, RoHS-compliant, plastic surface mount packages. The quad mixers are also available as bare die on film frame. Others are available as bare die, beam-lead, or in ceramic packaging.

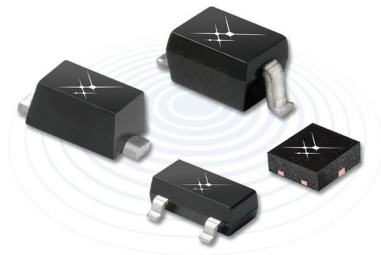
Schottky Diodes for Detector and Mixer Applications

Feature/Application	Characteristics	Configuration	Package	Part Number
Ultra Small Zero Bias Detector	Low Inductance, Low Capacitance	Single	0201	SMS7630-061
WLAN Zero Bias Detector	Lowest Barrier Height for Best Sensitivity	Single	SC-79	SMS7630-079LF
Zero Bias Detector	Low Inductance, Low Capacitance	Reverse Series Pair	SOT-23	SMS7630-006LF
Ultra-Small Detector Diode	Low Barrier Height, $C_T = 0.18$ pF Max.	Single	0201	SMS7621-060
LNB and General Detector Diode	Low Barrier Height, $C_T = 0.18$ pF Max.	Anti-Parallel	0302	SMS7621-092
0402 Detector Diode	Low Barrier Height, $C_T = 0.22$ pF Max.	Single	0402	SMS7621-040LF
WLAN Detector Diode	Low Barrier Height, $C_T = 0.25$ pF Max.	Single	SC-79	SMS7621-079LF
LNB Series Pair Detector	For Voltage Doubler Detectors	Series Pair	SOT-23	SMS7621-005LF
LNB Reverse Series Pair Detector	For Voltage Doubler Detectors	Reverse Series Pair	SOT-23	SMS7621-006LF
WLAN Detector Diode	Low Barrier Height: $C_T = 0.25$ pF Max.	Unconnected Pair	LGA	SMS7621-517
General Purpose Schottky Diode	8 V, 280–340 mV @ 1 mA	Single	SC-79	SMS3922-079LF
General Purpose Schottky Diode	20 V, 310–370 mV @ 1 mA	Single	SOD-323	SMS3923-011LF
General Purpose Schottky Diode	70 V, 490–550 mV @ 1 mA	Single	SC-79	SMS3924-079LF
Crossover Quad Low Drive Mixer	2 V, 200–270 mV @ 1 mA	Crossover Quad	SOT-143	SMS3926-023LF
Bridge Quad Medium Drive Mixer	2 V, 310–370 mV @ 1 mA	Bridge Quad	SOT-143	SMS3930-021LF

Varactor Diodes

Features

- Design types available:
 - Hyperabrupt junction tuning
 - Abrupt junction tuning
- Available configurations:
 - Single
 - Common cathode
 - Common anode
- Available options:
 - High Q
 - Low series resistance
 - High capacitance ratio
 - Low tuning voltage
 - High voltage breakdown



Skyworks offers over 100 packaged varactor diodes for RF applications, in a wide variety of capacitance versus voltage curves. These quality products are fabricated in our Silicon facilities and plastic surface mount packages. Many diodes are also available as bare die or in ceramic packaging.

Varactor Diodes for VCO, Voltage Tuned Filters and Phase Shifter Applications

Feature/Application	Characteristics	Configuration	Package	Part Number
Low R_S (0.8 Ω) Varactor for VCO	High C_{in} : 18.5 pF @ 1 V, 1.8 pF @ 25 V	Single	SC-79	SMV1130-079LF
Low R_S (0.8 Ω) Varactor for Filter and VCO	High Q: 6.5 pF @ 1 V, 2 pF @ 6 V	Single	SOD-323	SMV1234-011LF
Low R_S (0.5 Ω) Varactor for VCO	Low Voltage: 17 pF @ 1 V, 5.3 pF @ 6 V	Single	SOD-323	SMV1236-011LF
Low R_S (0.6 Ω) Varactor for VCO	High C_{in} : 28.35 pF @ 1 V, 7 pF @ 12 V	Single	SC-79	SMV1145-079LF
Ultra Low R_S (0.3 Ω) Varactor for Filter and VCO	High Q: 6.37 pF @ 1 V, 1.77 pF @ 30 V	Single	SC-79	SMV1413-079LF
Ultra Low R_S (0.3 Ω) Varactor for VCO	Low Voltage: 18.3 pF @ 1 V, 5.2 pF @ 5 V	Single	SC-79	SMV1705-079LF
High Q (1200) Varactor for Filter and VCO	Low R_S : 3.3 pF @ 1 V, 1.1 pF @ 6 V	Single	SOD-323	SMV1233-011LF
High Q (1500) Varactor for Filter and VCO	High C_{in} : 4.4 pF @ 1 V, 0.64 pF @ 8 V	Single	SC-79	SMV1247-079LF
High Q (1500) Varactor for Filter and VCO in 0402	High C_{in} : 4.4 pF @ 1 V, 0.64 pF @ 8 V	Single	0402	SMV1247-040LF
Ultra High Q (3200) Varactor for Filter and VCO	Highest V_b : 1.84 pF @ 1 V, 0.63 pF @ 30 V	Single	SC-79	SMV1405-079LF
Low Capacitance (0.3 pF) Varactor for Filter and VCO	High V_b : 1.5 pF @ 1 V, 0.3 pF @ 20 V	Single	SC-79	SMV2019-079LF
High C_{in} (9:1) Varactor for Filter and VCO	Low Voltage: 18 pF @ 1 V, 1.9 pF @ 8 V	Common Cathode	SOT-23	SMV1213-004LF
High C_{in} (12:1) Varactor for VCO and Phase Shifter	Low Voltage: 18.2 pF @ 1 V, 2 pF @ 8 V	Single	SOD-323	SMV1249-011LF
High C_{in} (12:1) Varactor for VCO and Phase Shifter in 0402	Low Voltage: 18.2 pF @ 1 V, 2 pF @ 8 V	Single	0402	SMV1249-040LF
High C_{in} (12:1) Varactor for VCO and Phase Shifter	Low Voltage: 43.2 pF @ 1 V, 4.25 pF @ 8 V	Single	SC-79	SMV1255-079LF
Ultra High C_{in} (20:1) Varactor for Tuner and Phase Shifter	Highest V_b : 58 pF @ 1 V, 2.68 pF @ 28 V	Single	SC-79	SMV1801-079LF
Ultra High C_{in} (20:1) Varactor for Tuner and Phase Shifter	Highest V_b : 14.25 pF @ 1 V, 0.7 pF @ 30 V	Single	SOD-323	SMV1265-011LF