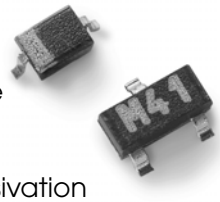
SURFACE MOUNT SOT23 SMPN SERIES PIN DIODES FOR RF SWITCHING AND ATTENUATING

MCE METELICS

FEATURES



Surface Mount Package
- Tape and Reel Available

Reliability
- Gold Metallized Chip
- Silicon Nitride/Glass Passivation

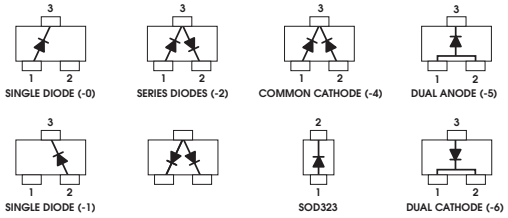
Low Series Resistance
Low Capacitance
Wide Dynamic Range

Specials are available upon request.

DESCRIPTION/APPLICATIONS

These PIN diodes are specifically designed for commercial applications requiring devices in the SOT-23 surface mount package. The series in low profile has options for bulk or tape and reel. This series offers a wide range of specifications and package configurations to give the designer wide flexibility.

Typical applications of these PIN diodes are switches, phase shifters, pulse and amplitude modulators, limiters, leveling circuits and attenuators.



Package Terminal Identification Code

PIN DIODES ELECTRICAL SPECIFICATIONS @ 25°C

Part Number	ID Code*	VBR Min. (V) @10uA	CT Typ. (pF) @1 MHz	Series Resistance @100mA Rs(ohms) Typ f=100 MHz	Series Resistance @10mA Rs(ohms) Typ f=100 MHz	Carrier Lifetime Typ, TL(nS) IF=10mA IR=6mA
PIN ATTENUATOR DIODES						
SMPN7453-SOT23	0 S	200	0.35 @50V	0.80	2.5	2500
SMPN7453-SOT23	1 S	200	0.35 @50V	0.80	2.5	2500
SMPN7453-SOT23	2 ST	200	0.45 @50V	0.80	2.5	2500
SMPN7453-SOT23	3 CA	200	0.45 @50V	0.80	2.5	2500
SMPN7453-SOT23	4 CC	200	0.45 @50V	0.80	2.5	2500
SMPN7380-SOT23	0 S	200	0.35 @50V	1.00	3.0	1500
SMPN7380-SOT23	1 S	200	0.35 @50V	1.00	3.0	1500
SMPN7380-SOT23	2 ST	200	0.45 @50V	1.00	3.0	1500
SMPN7380-SOT23	3 CA	200	0.45 @50V	1.00	3.0	1500
SMPN7380-SOT23	4 CC	200	0.45 @50V	1.00	3.0	1500
PIN SWITCHING DIODES						
SMPN7310-SOT23	0 S	100	0.30 @5V	0.60	1.0	120
SMPN7310-SOT23	1 S	100	0.30 @5V	0.60	1.0	120
SMPN7310-SOT23	2 ST	100	0.40 @5V	0.60	1.0	120
SMPN7310-SOT23	3 CA	100	0.40 @5V	0.60	1.0	120
SMPN7310-SOT23	4 CC	100	0.40 @5V	0.60	1.0	120
SMPN7316-SOT23	0 S	100	0.30 @5V	0.60	1.0	200
SMPN7316-SOT23	1 S	100	0.30 @5V	0.60	1.0	200
SMPN7316-SOT23	2 ST	100	0.40 @5V	0.60	1.0	200
SMPN7316-SOT23	3 CA	100	0.40 @5V	0.60	1.0	200
SMPN7316-SOT23	4 CC	100	0.40 @5V	0.60	1.0	200
PIN GENERAL PURPOSE DIODES						
SMPN7335-SOT23	0 S	200	0.30 @50V	1.50	2.0	500
SMPN7335-SOT23	1 S	200	0.30 @50V	1.50	2.0	500
SMPN7335-SOT23	2 ST	200	0.40 @50V	1.50	2.0	500
SMPN7335-SOT23	3 CA	200	0.40 @50V	1.50	2.0	500
SMPN7335-SOT23	4 CC	200	0.40 @50V	1.50	2.0	500
PIN LOW CAPACITANCE FOR HIGH FREQUENCY APPLICATIONS						
SMPN7320-SOT23	0 S	100	0.20 @10V	2.00	4.0	170
SMPN7320-SOT23	1 S	100	0.20 @10V	2.00	4.0	170
SMPN7320-SOT23	2 ST	100	0.30 @10V	2.00	4.0	170
SMPN7320-SOT23	3 CA	100	0.30 @10V	2.00	4.0	170
SMPN7320-SOT23	4 CC	100	0.30 @10V	2.00	4.0	170

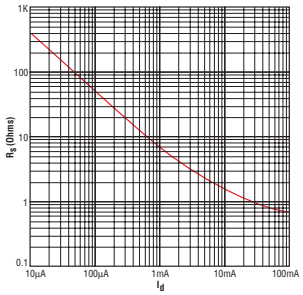
***0,1,S=Single; 2,ST=Series Tee; 3,CA=Common Anode; 4,CC=Common Cathode**

Also available in SOD323 package.

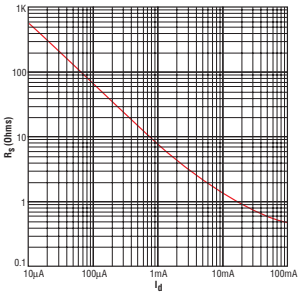
975 Stewart Drive • Sunnyvale, CA 94086 • 408.737.8181 • FAX: 408.733.7645 • www.metelics.com • sales@metelics.com

TYPICAL RESISTANCE CURVES @ 100MHZ

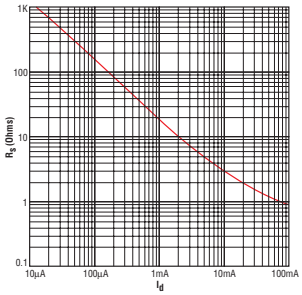
SMPN7335
Frequency=100MHz



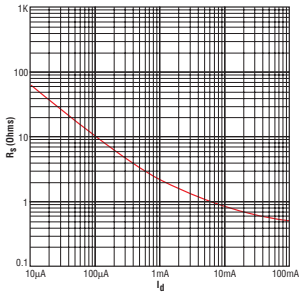
SMPN7453
Frequency=100MHz



SMPN7380
Frequency=100MHz

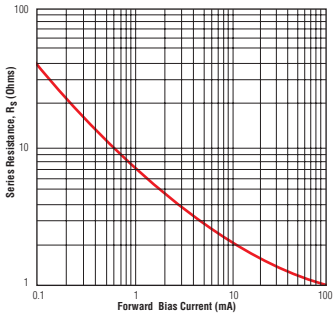


SMPN7316
Frequency=100MHz

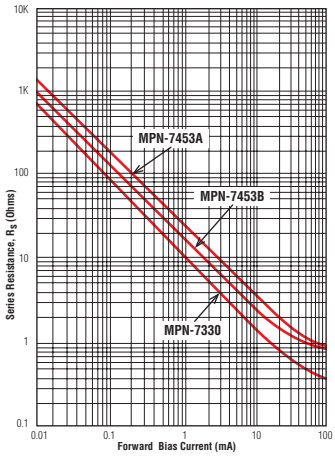


SMPN7310

Frequency=1GHz

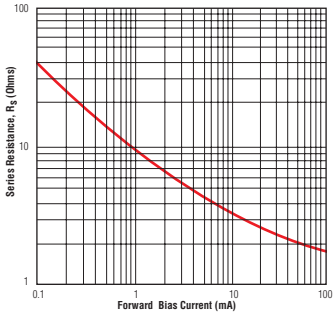


Frequency=100MHz

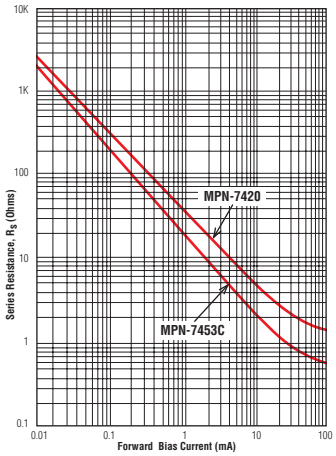


SMPN7320

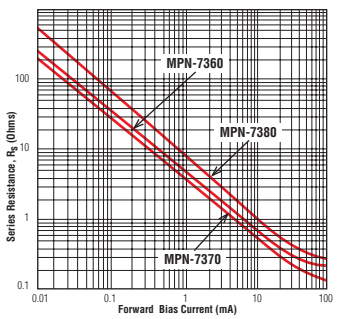
Frequency=1GHz



Frequency=100MHz



Frequency=100MHz



MAXIMUM RATINGS

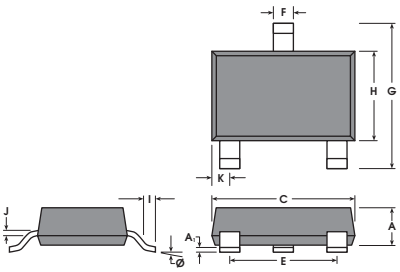
Operating/Storage Temperature Range ... -65°C to +150°C
Max Power Dissipation (per Package) 250mW
Measured in an infinite heat sink at T_{CASE}=25°C).
Derate linearly to zero at 150°C.
Peak inverse Voltage (P_{IV}) ..... Same as V_{BR}
Forward Current (i_F) (1µs pulse) ..... 1 Amp

PACKAGE CHARACTERISTICS

Lead Material ..... Alloy 42
Lead Finish ..... Tin-Lead, 60-40%
Maximum Soldering Temperature ..... 260°C for 5 sec.
Minimum Lead Strength ..... 2 pounds pull
Typical Package Inductance ..... 2 nH
Typical Package Capacitance .... 0.10 pF (opposite leads)

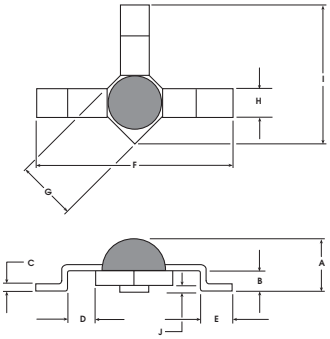
SOT23 PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.79	1.02	0.031	0.040
A_1	0.02	0.10	0.001	0.004
C	2.67	3.05	0.105	0.120
E	1.80	2.00	0.071	0.079
F	0.38	0.54	0.010	0.021
G	2.10	2.50	0.083	0.098
H	1.20	1.40	0.047	0.055
I	0.13	0.25	0.005	0.010
J	0.089	0.15	0.0035	0.059
K	0.44	0.55	0.017	0.022
Ø	0.0	8.0	0.0	0.0



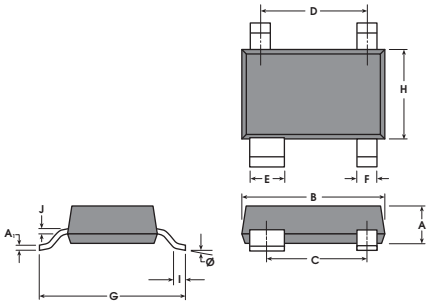
E35SM PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.53	0.76	0.021	0.030
B	0.20	0.36	0.008	0.014
C	0.08	0.13	0.003	0.05
D	0.30	0.46	0.012	0.018
E	0.56	0.71	0.022	0.028
F	3.76	4.01	0.148	0.158
G	1.19	1.35	0.047	0.053
H	0.33	0.43	0.013	0.017
I	2.77	2.92	0.109	0.115
J	0.05	0.15	0.002	0.006



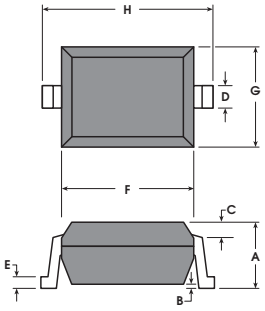
SOT143 PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.79	1.02	0.031	0.040
A_1	0.02	0.10	0.001	0.004
B	2.67	3.05	0.105	0.120
C	1.78	2.03	0.070	0.080
D	1.80	2.00	0.071	0.079
E	0.77	0.94	0.030	0.037
F	0.38	0.54	0.015	0.021
G	2.10	2.50	0.083	0.098
H	1.20	1.40	0.047	0.065
I	0.13	0.25	0.005	0.010
J	0.89	0.15	0.0035	0.0059
Ø	0.0	8.0	0.0	0.8



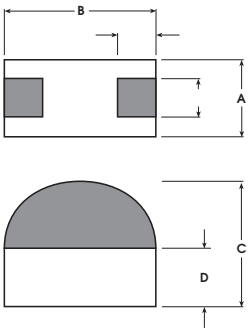
SOD323 PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	—	1.10	0.034	0.043
B	—	0.10	0.003	0.004
C	—	0.20	0.006	0.010
D	0.25	0.40	0.010	0.016
E	0.08	0.15	0.003	0.006
F	1.60	1.90	0.063	0.075
G	1.15	1.45	0.045	0.057
H	2.30	2.70	0.094	0.106



0805 PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.14	1.40	0.045	0.055
B	1.91	2.16	0.075	0.085
C	0.63	0.84	0.025	0.033
D	0.38	0.63	0.015	0.025
E	0.30	0.40	0.012	0.016
F	0.76	1.06	0.030	0.040



E28X PACKAGE OUTLINE

	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.63	0.76	0.025	0.030
B	0.20	0.38	0.008	0.015
C	0.10	0.20	0.004	0.008
D	0.50	0.76	0.020	0.030
E	0.25	0.50	0.010	0.020
F	4.11	4.52	0.162	0.178
G	2.16	2.41	0.085	0.095
H	1.02	1.27	0.040	0.050
I	0.38	0.63	0.015	0.025