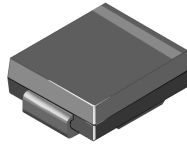


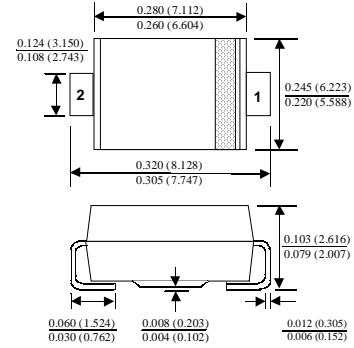
SS32 - S310

Features

- Metal to silicon rectifiers, majority carrier conduction.
- Low forward voltage drop.
- Easy pick and place.
- High surge current capability.



SMC/DO-214AB



3.0 Ampere Schottky Barrier Rectifiers

Absolute Maximum Ratings*

$T_A = 25^\circ\text{C}$ unless otherwise noted

Symbol	Parameter	Value	Units
I_O	Average Rectified Current @ $T_A = 75^\circ\text{C}$	3.0	A
$I_f(\text{surge})$	Peak Forward Surge Current 8.3 ms single half-sine-wave Superimposed on rated load (JEDEC method)	100	A
P_D	Total Device Dissipation Derate above 25°C	2.27 18	W mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient**	55	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	17	$^\circ\text{C}/\text{W}$
T_{stg}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$
T_J	Operating Junction Temperature	-55 to +150	$^\circ\text{C}$

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

**Device mounted on FR-4 PCB 0.55 x 0.55" (14 x 14 mm).

Electrical Characteristics

$T_A = 25^\circ\text{C}$ unless otherwise noted

Parameter	Device								Units
	32	33	34	35	36	38	39	310	
Peak Repetitive Reverse Voltage	20	30	40	50	60	80	90	100	V
Maximum RMS Voltage	14	21	28	35	42	56	63	70	V
DC Reverse Voltage (Rated V_R)	20	30	40	50	60	80	90	100	V
Maximum Reverse Current $T_A = 25^\circ\text{C}$	0.5								mA
@ rated V_R $T_A = 100^\circ\text{C}$	20			10					mA
Maximum Forward Voltage @ 3.0 A	500			750		850			mV

RESISTIVE OR
INDUCTIVE LOAD
P.C.B. MOUNTED
ON 0.55 x 0.55"
(14 x 14) mm
COPPER PAD AREAS

Ambient Temperature (°C)	Forward Current (A)
0	3.0
25	3.0
50	3.0
75	3.0
100	2.0
125	1.0
150	0.0

Number of Cycles at 60Hz	Peak Forward Surge Current (A)
1	100
2	80
5	60
10	50
20	40
50	25
100	20

The graph shows the forward current (A) on a logarithmic y-axis (0.01 to 50) versus forward voltage (V) on a linear x-axis (0 to 1.6). Three sets of curves are plotted for different temperatures: $T_A = 125^\circ\text{C}$ (top), $T_A = 25^\circ\text{C}$ (middle), and $T_A = 150^\circ\text{C}$ (bottom). The curves for SS32-SS34 and SS35-S310 are very close, while SS36-S310 shows a distinct shift to lower currents. The pulse width is 300 μs and the duty cycle is 2%.

Figure 1 is a log-linear graph showing the reverse current (mA) versus the percent of rated peak reverse voltage (%) for two types of diodes, SS32-SS34 and SS35-S310, at three different temperatures: $T_A = 125^\circ\text{C}$, $T_A = 75^\circ\text{C}$, and $T_A = 25^\circ\text{C}$. The y-axis represents Reverse Current (mA) on a logarithmic scale from 0.001 to 20. The x-axis represents Percent of Rated Peak Reverse Voltage (%) on a linear scale from 0 to 140. The graph shows that reverse current increases with both voltage and temperature. For each temperature, the SS32-SS34 diode exhibits higher reverse current than the SS35-S310 diode. At $T_A = 125^\circ\text{C}$, the reverse current for SS32-SS34 is approximately 10 mA at 120% voltage, while for SS35-S310 it is approximately 1 mA. At $T_A = 75^\circ\text{C}$, the reverse current for SS32-SS34 is approximately 0.5 mA at 120% voltage, and for SS35-S310 it is approximately 0.1 mA. At $T_A = 25^\circ\text{C}$, the reverse current for both diodes is below 0.1 mA at 120% voltage.

A log-log plot showing the junction capacitance in picofarads (pF) on the y-axis versus the reverse voltage in volts (V) on the x-axis. The y-axis ranges from 10 to 1000 pF, and the x-axis ranges from 0.1 to 100 V. Two curves are plotted: one for SS32-SS34 diodes, which start at approximately 1000 pF at 0.1 V and decrease to about 150 pF at 30 V; and another for SS35-S310 diodes, which start at approximately 600 pF at 0.1 V and decrease to about 80 pF at 50 V. Both curves show a more rapid decrease in capacitance as voltage increases beyond 10 V.

Reverse Voltage (V)	Junction Capacitance (pF) - SS32-SS34	Junction Capacitance (pF) - SS35-S310
0.1	1000	600
1	1000	400
10	400	150
30	150	-
50	-	80

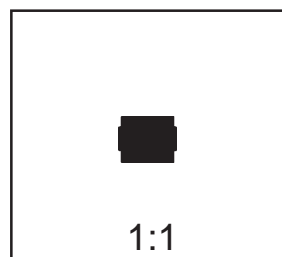
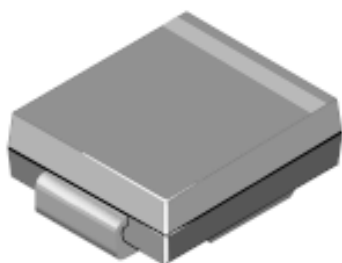
TRANSIENT THERMAL IMPEDANCE θ CW

T. PULSE DURATION (sec.)

SMC/DO-214AB Package Dimensions



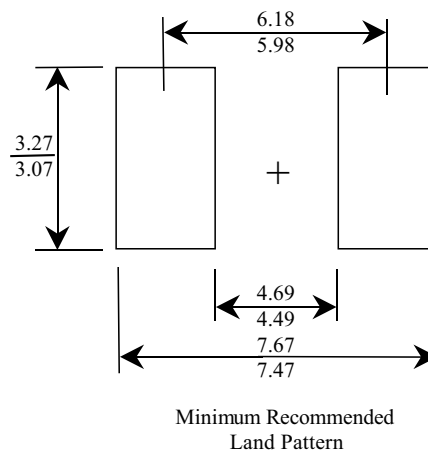
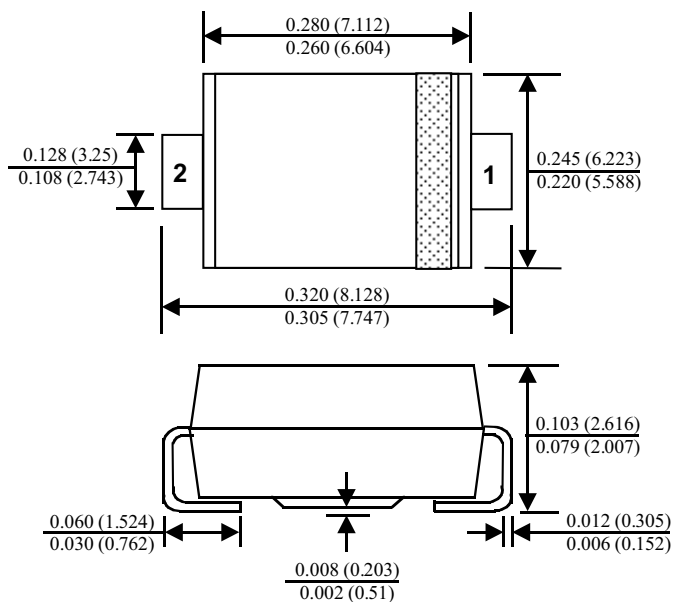
SMC/DO-214AB (FS PKG Code P7)



Scale 1:1 on letter size paper

Dimensions shown below are in:
inches [millimeters]

Part Weight per unit (gram): 0.21



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