

**Product Summary** (@ T<sub>A</sub> = +25°C)

V <sub>RRM</sub> (V)	I <sub>o</sub> (A)	V <sub>F(MAX)</sub> (V)	I <sub>R(MAX)</sub> (μA)
40	3	0.50	200

**Description and Applications**

For use in low-voltage, high-frequency inverters, freewheeling, DC-DC converters, and polarity applications.

- SMPS
- AC-DC
- DC-DC Converter
- Freewheeling Diodes
- Reverse Polarity Protection
- Blocking Diodes

**Features and Benefits**

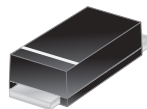
- Low Leakage Current
- Soft, Fast Switching Capability
- Low Power Loss, High Efficiency
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. “Green” Device (Note 3)**
- **For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](#) or your local Diodes representative.**

<https://www.diodes.com/quality/product-definitions/>

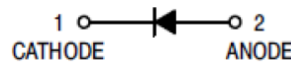
**Mechanical Data**

- Case: SMA-FS
- Case Material: Molded Plastic, “Green” Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead Free Plating (Matte Tin Finish). Solderable per MIL-STD-202, Method 208 Ⓜ3
- Polarity Indicator: Cathode Band
- Weight: 0.033 grams (Approximate)

**SMA-FS**



Top View



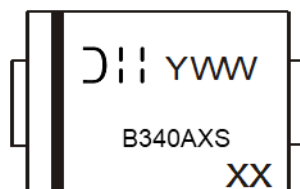
Schematic View

**Ordering Information** (Note 4)

Part Number	Compliance	Case	Packaging
B340AXS-13	Commercial	SMA-FS	10,000/Tape & Reel

- Notes:
1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

**Marking Information** (Note 5)



B340AXS = Product Type Marking Code  
 DII = Manufacturer's Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 1 for 2021)  
 WW = Week Code 01 to 52  
 XX = Foundry and Assembly Site

Note: 5. Device has a cathode band (as shown above) and may also have a cathode notch.

### Maximum Ratings (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	40	V
Working Peak Reverse Voltage	V <sub>RWM</sub>		
DC Blocking Voltage	V <sub>RM</sub>		
Average Rectified Output Current	I <sub>O</sub>	3	A
Non-Repetitive Peak Forward Surge Current 1ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	65	A

### Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Case (Note 6)	R <sub>θJC</sub>	55	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R <sub>θJA</sub>	145	
Thermal Resistance Junction to Terminal (Note 6)	R <sub>θJT</sub>	40	
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C

Note: 6. Device mounted on FR-4 substrate, 0.4"×0.5", 2oz, single-sided, PC boards with 0.2"×0.25" copper pad.  
The heat generated must be less than the thermal conductivity from junction to case:  $dP_D/dT_J < 1/R_{\theta JC}$  or junction to ambient:  $dP_D/dT_J < 1/R_{\theta JA}$ .

### Electrical Characteristics (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage Drop	V <sub>F</sub>	—	0.45	0.50	V	I <sub>F</sub> = 3.0A, T <sub>J</sub> = +25°C
		—	0.39	—		I <sub>F</sub> = 3.0A, T <sub>J</sub> = +100°C
Leakage Current (Note 7)	I <sub>R</sub>	—	25	200	μA	V <sub>R</sub> = 40V, T <sub>J</sub> = +25°C
		—	3	20		mA
Total Capacitance	C <sub>T</sub>	—	285	—	pF	V <sub>R</sub> = 4V, f = 1MHz

Note: 7. Short duration pulse test used to minimize self-heating effect.

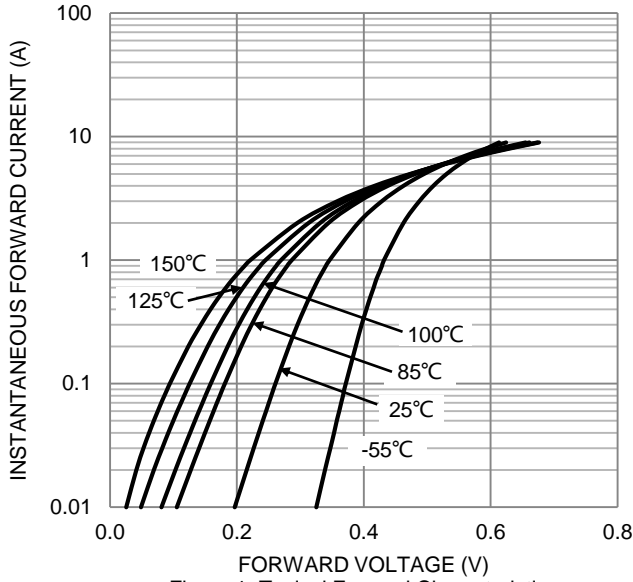


Figure 1. Typical Forward Characteristics

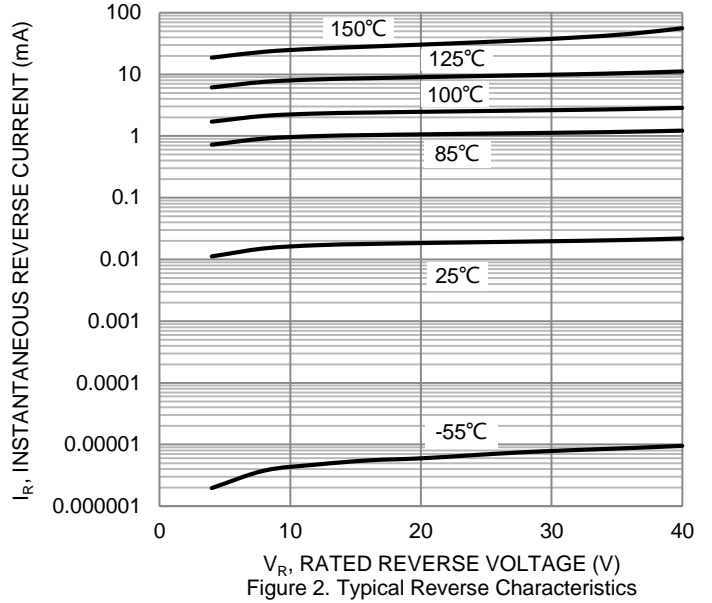


Figure 2. Typical Reverse Characteristics

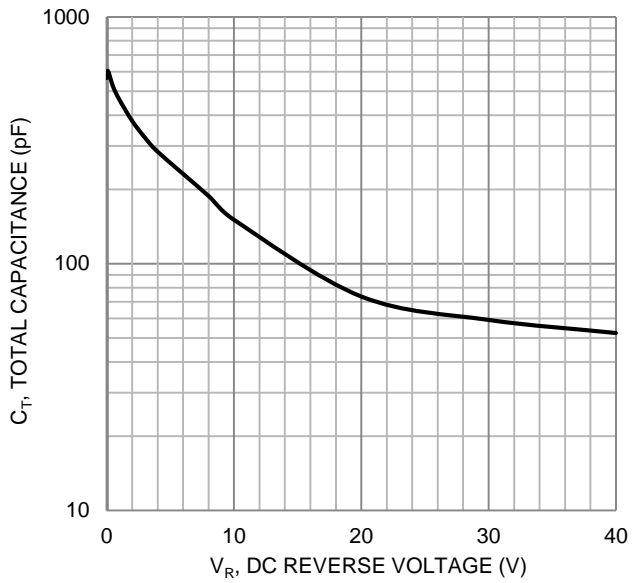


Figure 3. Total Capacitance vs. Reverse Voltage

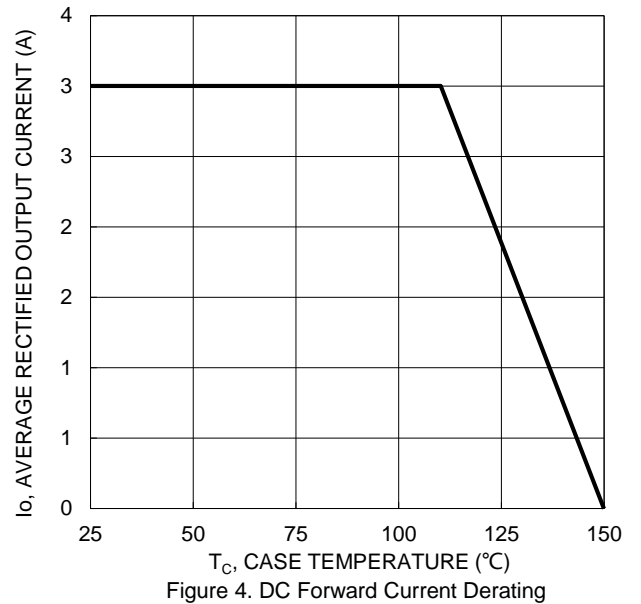
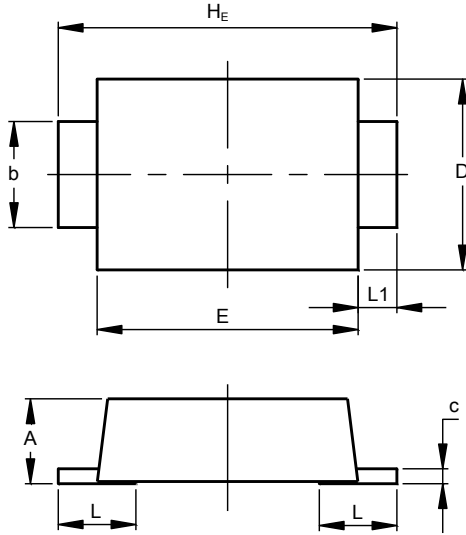


Figure 4. DC Forward Current Derating

**Package Outline Dimensions**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SMA-FS**

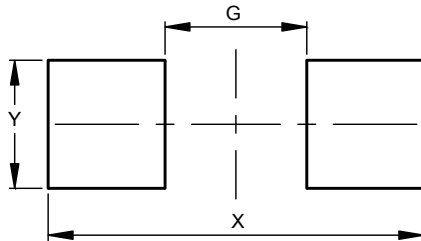


SMA-FS		
Dim	Min	Max
A	0.90	1.20
b	1.30	1.50
c	0.11	0.21
D	2.30	2.70
E	3.30	3.70
$H_E$	4.40	4.80
L	0.70	1.10
L1	0.45	0.65
All Dimensions in mm		

**Suggested Pad Layout**

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**SMA-FS**



Dimensions	Value (in mm)
G	2.10
X	5.30
Y	1.77

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