

Product Summary (@ T_A = +25°C)

V _{RRM} (V)	I _o (A)	V _{F(MAX)} (V)	I _{R(MAX)} (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/>

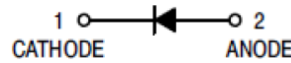
Mechanical Data

- 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



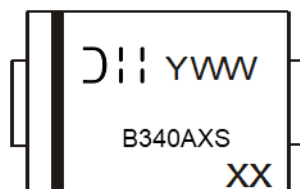
Schematic View

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_A = +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 _{RRM}	40	V
Working Peak Reverse Voltage	V _{RWM}		
DC Blocking Voltage	V _{RM}		
Average Rectified Output Current	I _O	3	A
Non-Repetitive Peak Forward Surge Current 1ms Single Half Sine-Wave Superimposed on Rated Load	I _{FSM}	65	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Thermal Resistance Junction to Case (Note 6)	R _{θJC}	55	°C/W
Thermal Resistance Junction to Ambient (Note 6)	R _{θJA}	145	
Thermal Resistance Junction to Terminal (Note 6)	R _{θJT}	40	
Operating and Storage Temperature Range	T _J , T _{STG}	-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_A = +25°C, unless otherwise specified.)

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

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

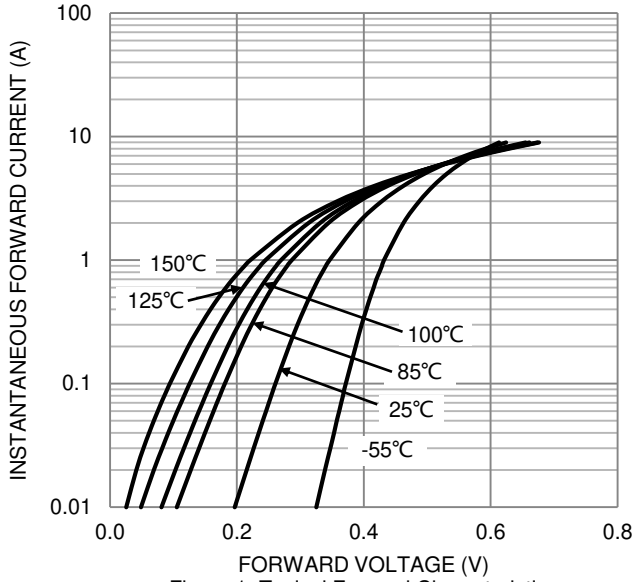


Figure 1. Typical Forward Characteristics

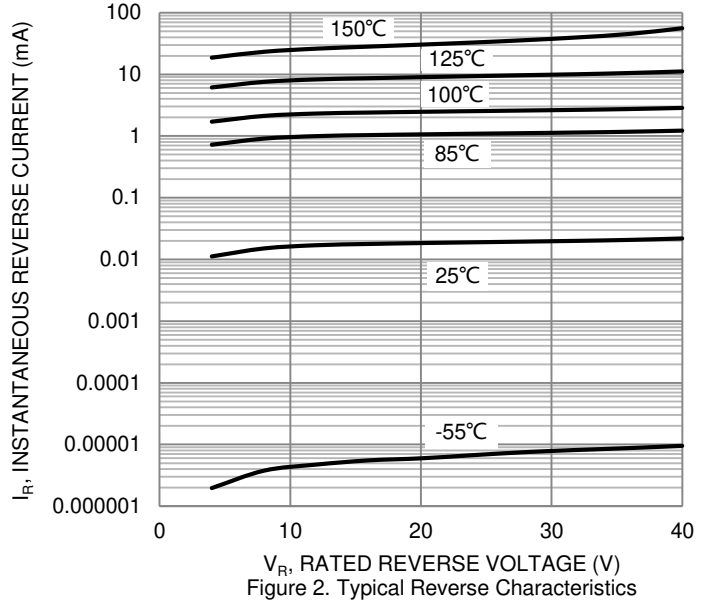


Figure 2. Typical Reverse Characteristics

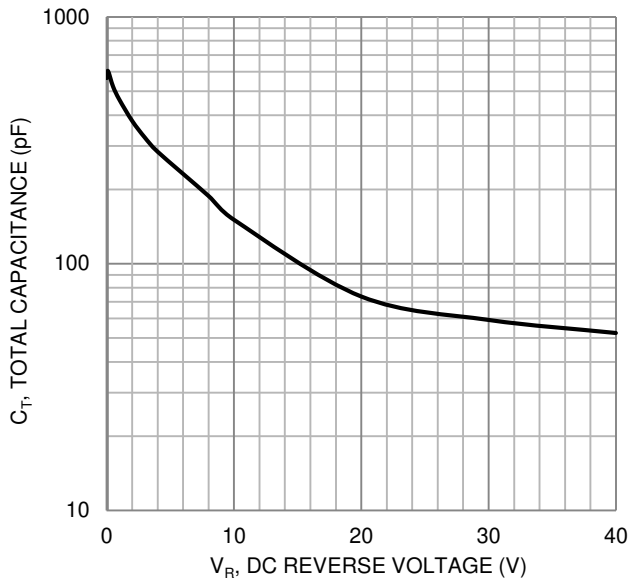


Figure 3. Total Capacitance vs. Reverse Voltage

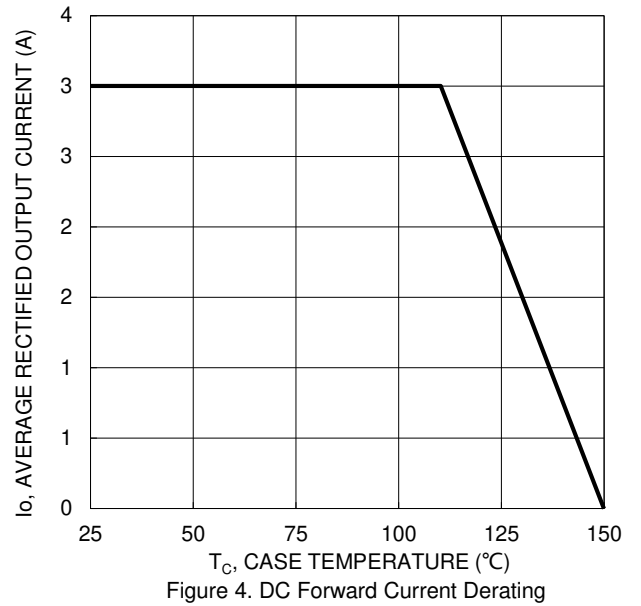
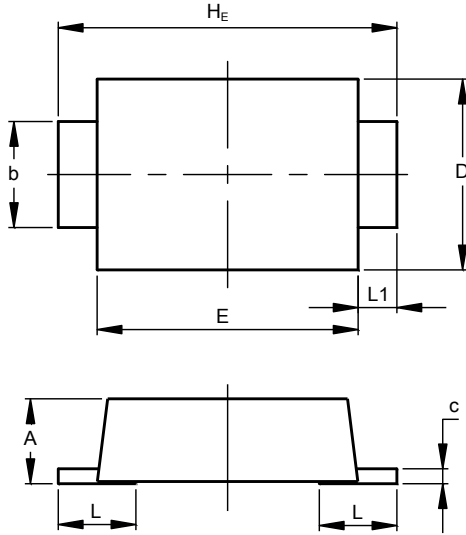


Figure 4. DC Forward Current Derating

Package Outline Dimensions

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

SMA-FS

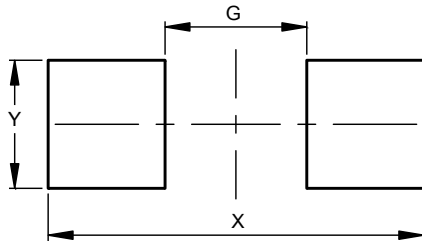


SMA-FS		
Dim	Min	Max
A	0.90	1.20
b	1.30	1.50
c	0.11	0.21
D	2.30	2.70
E	3.30	3.70
H_E	4.40	4.80
L	0.70	1.10
L1	0.45	0.65
All Dimensions in mm		

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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