THE DATASHEET OF

FAN5361UC182X

SURFACE-MOUNT SCHOTTKY BARRIER DIODE

Product Summary @T_A = +25°C

V_{RRM} (V)	I_O (mA)	V_F Max (V)	I_R Max (µA)
40	200	1.0	0.2

Features and Benefits

- Low Forward Voltage Drop
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The BAS40Q/ -04Q/ -05Q/ -06Q are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF16949 certified facilities.**
  https://www.diodes.com/quality/product-definitions/

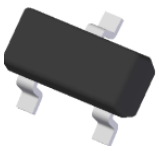
Description

200mA surface-mount Schottky Barrier Diode in SOT23 (Standard) package, offers low forward voltage drop and fast switching capability, designed with PN Junction Guard Ring for Transient and ESD Protection, totally lead-free finish and RoHS compliant, "Green" device.

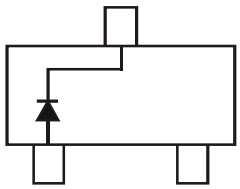
Mechanical Data

- Package: SOT23
- Package Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead-Free Plating (Matte Tin Finish Annealed over Alloy 42 Leadframe). Solderable per MIL-STD-202, Method 208 e3
- Polarity: See Diagrams Below
- Weight: 0.008 grams (Approximate)

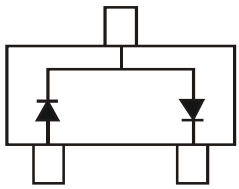
SOT23 (Standard)



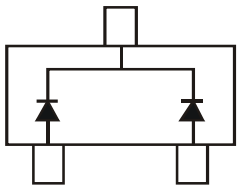
Top View



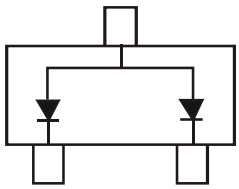
BAS40
BAS40Q



BAS40-04
BAS40-04Q



BAS40-05
BAS40-05Q



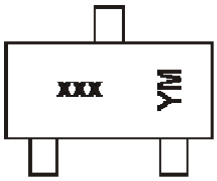
BAS40-06
BAS40-06Q

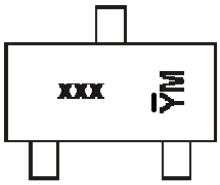
Ordering Information (Notes 4 & 5)

Part Number	Package	Packing	
		Qty.	Carrier
BAS40-7-F / BAS40Q-7-F	SOT23 (Standard)	3000	Tape & Reel
BAS40-04-7-F / BAS40-04Q-7-F	SOT23 (Standard)	3000	Tape & Reel
BAS40-05-7-F / BAS40-05Q-7-F	SOT23 (Standard)	3000	Tape & Reel
BAS40-06-7-F / BAS40-06Q-7-F	SOT23 (Standard)	3000	Tape & Reel
BAS40Q-13-F	SOT23 (Standard)	10000	Tape & Reel
BAS40-04Q-13-F	SOT23 (Standard)	10000	Tape & Reel
BAS40-05-13-F / BAS40-05Q-13-F	SOT23 (Standard)	10000	Tape & Reel
BAS40-06-13-F / BAS40-06Q-13-F	SOT23 (Standard)	10000	Tape & Reel

Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant.
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/.
5. Products manufactured with date code V9 (week 33, 2008) and newer are built with green molding compound. Products manufactured prior to date code V9 are built with non-green molding compound and may contain halogens or Sb_2O_3 fire retardants.

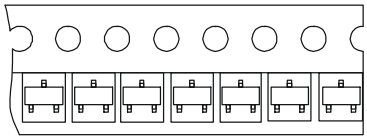
Marking Information





xxx = Product Type Marking Code
K43 = BAS40/Q
K44 = BAS40-04/Q
K45 = BAS40-05/Q
K46 = BAS40-06/Q

YM & $\overline{Y}$M= Date Code Marking
Y & $\overline{Y}$ = Year (ex: L = 2024)
M = Month (ex: D = December)



Date Code Key

Year	2004	-	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Code	R	-	L	M	N	P	R	S	T	U	V	W

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Code	1	2	3	4	5	6	7	8	9	O	N	D

Maximum Ratings (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	40	V
Forward Continuous Current (Note 6)	I_{FM}	200	mA
Forward Surge Current (Note 6) @ t < 1.0s	I_{FSM}	600	mA

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 6)	P_D	350	mW
Thermal Resistance, Junction to Ambient Air (Note 6)	$R_{\theta JA}$	357	°C/W
Operating Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

Electrical Characteristics (@T_A = +25°C, unless otherwise specified.)

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 7)	$V_{(BR)R}$	40	—	—	V	I_R = 10µA
Forward Voltage	V_F	—	—	380 1000	mV	t_p < 300µs, I_F = 1.0mA t_p < 300µs, I_F = 40mA
Reverse Leakage Current (Note 7)	I_R	—	20	200	nA	t_p < 300µs, V_R = 30V
Total Capacitance	C_T	—	4.0	5.0	pF	V_R = 0V, f = 1.0MHz
Reverse Recovery Time	t_{rr}	—	—	5.0	ns	I_F = I_R = 10mA to I_R = 1.0mA R_L = 100Ω

Notes: 6. Part mounted on FR-4 board with recommended pad layout, which can be found on our website at http://www.diodes.com/package-outlines.html.
7. Short duration pulse test used to minimize self-heating effect.

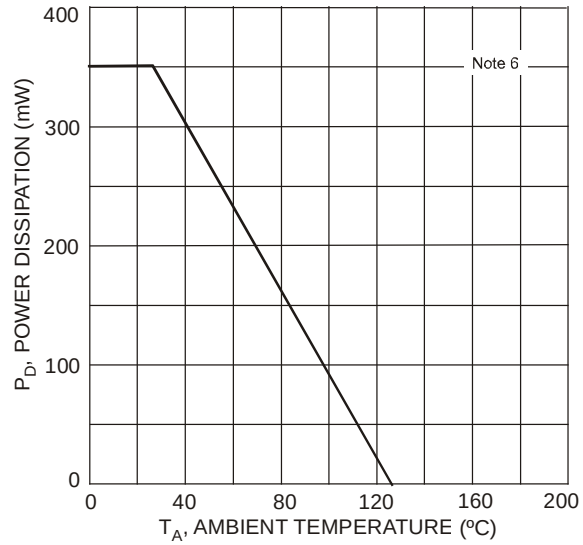


Figure 1 Power Derating Curve, Total Package

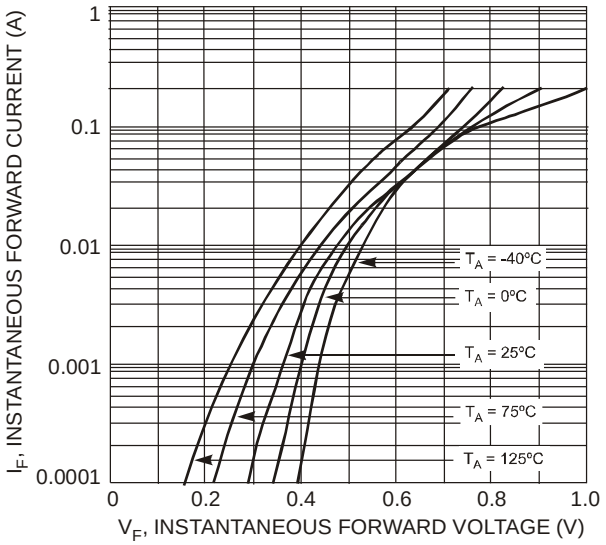


Figure 2 Typical Forward Characteristics

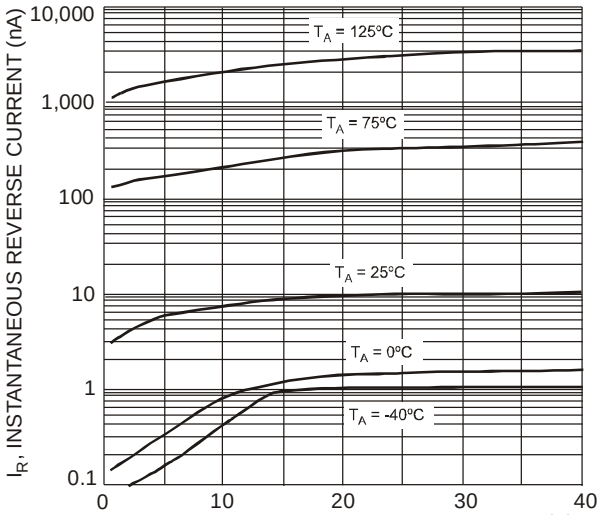


Figure 3 Typical Reverse Characteristics

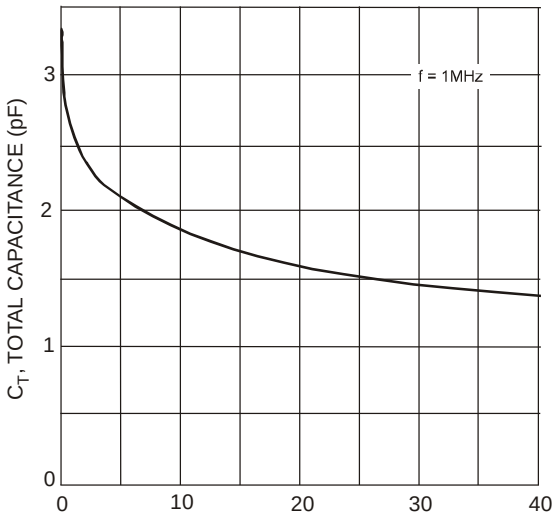
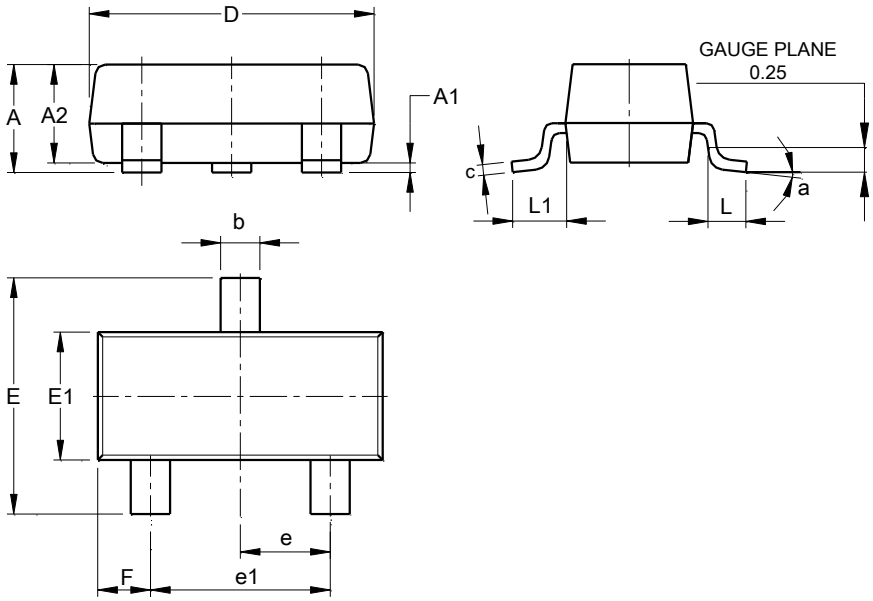


Figure 4 Total Capacitance vs. Reverse Voltage

Package Outline Dimensions

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

SOT23 (Standard)

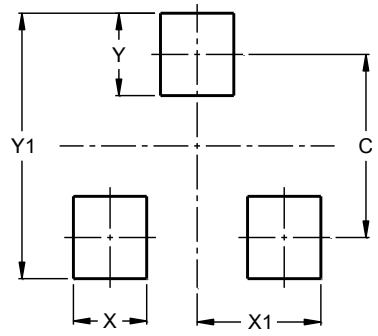


SOT23 (Standard)			
Dim	**Min**	**Max**	**Typ**
A	0.90	1.15	1.025
A1	0.00	0.10	0.05
A2	0.85	1.10	0.975
b	0.30	0.51	0.40
c	0.080	0.202	0.11
D	2.80	3.00	2.90
E	2.25	2.55	2.40
E1	1.20	1.40	1.30
e	0.89	1.03	0.915
e1	1.78	2.05	1.83
F	0.40	0.60	0.535
L1	0.45	0.61	0.55
L	0.25	0.55	0.40
a	0°	8°	--
All Dimensions in mm			

Suggested Pad Layout

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

SOT23 (Standard)



Dimensions	Value (in mm)
C	2.0
X	0.8
X1	1.35
Y	0.9
Y1	2.9

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