



BAS116H-Q

Low leakage switching diode

19 March 2025

Product data sheet

1. General description

Low leakage switching diode, encapsulated in a SOD123F small and flat lead Surface-Mounted Device (SMD) plastic package.

2. Features and benefits

- Small and flat lead SMD plastic package
- Low leakage current
- Excellent coplanarity and improved thermal behavior
- Qualified according to AEC-Q101 and recommended for use in automotive applications

3. Applications

- General-purpose switching

4. Quick reference data



Table 1. Quick reference data

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
I_F	forward current	pulsed; $t_p \leq 300 \mu s$; $\delta \leq 0.02$; $T_{amb} = 25^\circ C$	[1]	-	-	215	mA
I_R	reverse current	$V_R = 75 V$; pulsed; $T_j = 25^\circ C$		-	0.003	5	nA
V_R	reverse voltage	$T_j = 25^\circ C$		-	-	75	V
t_{rr}	reverse recovery time	$I_F = 10 mA$; $I_R = 10 mA$; $R_L = 100 \Omega$; $I_{R(meas)} = 1 mA$; $T_{amb} = 25^\circ C$		-	0.8	3	μs

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

5. Pinning information

Table 2. Pinning information

Pin	Symbol	Description	Simplified outline	Graphic symbol
1	K	Cathode	 SOD123F	 sym001
2	A	Anode		

6. Ordering information

Table 3. Ordering information

Type number	Package		
	Name	Description	Version
BAS116H-Q	SOD123F	plastic, surface-mounted package; 2 leads; 2.6 mm x 1.6 mm x 1.1 mm body	SOD123F

7. Marking

Table 4. Marking codes

Type number	Marking code
BAS116H-Q	B1

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit
V _{RRM}	repetitive peak reverse voltage	T _j = 25 °C		-	85	V
V _R	reverse voltage			-	75	V
I _F	forward current	pulsed; t _p ≤ 300 μs; δ ≤ 0.02; T _{amb} = 25 °C	[1]	-	215	mA
I _{FSM}	non-repetitive peak forward current	t _p = 1 μs; square wave; T _{j(init)} = 25 °C		-	4	A
		t _p = 1 ms; square wave; T _{j(init)} = 25 °C		-	1	A
		t _p = 1 s; square wave; T _{j(init)} = 25 °C		-	0.5	A
I _{FRM}	repetitive peak forward current			-	500	mA
P _{tot}	total power dissipation	T _{amb} ≤ 25 °C	[1] [2] [3]	-	375	mW
Per device, one diode loaded						
T _j	junction temperature			-	150	°C
T _{amb}	ambient temperature			-65	150	°C
T _{stg}	storage temperature			-65	150	°C

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
[2] Reflow soldering is the only recommended soldering method.
[3] Soldering point of cathode tab

9. Thermal characteristics

Table 6. Thermal characteristics

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	In free air	[1] [2]	-	-	330	K/W
$R_{th(j-sp)}$	thermal resistance from junction to solder point		[3]	-	-	70	K/W

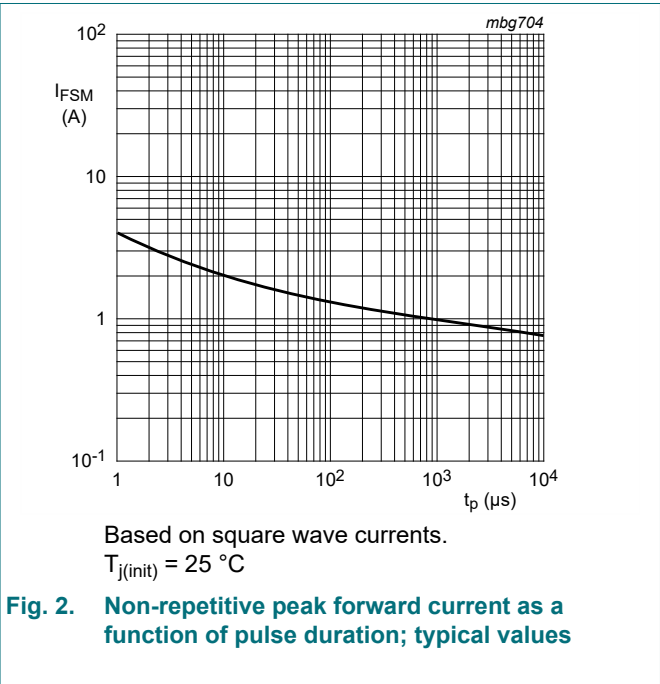
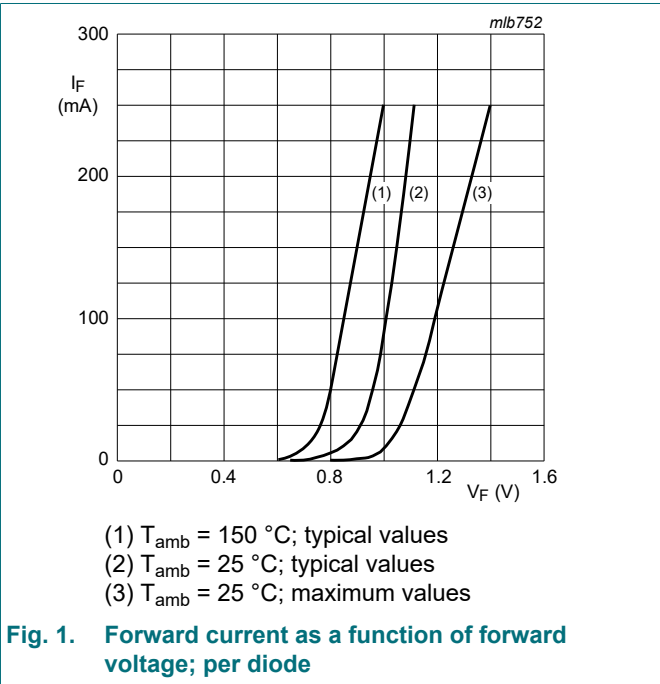
- [1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.
[2] Reflow soldering is the only recommended soldering method.
[3] Soldering point of cathode tab.

10. Characteristics

Table 7. Characteristics

$T_{amb}=25^{\circ}C$ unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
V_F	forward voltage	$I_F = 1\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_j = 25\text{ }^{\circ}C$		-	-	0.9	V
		$I_F = 10\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_j = 25\text{ }^{\circ}C$		-	-	1	V
		$I_F = 50\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_j = 25\text{ }^{\circ}C$		-	-	1.1	V
		$I_F = 150\text{ mA}$; $t_p \leq 300\text{ }\mu\text{s}$; $\delta \leq 0.02$; $T_j = 25\text{ }^{\circ}C$		-	-	1.25	V
I_R	reverse current	$V_R = 75\text{ V}$; pulsed; $T_j = 25\text{ }^{\circ}C$		-	0.003	5	nA
		$V_R = 75\text{ V}$; pulsed; $T_j = 150\text{ }^{\circ}C$		-	3	80	nA
C_d	diode capacitance	$V_R = 0\text{ V}$; $f = 1\text{ MHz}$; $T_j = 25\text{ }^{\circ}C$		-	2	-	pF
t_{rr}	reverse recovery time	$I_F = 10\text{ mA}$; $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; $I_{R(meas)} = 1\text{ mA}$; $T_{amb} = 25\text{ }^{\circ}C$		-	0.8	3	μs



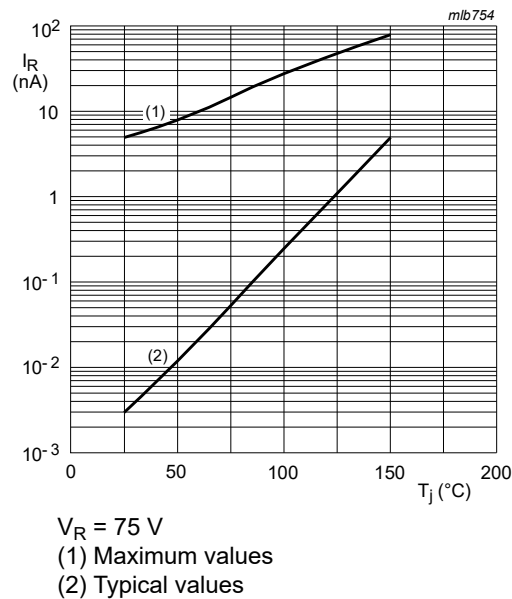


Fig. 3. Reverse current as a function of junction temperature

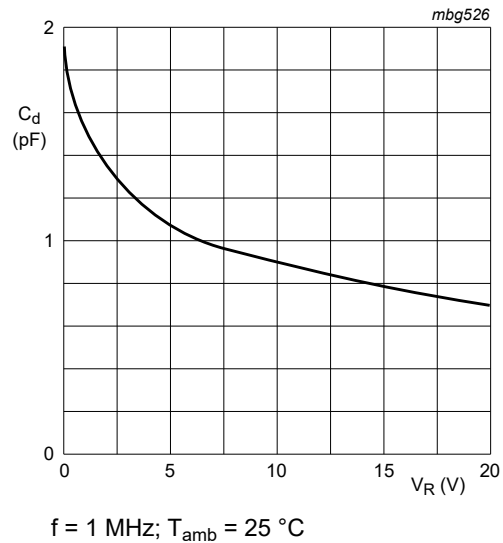
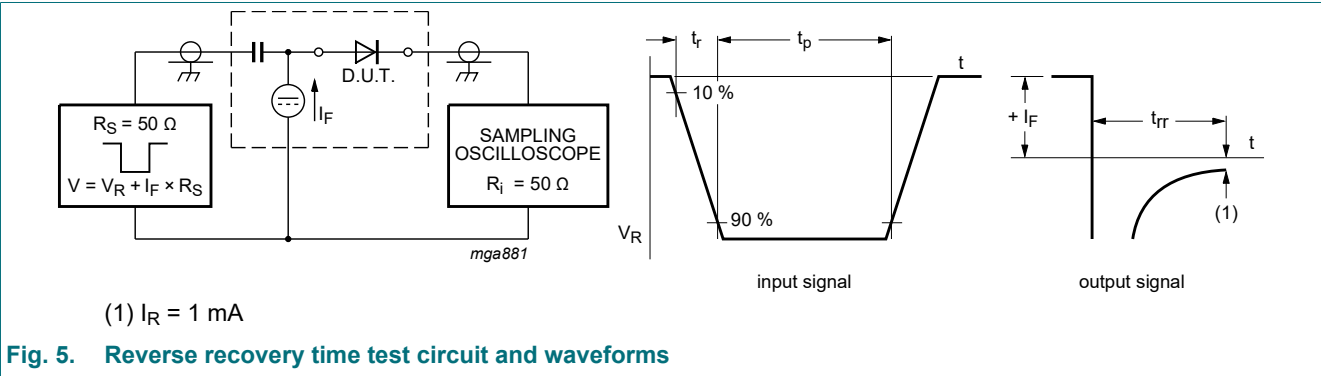


Fig. 4. Diode capacitance as a function of reverse voltage; typical values

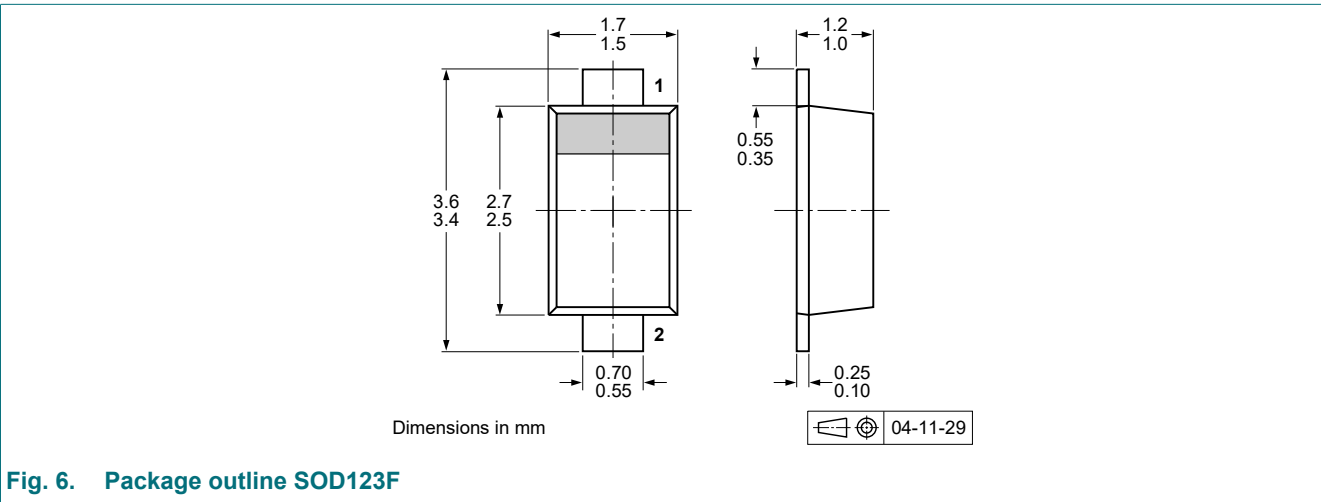
11. Test information



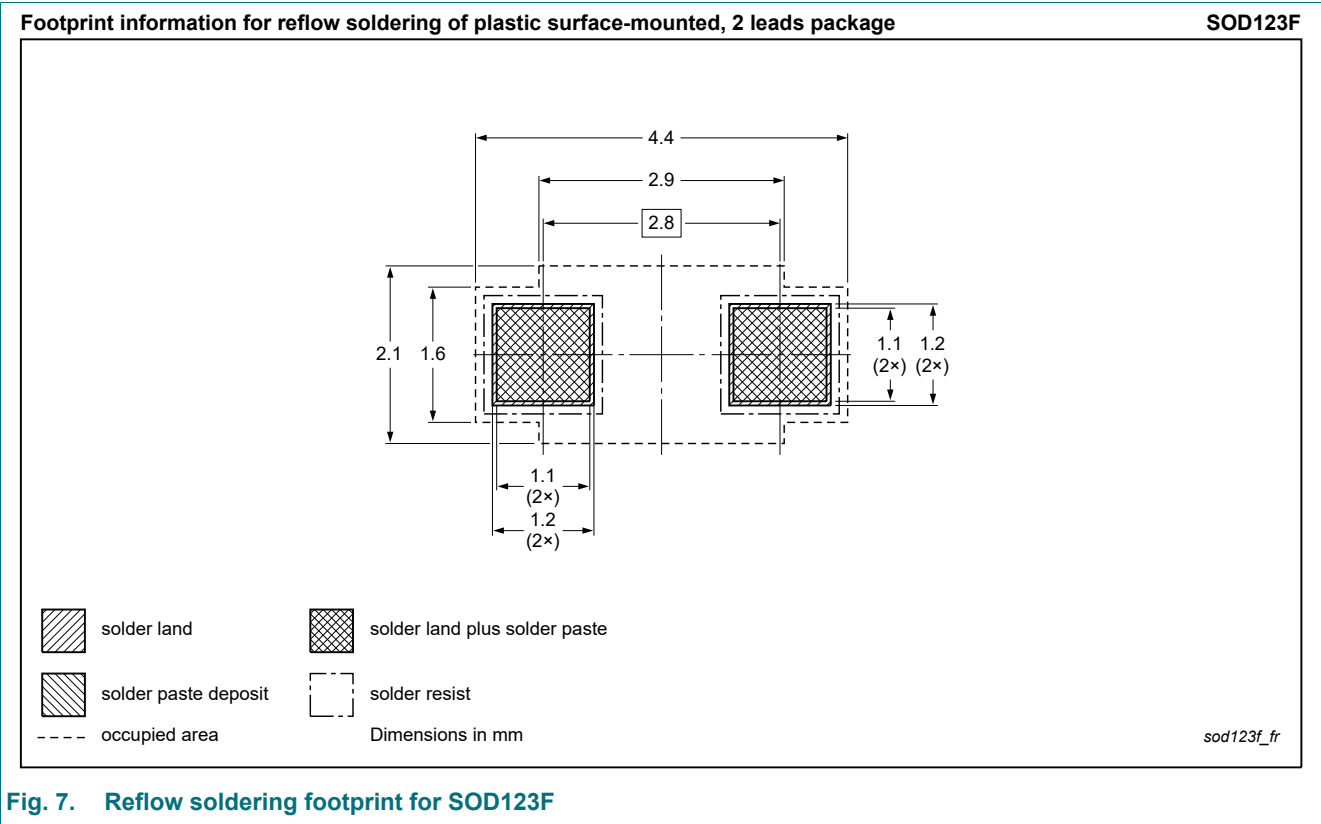
Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard *Q101 - Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline



13. Soldering



14. Revision history

Table 8. Revision history

Data sheet ID	Release date	Data sheet status	Change notice	Supersedes
BAS116H-Q v.1	20250319	Product data sheet	-	-

15. Legal information

Data sheet status

Document status [1][2]	Product status [3]	Definition
Objective [short] data sheet	Development	This document contains data from the objective specification for product development.
Preliminary [short] data sheet	Qualification	This document contains data from the preliminary specification.
Product [short] data sheet	Production	This document contains the product specification.

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