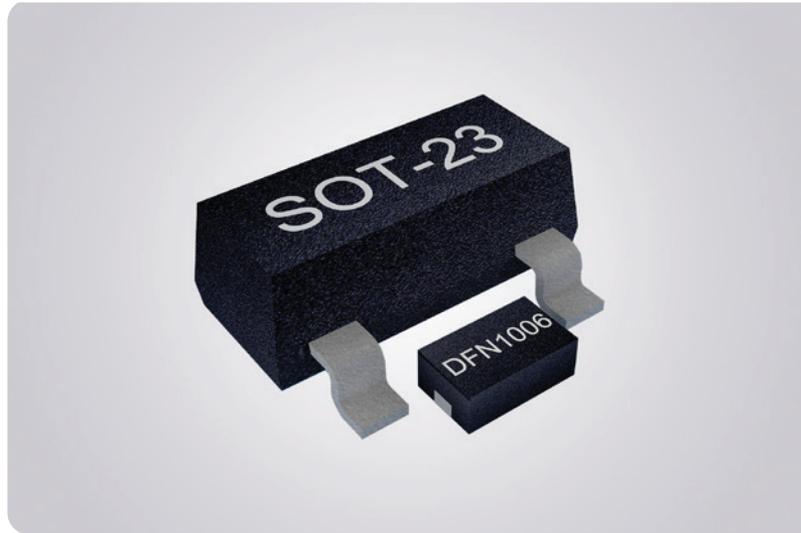




The DNA of tech.™

DIODES**BAS16L, BAS40L**

Small Signal 40 V Schottky and 100 V Switching Diodes in Ultra Compact DFN1006-2A Package with Visible and Wettable Side Terminals for Commercial and Automotive Applications

**KEY BENEFITS**

- Leadless ultra small DFN1006-2A package (1 mm × 0.6 mm × 0.45 mm) with wettable flanks
- Power dissipation better than SOT-23
- Available in an AEC-Q101 qualified versions
- Surface-mounted device (SMD) plastic package with visible and sidewall plated / wettable flanks
- Designed to save space and improve thermal performance
- BAS40L is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- Moisture sensitivity level (MSL) of 1 in accordance with J-STD-020
- UL 94 V-0 flammability rating
- Support automated optical inspection (AOI) for automotive systems
- Soldering can be checked by standard vision inspection; no X-ray is required
- RoHS-compliant, halogen-free, and Vishay Green

APPLICATIONS

- Standard switching and Schottky diodes for automotive and industrial applications

RESOURCES

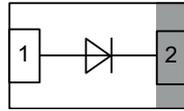
- Datasheets: BAS16L (www.vishay.com/ppg?86187) ; BAS40L (www.vishay.com/ppg?86189)
- Application note: Soldering Recommendations for DFN Packages (www.vishay.com/doc?86198)
- For technical questions, contact:
DiodesAmericas@vishay.com, DiodesEurope@vishay.com, DiodesAsia@vishay.com
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS
COMPLIANTHALOGEN
FREEGREEN
(5-2008)



The DNA of tech.™

Small Signal 40 V Schottky and 100 V Switching Diodes in Ultra Compact DFN1006-2A Package with Visible and Wettable Side Terminals for Commercial and Automotive Applications



FEATURES

- Silicon epitaxial planar diode
- Fast switching diode
- Leadless ultra small DFN1006-2A package (1 mm × 0.6 mm × 0.45 mm)
- Power dissipation better than SOT-23
- Surface-mounted device (SMD) plastic package with visible and sidewall plated / wettable flanks
- Soldering can be checked by standard visual inspection. No X-ray inspection necessary to meet automotive AOI requirements
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE Available



RoHS COMPLIANT HALOGEN FREE GREEN (5-2008)

LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: DFN1006-2A

Weight: 0.83 mg

Molding compound flammability rating: UL 94 V-0

Terminals: high temperature soldering guaranteed: Peak temperature max. 260 °C

Packaging codes / options:

08/10K per 7" reel (8 mm tape)

PARTS TABLE

PART	ORDERING CODE	AEC-Q101 QUALIFIED	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAS16L	BAS16L-G3-08	no	Single	.D	Tape and reel
	BAS16L-HG3-08	yes			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	100	V
Forward current	on FR-4 board with recommended soldering footprint	I _F	250	mA
Non repetitive forward current ⁽¹⁾	t _p = 1 μs	I _{FSM}	9	A
	t _p = 1 ms		1.7	
	t _p = 1 s		0.5	
Repetitive peak forward current	T _L = 100 °C, t _p ≤ 1 ms, D = 0.05	I _{FRM}	500	mA
Power dissipation	on FR-4 board with recommended soldering footprint	P _{tot}	300	mW
	R _{thJL} = 100 K/W		1250	mW

Note

⁽¹⁾ Square wave, T_j = 25 °C prior to surge

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

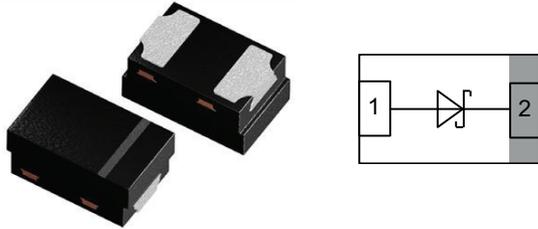
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC [®] 51-3 on FR-4 board with recommended soldering footprint	R _{thJA}	420	K/W
Thermal resistance junction to lead		R _{thJL}	100	K/W
Maximum junction temperature		T _{j max.}	150	°C
Storage temperature range		T _{stg}	-55 to +150	°C
Operating temperature range		T _{op}	-55 to +150	°C

Revision 30-Apr-21



The DNA of tech.™

Small Signal 40 V Schottky and 100 V Switching Diodes in Ultra Compact DFN1006-2A Package with Visible and Wettable Side Terminals for Commercial and Automotive Applications



LINKS TO ADDITIONAL RESOURCES



MECHANICAL DATA

Case: DFN1006-2A

Weight: 0.83 mg

Molding compound flammability rating: UL 94 V-0

Terminals: high temperature soldering guaranteed:
Peak temperature max. 260 °C

Packaging codes/options:
08/10K per 7" reel (8 mm tape)

FEATURES

- This diode features very low turn-on voltage and fast switching
- This device is protected by a PN junction guard ring against excessive voltage, such as electrostatic discharges
- Leadless ultra small DFN1006-2A package (1 mm × 0.6 mm × 0.45 mm)
- Power dissipation better than SOT-23
- Surface-mounted device (SMD) plastic package with visible and sidewall plated / wettable flanks
- Soldering can be checked by standard visual inspection. No X-ray inspection necessary to meet automotive AOI requirements
- AEC-Q101 qualified available
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912



PARTS TABLE

PART	ORDERING CODE	AEC-Q101 QUALIFIED	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
BAS40L	BAS40L-G3-08	no	Single	A.	Tape and reel
	BAS40L-HG3-08	yes			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		V _R	40	V
Forward current	on FR-4 board with recommended soldering footprint	I _F	200	mA
Non-repetitive peak forward current	T _j = 25 °C, t _p = 10 ms	I _{FSM}	500	mA
	T _j = 100 °C, t _p = 10 ms		200	
	T _j = 125 °C, t _p = 20 μs		500	
Power dissipation	on FR-4 board with recommended soldering footprint	P _{tot}	300	mW
	R _{thJL} = 100 K/W		1250	mW

THERMAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	R _{thJA}	420	K/W
Thermal resistance junction to lead		R _{thJL}	100	K/W
Maximum junction temperature		T _{j max.}	150	°C
Storage temperature range		T _{stg}	-55 to +150	°C
Operating temperature range		T _{op}	-55 to +150	°C

Revision 30-Mar-21