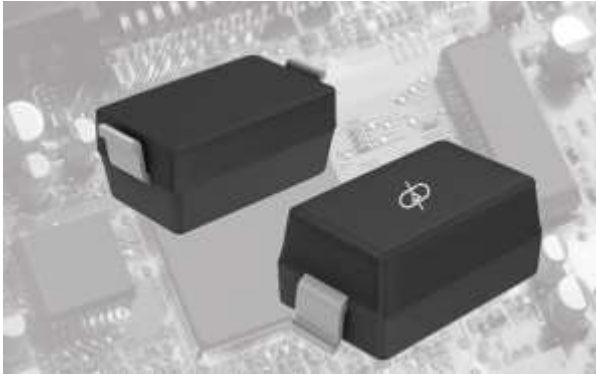


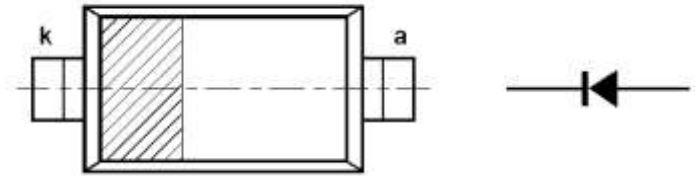
HIGH-SPEED DIODE

DESCRIPTION:



Package: SOD323 (SMD)

The ALPBAS316 is a high-speed switching diode fabricated in planar technology, and encapsulated in the SOD323 SMD plastic package and its used for High-speed switching max. 4 ns



FEATURES:

- Very small plastic SMD package
- High switching speed: max. 4 ns
- Continuous reverse voltage: max. 100 V
- Repetitive peak reverse voltage: max. 100 V
- Repetitive peak forward current: max. 500 mA.
- RoHS Compliant
- REACH Compliant

APPLICATIONS:

- High-speed switching in e.g. surface mounted circuits

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)					
PARAMETER		SYMBOL	MIN	MAX	UNIT
Peak Repetitive Reverse Voltage		V _{RRM}	-	100	V
Continuous reverse voltage		V _R	-	100	V
Continuous forward current Ts = 90 °C; Note 1; see Fig.1		I _F	-	250	mA
Repetitive peak forward current		I _{FRM}	-	500	mA
Non-repetitive peak forward current Square wave; T _j = 25 °C prior to surge; see Fig.3	t = 1 μs	I _{FSM}	-	4	A
	t = 1 ms		-	1	A
	t = 1 s		-	0.5	A
Total power dissipation Ts = 90 °C; Note 1		P _{tot}	-	400	mW
Storage temperature		T _{stg}	65	+150	°C
Junction temperature		T _j	-	150	°C

Note:

1. T_s is the temperature at the soldering point of the cathode tab.

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	Value	UNIT
Thermal resistance from junction to soldering point (note 1)	$R_{th(j-s)}$	150	K/W

Note:

1. Soldering point of the cathode tab.

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)				
PARAMETER	TEST CONDITIONS	SYMBOL	MAX	UNIT
Forward Voltage	see Fig.2	V_F		
	$I_F = 1\text{ mA}$		715	mV
	$I_F = 10\text{ mA}$		855	mV
	$I_F = 50\text{ mA}$		1	V
	$I_F = 150\text{ mA}$		1.25	V
Reverse current	see Fig.4	I_R		
	$V_R = 25\text{ V}$		30	nA
	$V_R = 75\text{ V}$		1	μA
	$V_R = 25\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$		30	μA
	$V_R = 75\text{ V}; T_j = 150\text{ }^{\circ}\text{C}$		50	μA
Diode capacitance	$f = 1\text{ MHz}; V_R = 0$; see Fig.5	C_d	1.5	pF
Reverse recovery time	when switched from $I_F = 10\text{ mA}$ to $I_R = 10\text{ mA}$; $R_L = 100\text{ }\Omega$; measured at $I_R = 1\text{ mA}$; see Fig.6	t_{rr}	4	ns
Forward recovery voltage	when switched from $I_F = 10\text{ mA}$; $t_r = 20\text{ ns}$; see Fig.7	V_{fr}	1.75	V

TYPICAL DEVICE CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

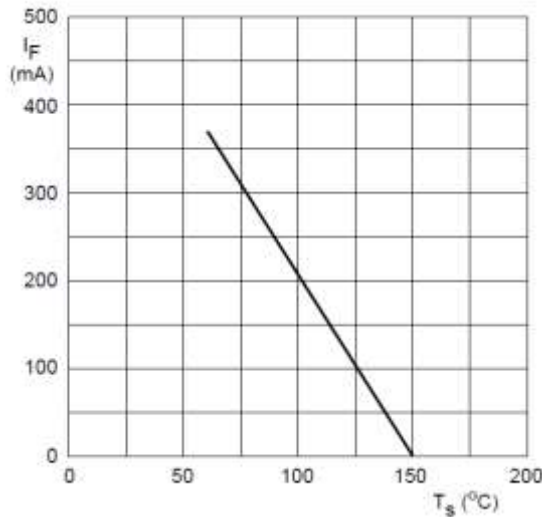


Fig.1 Maximum permissible continuous forward current as a function of soldering point temperature.

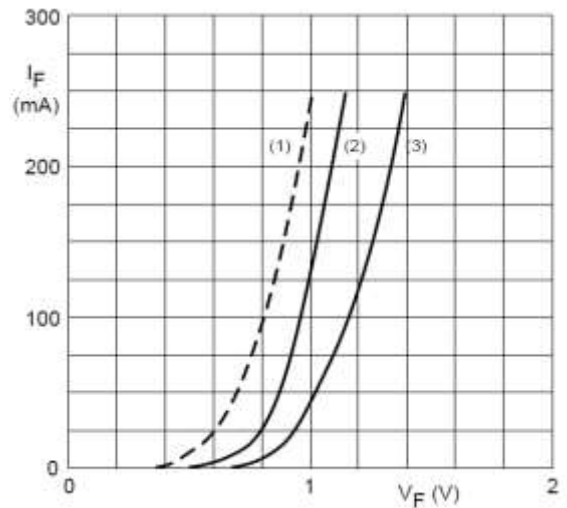


Fig.2 Forward current as a function of forward voltage.

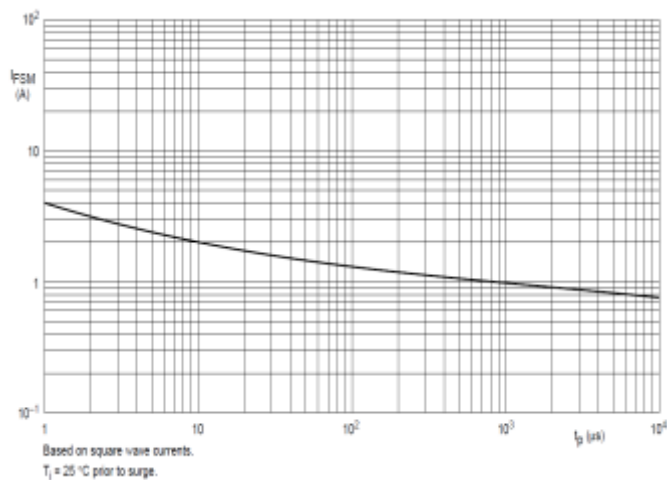


Fig.3 Maximum permissible non-repetitive peak forward current as a function of pulse duration

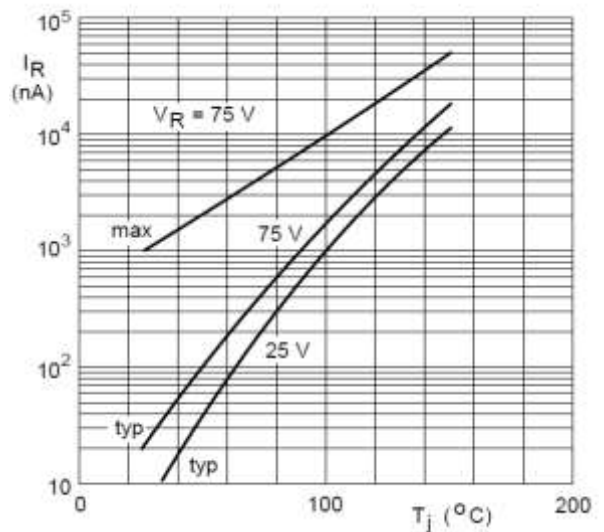


Fig.4 Reverse current as a function of junction temperature.

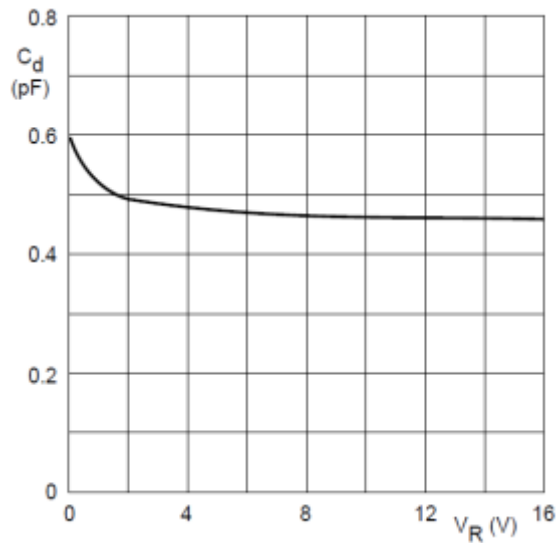


Fig.5 Diode capacitance as a function of reverse voltage; typical values

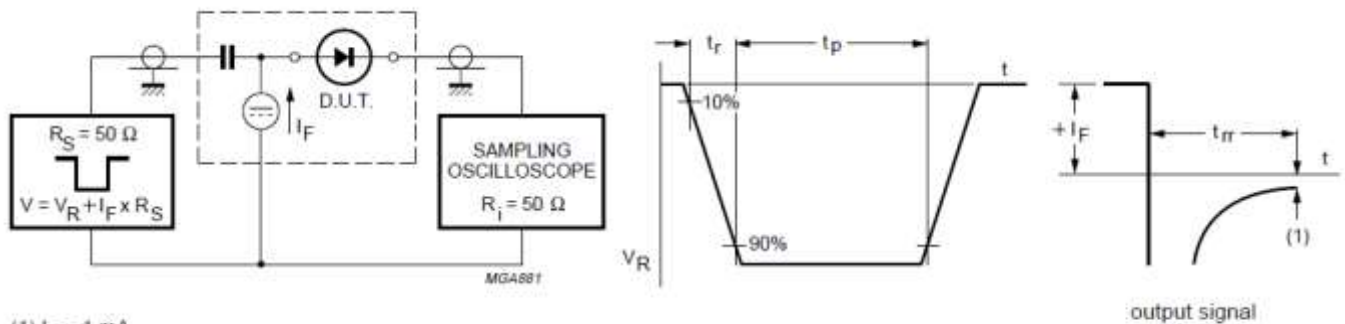


Fig.6 Reverse recovery voltage test circuit and waveforms

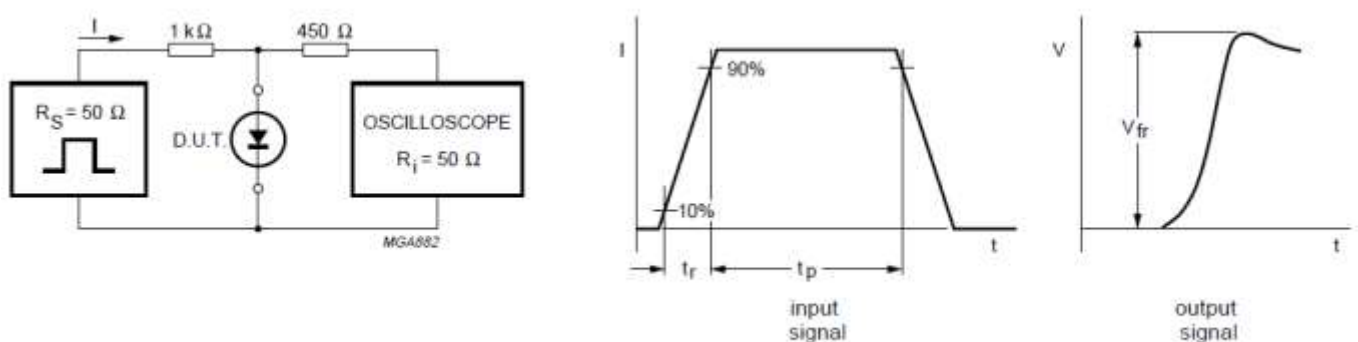
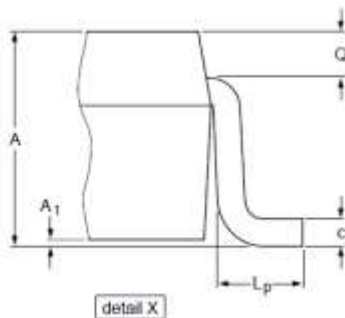
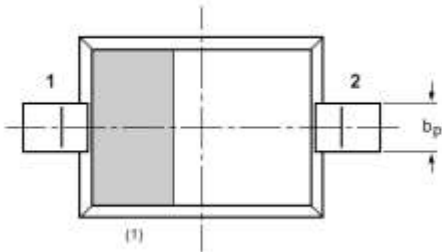
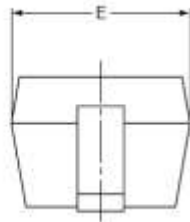
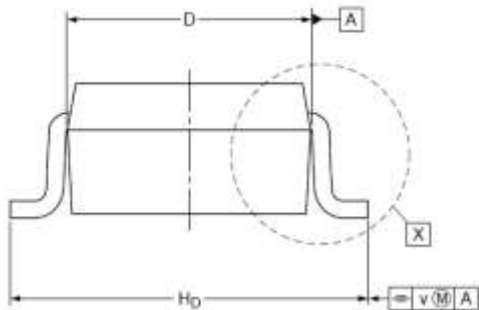


Fig.7 Forward recovery voltage test circuit and waveforms

PACKAGE INFORMATION

SOD323 (SMD)



OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.8	1.1	0.314	0.0393
A1 max		0.05		0.0019
bp	0.25	0.40	0.0098	0.0157
C	0.10	0.25	0.0039	0.0098
D	1.6	1.8	0.0629	0.0708
E	1.15	1.35	0.0452	0.0531
HD	2.3	2.7	0.0905	0.1062
Lp	0.15	0.45	0.0059	0.0177
Q	0.15	0.25	0.0059	0.0098
v		0.2		0.0078

NOTES

- Controlling dimension: millimeters.
- Dimensioning and tolerances per ANSI Y14.5M, 1985.
- Dimensions are exclusive of mold flash and metal burrs.



beyond boundaries...

ALPBAS316
SOD323 (SMD)

CUSTOMER NOTE:

DISCLAIMER

The product information and the selection guide facilitates the selection of the ALPINESEMI™'s Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review the Data sheet(s) so as to confirm that the Device(s) meets functionality parameters for your application. The information furnished on the Data Sheet and the ALPINESEMI™'s Web Site is believed to be accurate and reliable at the time of preparation of this document. ALPINESEMI™ however, does not assume any inaccuracies that may arise when the components are mounted and removed. Furthermore, ALPINESEMI™ does not assume liability whatsoever, arising out of the application or the use of any of ALPINESEMI™'s product(s). Neither, does it convey any license under its patent rights nor the rights of others. These products are not guaranteed for use in life saving/support appliances or systems. ALPINESEMI™'s customers using these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and ALPINESEMI™ will not be responsible in any way(s) for any damage(s) resulting from such use.

Please check the website **www.alpinesemi.com** for continues updates and revision of datasheets.

DESIGN CHANGES: ALPINESEMI™ strives for continuous improvement and reserves the right to change the specifications of its products without prior notice. ALPINESEMI™ reserves the right to discontinue product lines without prior notice. Any product selection is a recommendation based on best understanding of such product(s) by our engineers. However, buyers are advised to rely on their own judgment for such selection of the products.

ALPINESEMI™ makes no warranty, representation or guarantee regarding the suitability of its products for any particular applications. Neither does ALPINESEMI™ assume any liability arising out of the applications nor the use of such products. ALPINESEMI™ specifically disclaims all liabilities either consequential or incidental.

All rights of the product and datasheet are reserved to ALPINESEMI™.

All logos and information provided in the datasheets are for reference only. Any registered and/or trademark/logos belonging to respective companies be the property of those companies. ALPINESEMI™ extends the courtesy to them, if any of the information found in its datasheet.

Component Disposal Instructions

1. ALPINESEMI™ Semiconductor Devices are RoHS compliant and hence customers are requested to dispose as per the prevailing Environmental Legislation put forth in their specific country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).



sales@alpinesemi.com
www.alpinesemi.com