

**High voltage switching diode**

# BAS21N3

**Description**

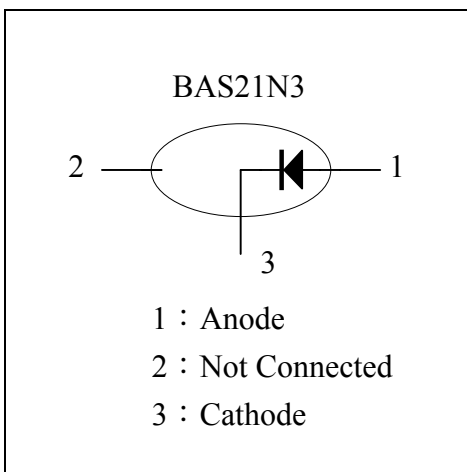
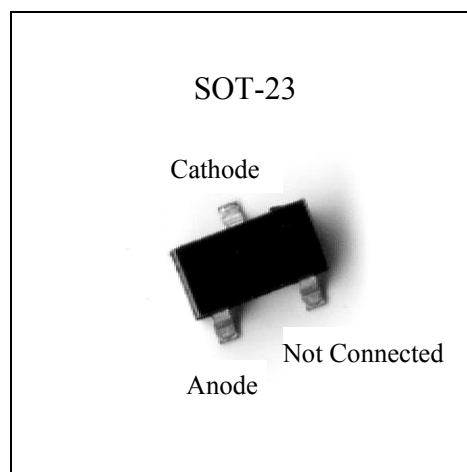
The BAS21N3 is a general purpose diode fabricated in planar technology and encapsulated in a small SOT-23 plastic SMD package.

**Features**

- Fast switching speed : max. 50ns
- Small plastic SMD package
- General application.
- Continuous reverse voltage : max. 200V
- Repetitive peak reverse voltage : max. 250V
- Repetitive peak forward current : max. 625mA

**Applications**

- General purpose switching in e.g. surface mounted circuits.

**Symbol****Outline**



**Absolute Maximum Ratings @TA=25°C**

Parameter	Symbol	Min	Max	Unit
Repetitive peak reverse voltage	V <sub>RRM</sub>	-	250	V
Continuous reverse voltage	V <sub>R</sub>	-	200	V
Continuous forward current	I <sub>F</sub>	-	200	mA
Repetitive peak forward current	I <sub>FRM</sub>		625	mA
Non-repetitive peak forward current @square wave, T <sub>j</sub> =25°C prior to surge	I <sub>FSM</sub>	t=1μs	9	A
		t=100μs	3	A
		t=10ms	1.7	A
Total power dissipation(Note 1)	P <sub>tot</sub>		250	mW
Junction Temperature	T <sub>j</sub>	-	150	°C
Storage Temperature	T <sub>stg</sub>	-65	+150	°C

Note 1: Device mounted on an FR-4 PCB.

**Electrical Characteristics @ Tj=25°C unless otherwise specified**

Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> =100mA	-	-	1	V
		I <sub>F</sub> =200mA			1.25	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> =200V	-	-	100	nA
		V <sub>R</sub> =200V, T <sub>j</sub> =150°C			100	μA
Diode capacitance	C <sub>d</sub>	V <sub>R</sub> =0V, f=1MHz	-	-	5	pF
Reverse recovery time	t <sub>rr</sub>	when switched from I <sub>F</sub> =30mA to I <sub>R</sub> =30mA, R <sub>L</sub> =100Ω, measured at I <sub>R</sub> =3mA	-	-	50	ns

**Thermal Characteristics**

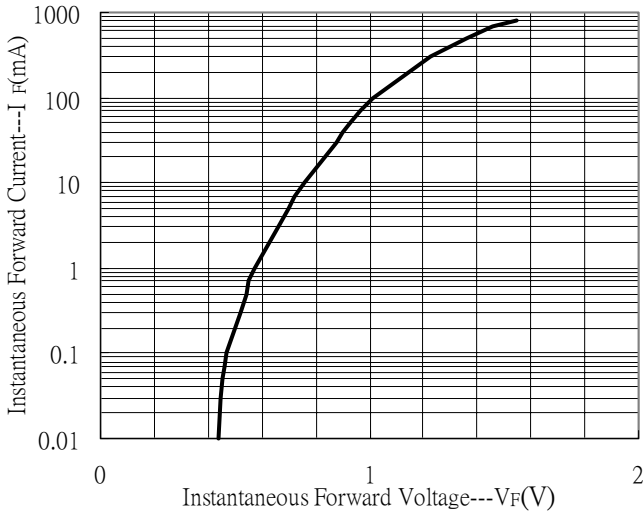
Symbol	Parameter	Conditions	Value	Unit
R <sub>th,j-tp</sub>	thermal resistance from junction to tie-point		330	°C/W
R <sub>th, j-a</sub>	thermal resistance from junction to ambient	Note 1	500	°C/W

Note 1: Device mounted on an FR-4 PCB.

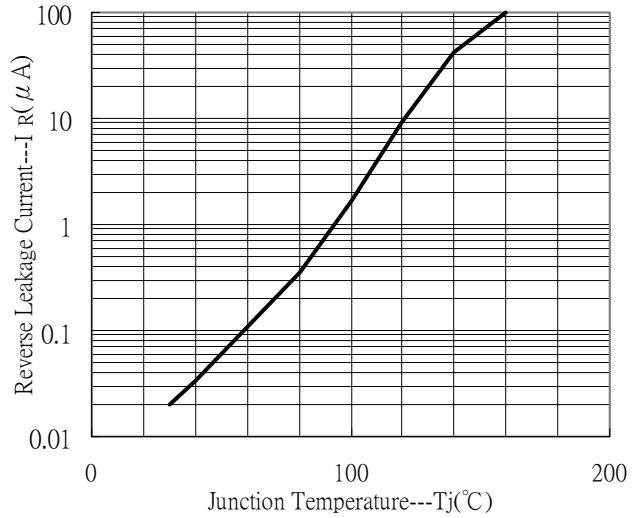


### Characteristic Curves

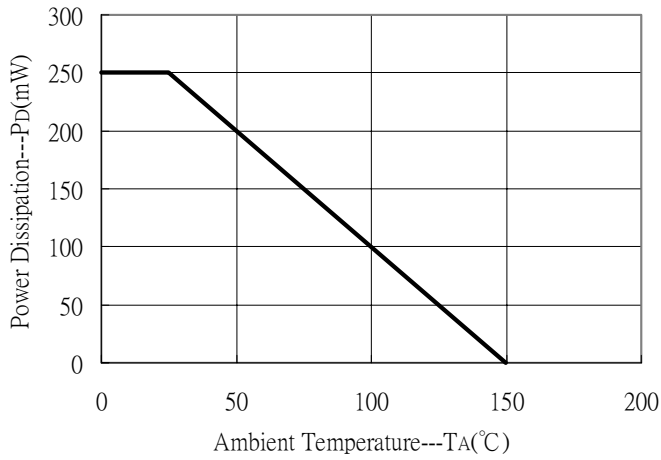
Forward Characteristics



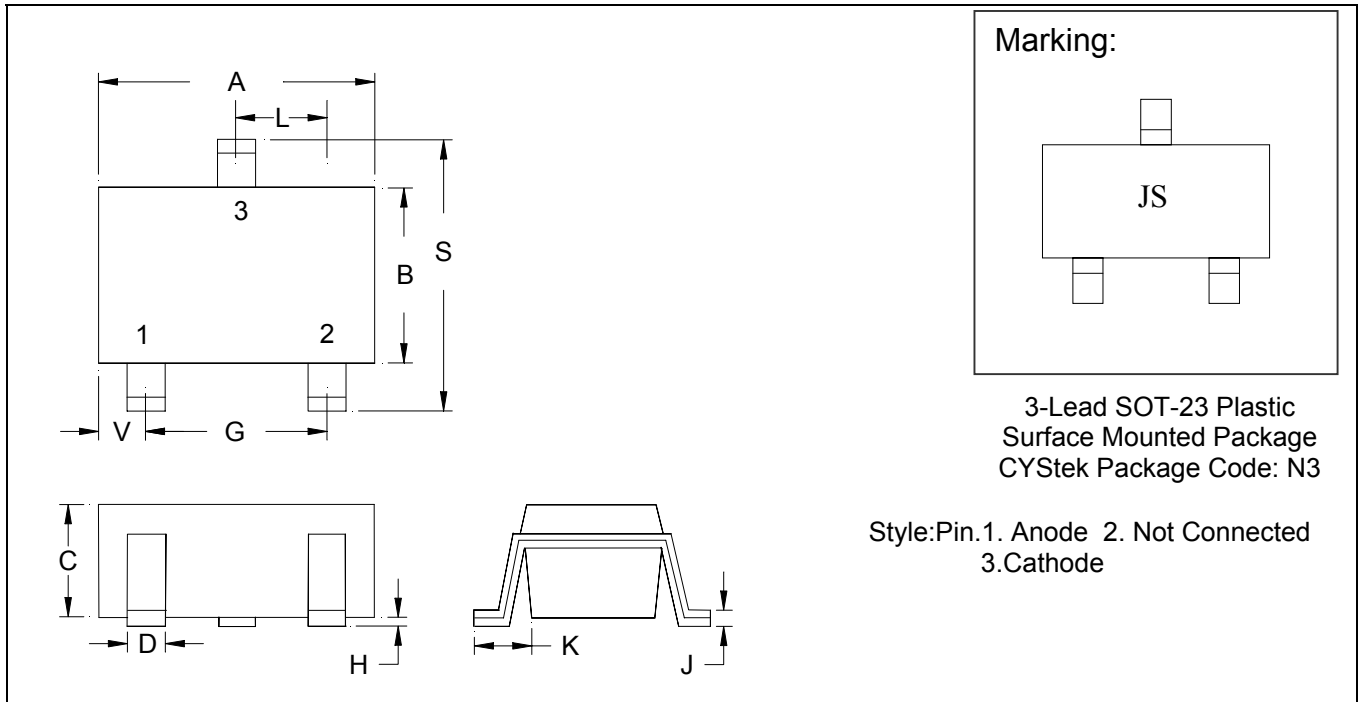
Reverse Leakage Current vs Junction Temperature



Power Derating Curve



**SOT-23 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

Notes: 1. Controlling dimension: millimeters.  
 2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3. If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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