

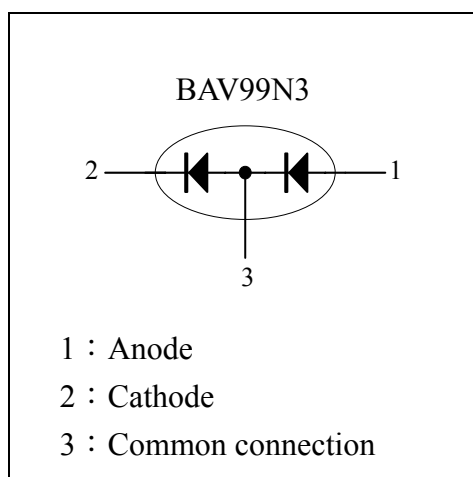
High –speed double diode

BAV99N3

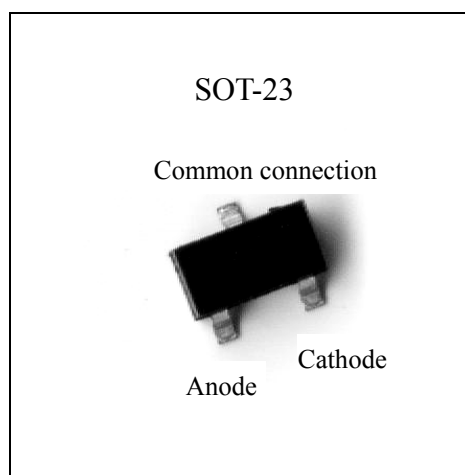
Description

The BAV99N3 consists of two high-speed switching diodes connected in series, fabricated in planar technology, and encapsulated in the small SOT-23 plastic SMD package.

Equivalent Circuit



Outline



Features

- Small plastic SMD package
- High switching speed: max. 4ns
- Continuous reverse voltage: max. 75V
- Repetitive peak reverse voltage: max. 85V
- Repetitive peak forward current: max. 450mA.
- Pb-free package

Applications

- High-speed switching in thick and thin-film circuits.

**Absolute Maximum Ratings @T_A=25°C**

Parameters	Symbol	Min	Max	Unit
Repetitive peak reverse voltage	V _{RRM}	-	85	V
Continuous reverse voltage	V _R	-	75	V
Continuous forward current(single diode loaded)	I _F	-	215	mA
Continuous forward current(double diode loaded)		-	125	
Repetitive peak forward current	I _{FRM}		450	mA
Non-repetitive peak forward current @square wave, T _j =125°C prior to surge	I _{FSM}	t=1μs	4	A
		t=1ms	1	A
		t=1s	0.5	A
Total power dissipation(Note 1)	P _{tot}		250	mW
Junction Temperature	T _j	-	150	°C
Storage Temperature	T _{stg}	-65	+150	°C

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

Electrical Characteristics @ T_j=25°C unless otherwise specified

Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Forward voltage	V _F	I _F =1mA	-	-	715	mV
		I _F =10mA			855	mV
		I _F =50mA			1	V
		I _F =150mA			1.25	V
Reverse current	I _R	V _R =25V	-	-	30	nA
		V _R =75V			1	μA
		V _R =25V, T _j =150°C			30	μA
		V _R =75V, T _j =150°C			50	μA
Diode capacitance	C _d	V _R =0V, f=1MHz	-	-	1.5	pF
Reverse recovery time	t _{rr}	when switched from I _F =10mA to I _R =10mA, R _L =100Ω, measured at I _R =1mA	-	-	4	ns
Forward recovery voltage	V _{fr}	when switched from I _F =10mA t _r =20ns	-	-	1.75	V

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R _{th,j-tp}	thermal resistance from junction to tie-point		360	°C/W
R _{th,j-a}	thermal resistance from junction to ambient	Note 1	500	°C/W

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

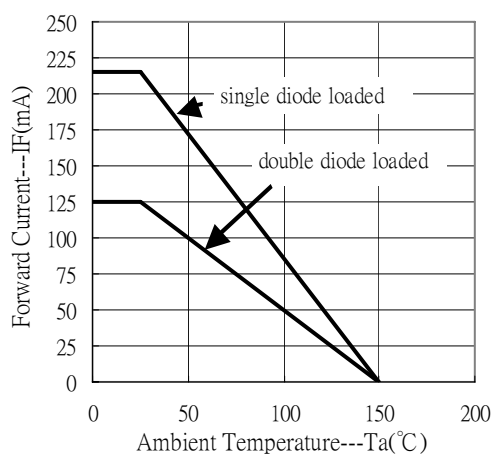


Ordering Information

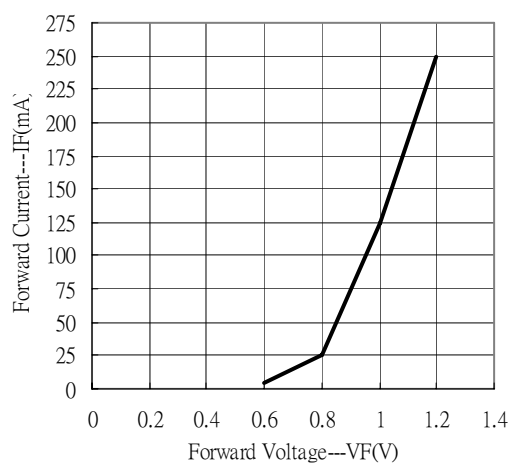
Device	Package	Shipping	Marking
BAV99N3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	A7

Characteristic Curves

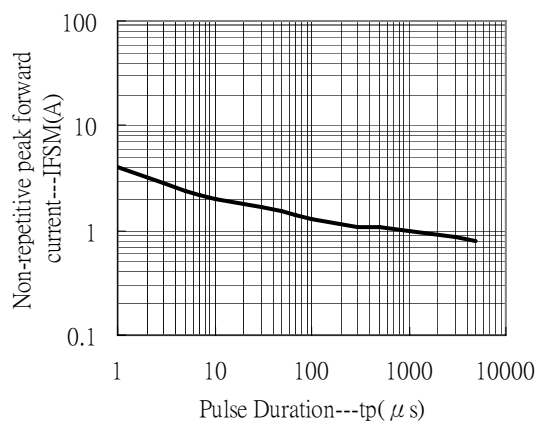
Forward Current vs Ambient Temperature



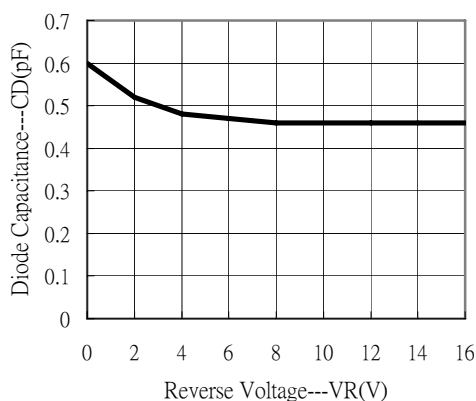
Forward Current vs Forward Voltage



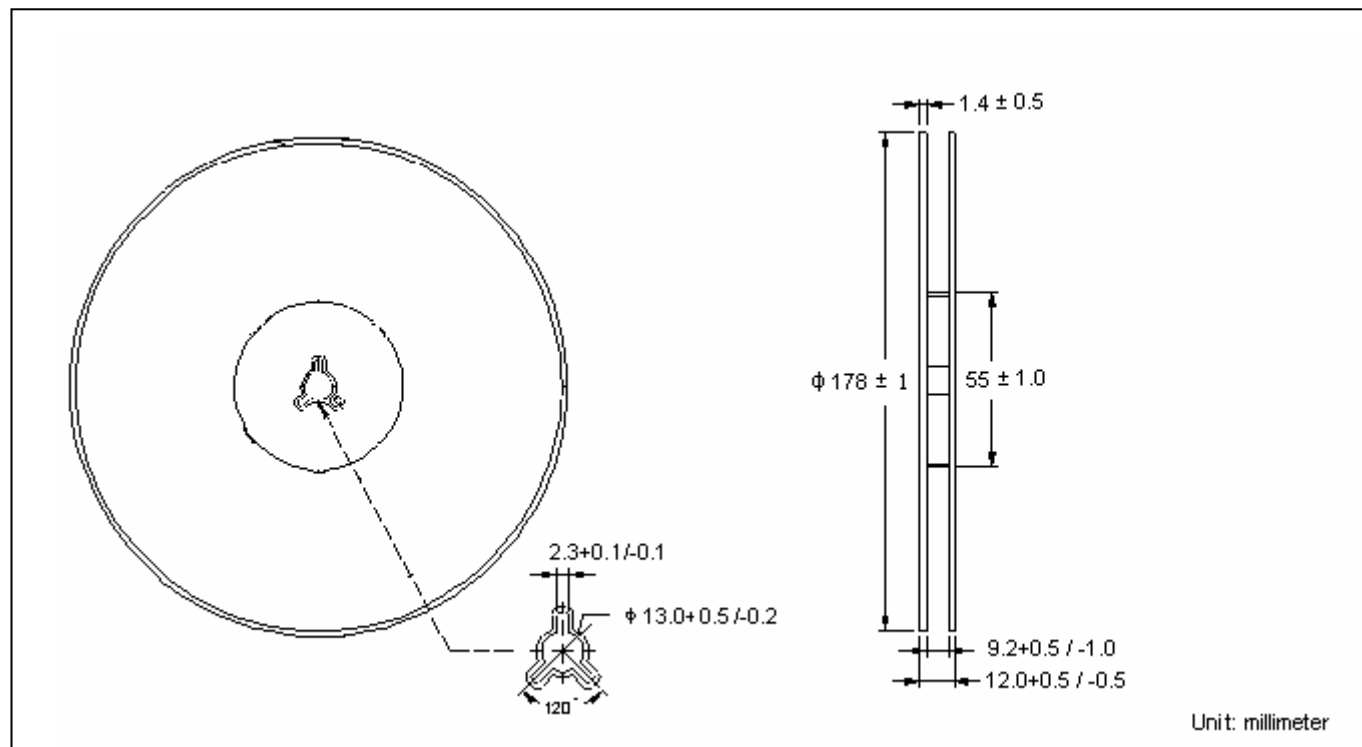
Non-repetitive peak forward current vs pulse duration



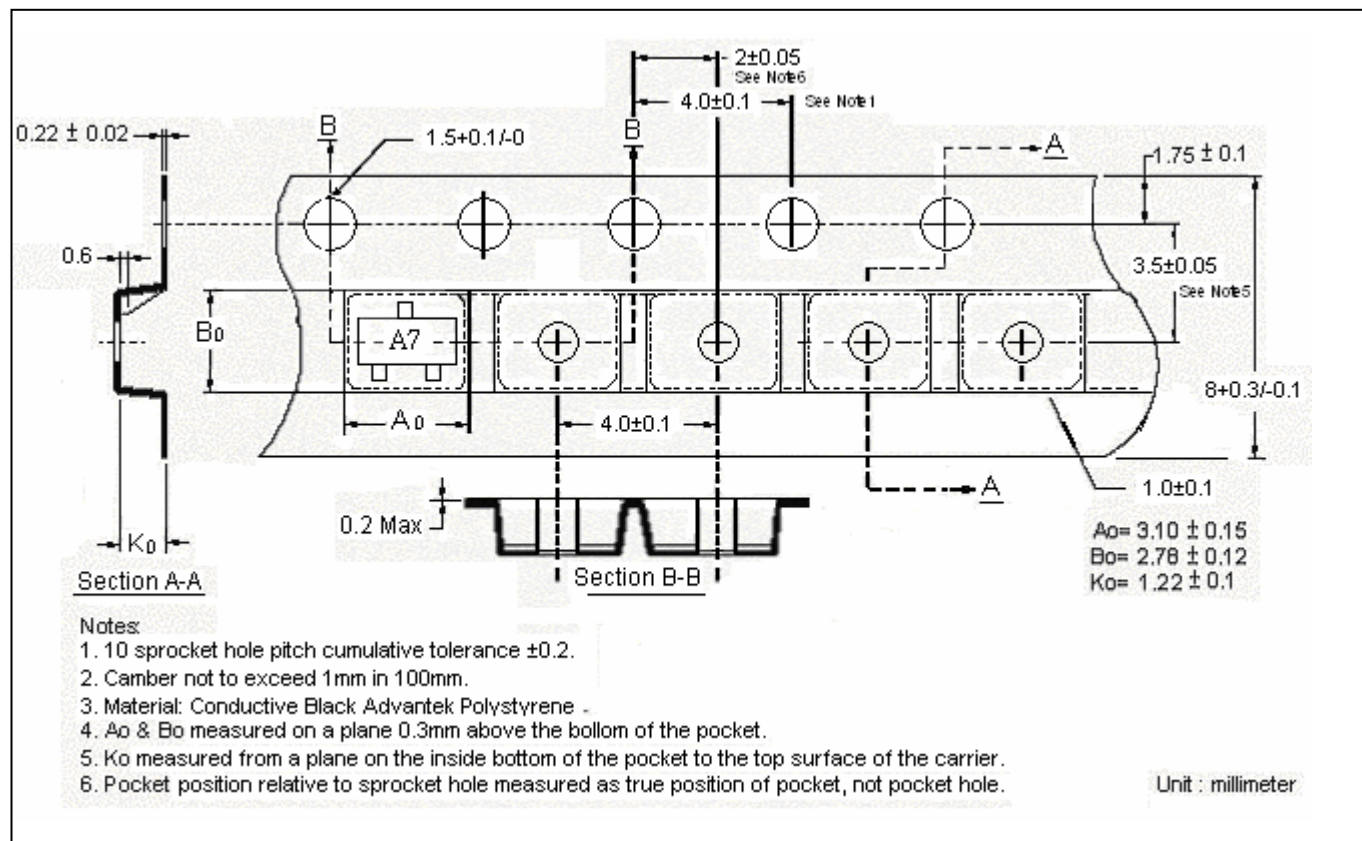
Diode Capacitance vs Reverse Voltage



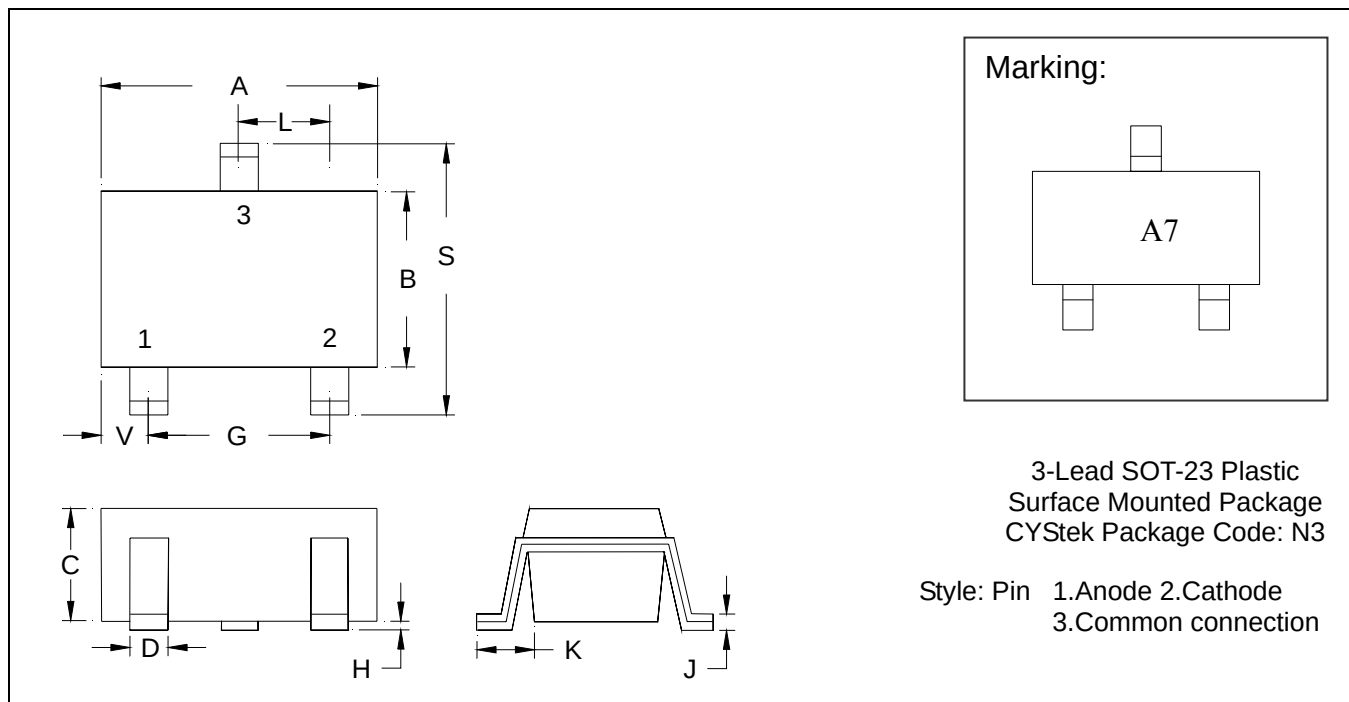
Reel Dimension



Carrier Tape Dimension



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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