

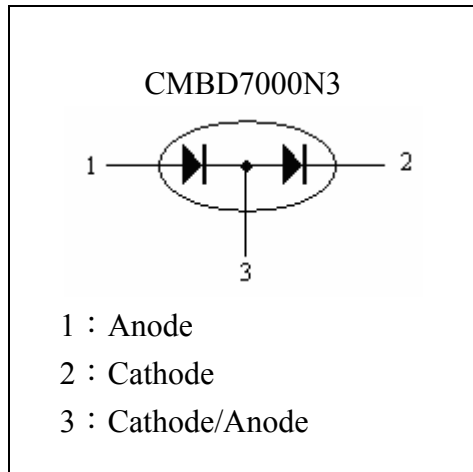
High –speed double diode

CMBD7000N3

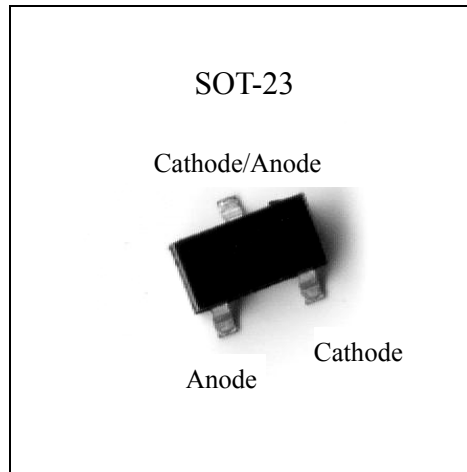
Description

The CMBD7000N3 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



Absolute Maximum Ratings @ $T_A=25^{\circ}\text{C}$

Parameters	Symbol	Min	Max	Unit
Reverse voltage	V_R	-	100	V
Forward current	I_F	-	200	mA
Peak forward surge current	I_{FRM}		500	mA
Power dissipation (Note 1) Derate above 25°C	P_D		225 1.8	mW mW/ $^{\circ}\text{C}$
Power dissipation (Note 2) Derate above 25°C	P_D		300 2.4	mW mW/ $^{\circ}\text{C}$
Junction Temperature	T_j	-55	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55	+150	$^{\circ}\text{C}$

Note 1 : Device mounted on an FR-5 PCB with area $1.0 \times 0.75 \times 0.062$ in.

2 : Device mounted on an Alumina board with area $0.4 \times 0.3 \times 0.024$ in .



Electrical Characteristics @ Tj=25°C unless otherwise specified

Parameters	Symbol	Conditions	Min	Typ.	Max	Unit
Reverse breakdown voltage	V _(BR)	I _(BR) =100μA	100	-	-	V
Forward voltage	V _F	I _F =1mA	0.55	-	0.7	V
		I _F =10mA	0.67	-	0.82	V
		I _F =100mA	0.75	-	1.1	V
Reverse current	I _R	V _R =50V	-	-	1.0	μA
		V _R =100V	-	-	3.0	μA
		V _R =50V, T _j =125°C	-	-	100	μA
Diode capacitance	Cd	V _R =0V, f=1MHz	-	-	1.5	pF
Reverse recovery time	trr	when switched from I _F =10mA to I _R =10mA, R _L =100Ω, measured at I _R =1mA	-	-	4	ns

Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R _{th,j-a}	thermal resistance from junction to ambient	Note 1	556	°C/W
R _{th, j-a}	thermal resistance from junction to ambient	Note 2	417	°C/W

Note 1: Device mounted on an FR-5 PCB with area 1.0x0.75x0.062 in .

2 : Device mounted on an Alumina board with area 0.4x0.3x0.024 in .

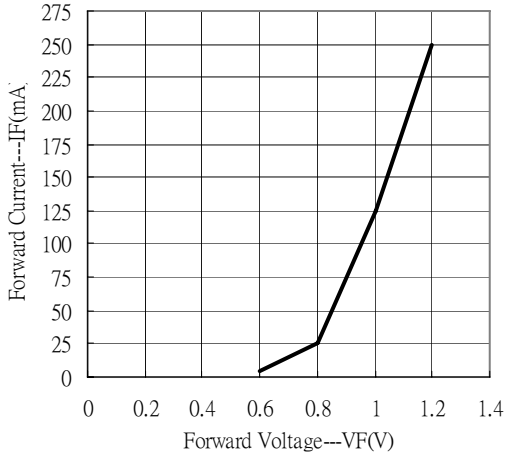
Ordering Information

Device	Package	Shipping	Marking
CMBD7000N3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	M5C

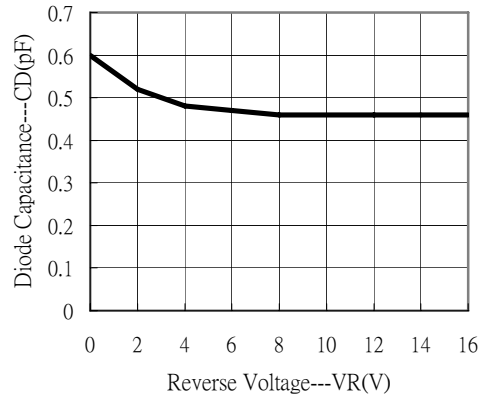


Characteristic Curves(applicable to each diode)

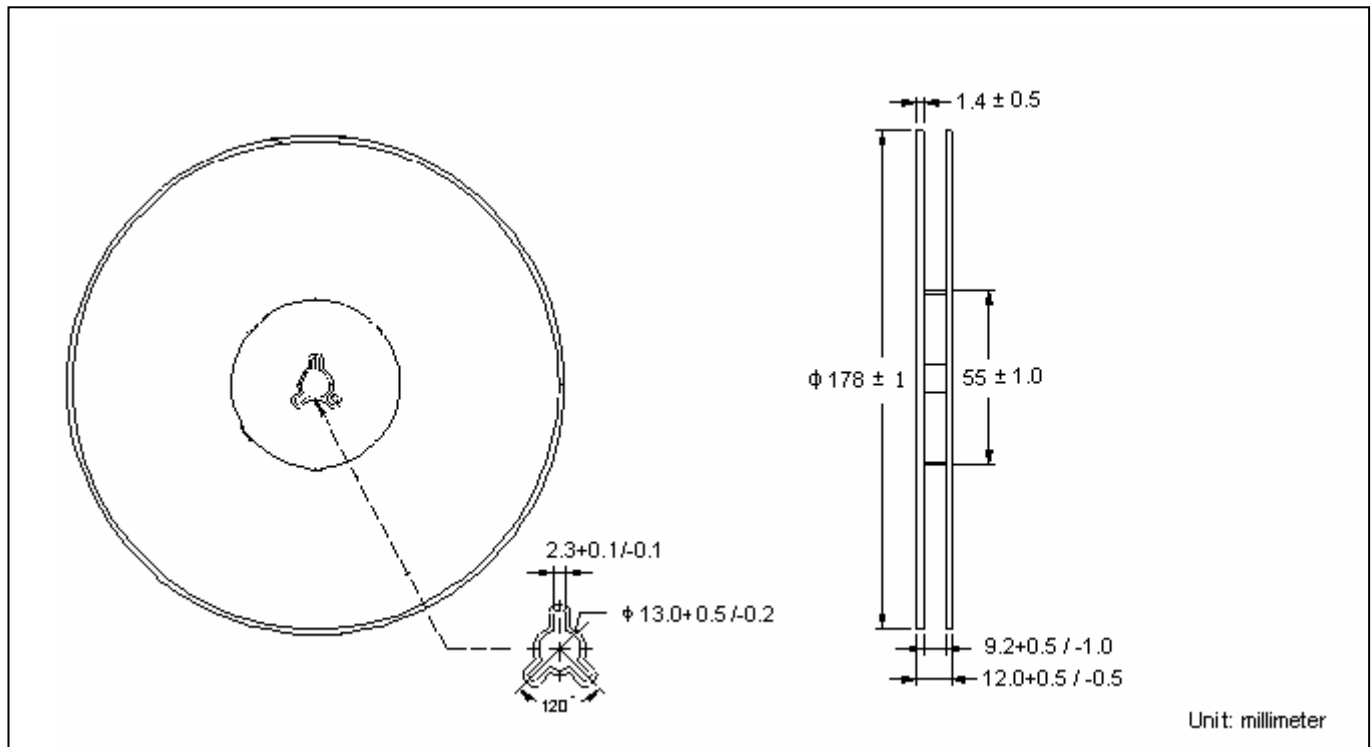
Forward Current vs Forward Voltage



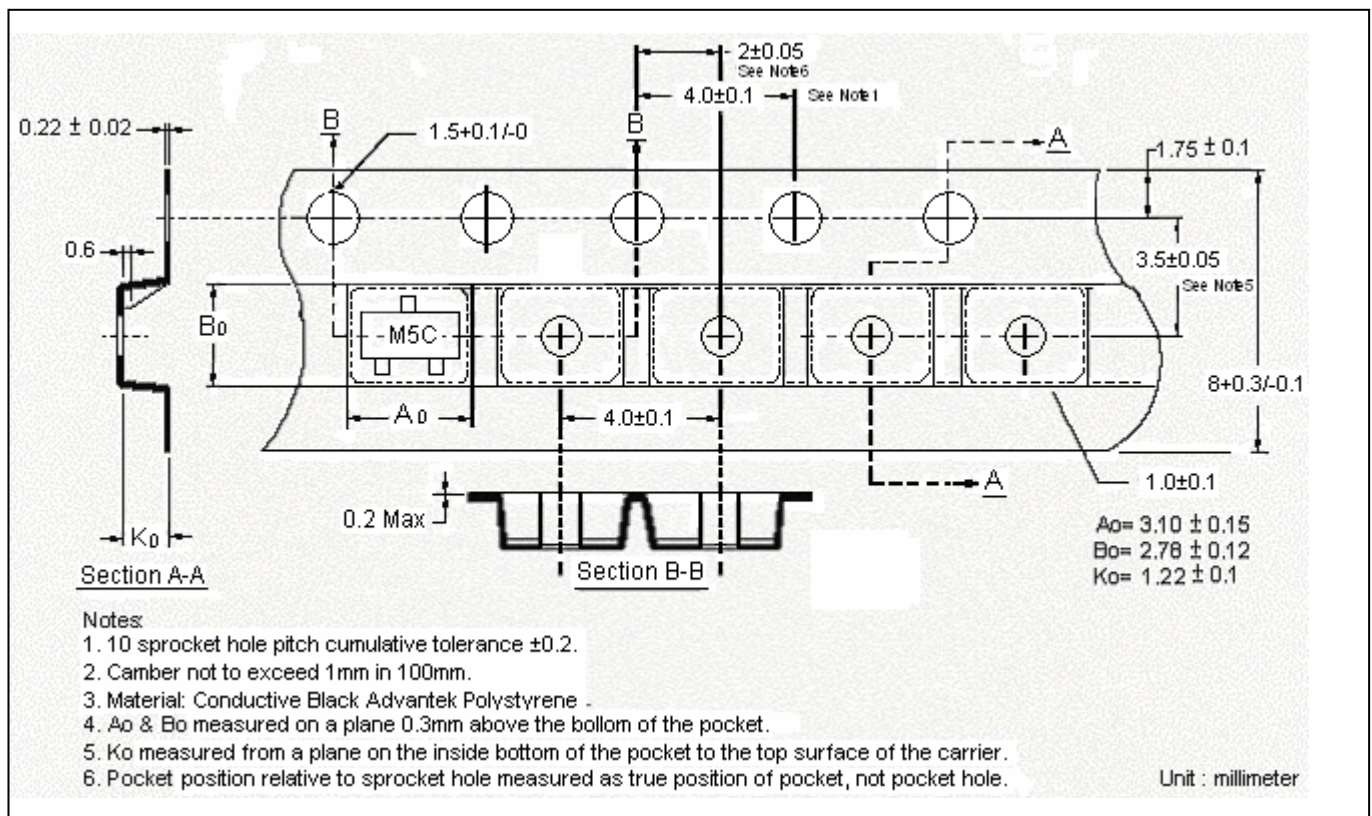
Diode Capacitance vs Reverse Voltage



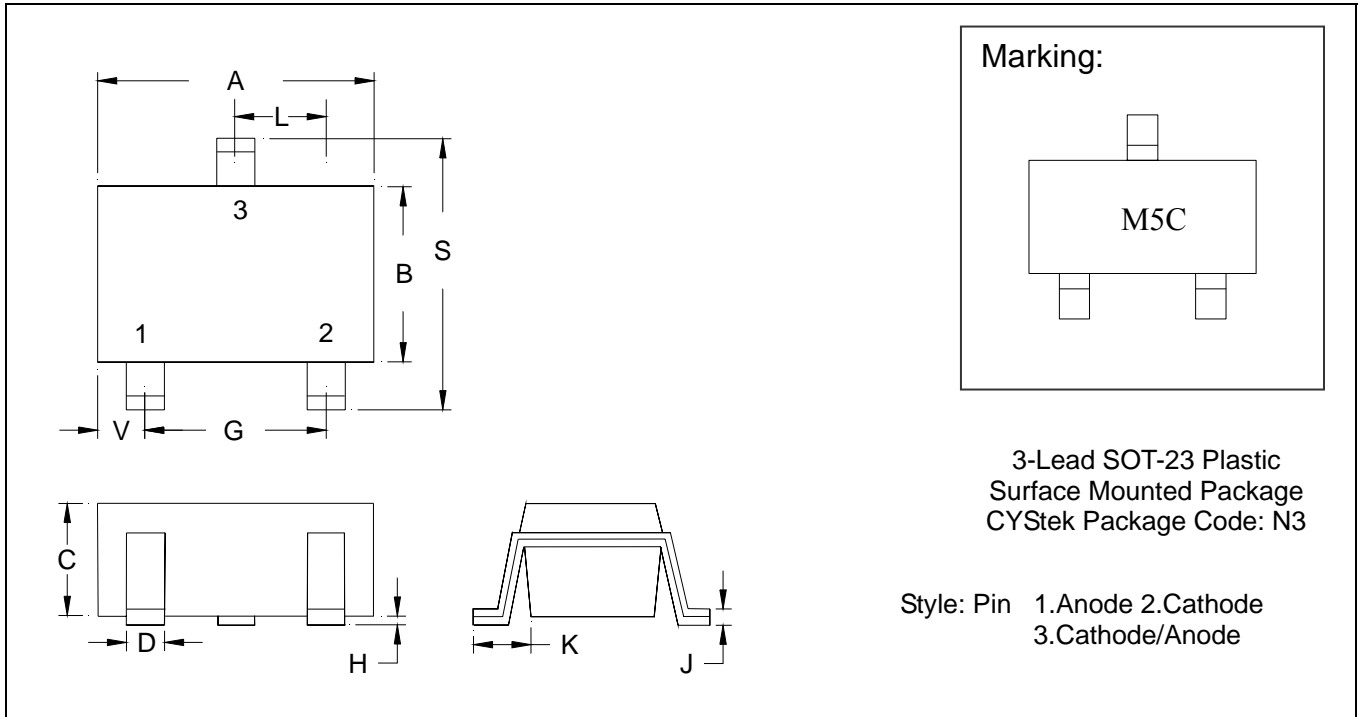
Reel Dimension



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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