

**Small Signal Schottky diode**

# BAT54S2

**Description**

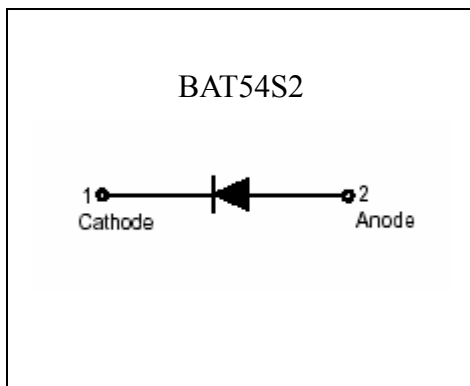
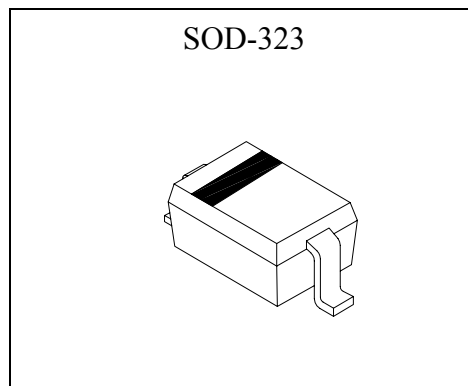
Planar silicon Schottky barrier diode encapsulated in a SOD-323 very small plastic SMD package.

**Features**

- Guard ring protected
- Low forward voltage drop
- Very small plastic SMD package

**Applications**

- Ultra high-speed switching
- Voltage clamping
- Protection circuits
- Blocking diodes

**Symbol****Outline**



### Absolute Maximum Ratings

Symbol	Parameter	Conditions	Min	Max	Unit
V <sub>R</sub>	continuous reverse voltage		-	30	V
I <sub>F</sub>	continuous forward current		-	200	mA
I <sub>FRM</sub>	repetitive peak forward current	tp≤1s, δ≤0.5	-	300	mA
I <sub>FSM</sub>	non-repetitive peak forward current	tp<10ms	-	600	mA
P <sub>tot</sub>	total power dissipation	T <sub>amb</sub> ≤25°C	-	200	mW
T <sub>stg</sub>	storage temperature		-65	+150	°C
T <sub>j</sub>	junction temperature		-	125	°C
T <sub>amb</sub>	operating ambient temperature		-65	+125	°C

### Characteristics (Ta=25°C, unless otherwise specified)

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>R</sub> =100μA	30	-	V
Forward Voltage (Note 1)	V <sub>F</sub> (1)	I <sub>F</sub> =0.1mA	-	240	mV
	V <sub>F</sub> (2)	I <sub>F</sub> =1mA	-	320	mV
	V <sub>F</sub> (3)	I <sub>F</sub> =10mA	-	400	mV
	V <sub>F</sub> (4)	I <sub>F</sub> =30mA	-	500	mV
	V <sub>F</sub> (5)	I <sub>F</sub> =100mA	-	800	mV
Reverse Leakage Current (Note 2)	I <sub>R</sub>	V <sub>R</sub> =25V	-	2	μA
Diode Capacitance	C <sub>D</sub>	V <sub>R</sub> =1V, f=1MHz	-	10	pF
Reverse Recovery Time	t <sub>rr</sub>	when switched from I <sub>F</sub> = 10mA to I <sub>R</sub> =10mA; R <sub>L</sub> =100Ω; measured at I <sub>R</sub> =1mA	-	5	ns

Notes: 1.pulse test, tp=380μs, duty cycle<2%.  
2.pulse test, tp=300μs, duty cycle<2%.

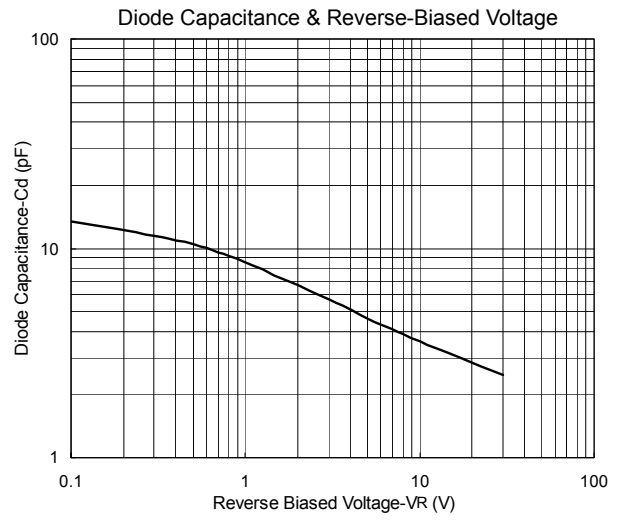
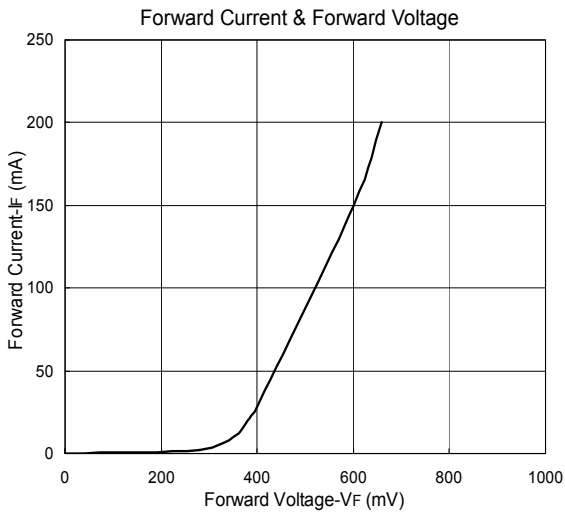
### Thermal Characteristics

Symbol	Parameter	Conditions	Value	Unit
R <sub>th j-a</sub>	thermal resistance from junction to ambient	note 1	635	K/W

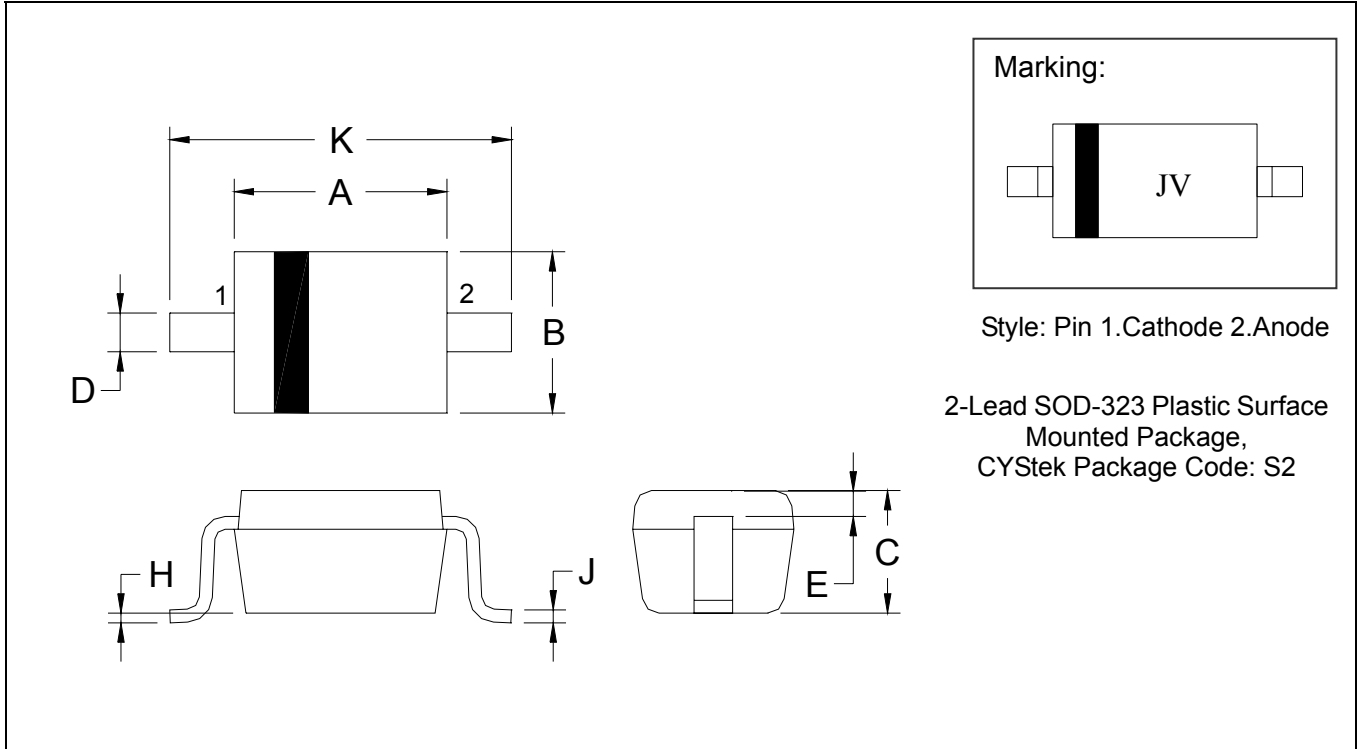
Note 1 : Device mounted on a FR-4 PCB



### Characteristic Curves



**SOD-323 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0630	0.0709	1.60	1.80	E	0.0060 REF		0.15 REF	
B	0.0453	0.0531	1.15	1.35	H	0.0000	0.0040	0.00	0.10
C	0.0315	0.0394	0.80	1.00	J	0.0035	0.0070	0.089	0.177
D	0.0098	0.0157	0.25	0.40	K	0.0906	0.1063	2.30	2.70

- Notes:** 1.Controlling dimension : millimeters.  
 2.Lead thickness specified per L/F drawing with solder plating.  
 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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