

Small Signal Schottky diode

BAT54S2

Description

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

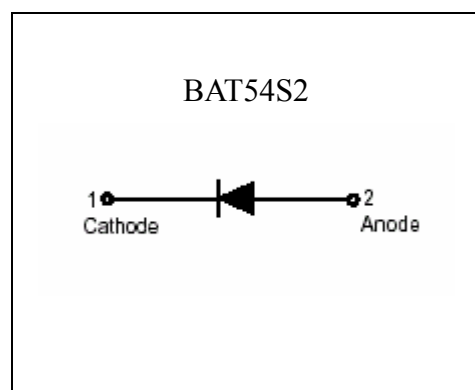
Features

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

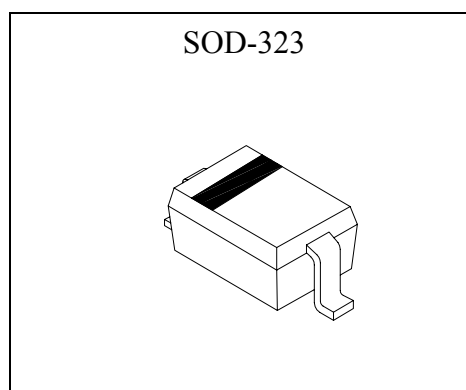
Applications

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

Symbol



Outline



Absolute Maximum Ratings

Symbol	Parameter	Conditions	Min	Max	Unit
V_R	continuous reverse voltage		-	30	V
I_F	continuous forward current		-	200	mA
I_{FRM}	repetitive peak forward current	$t_p \leq 1s, \delta \leq 0.5$	-	300	mA
I_{FSM}	non-repetitive peak forward current	$t_p < 10ms$	-	600	mA
P_{tot}	total power dissipation	$T_{amb} \leq 25^\circ C$	-	200	mW
T_{stg}	storage temperature		-65	+150	$^\circ C$
T_j	junction temperature		-	125	$^\circ C$
T_{amb}	operating ambient temperature		-65	+125	$^\circ C$

Characteristics ($T_a = 25^\circ C$, unless otherwise specified)

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage	V_{BR}	$I_R = 100\mu A$	30	-	V
Forward Voltage (Note 1)	$V_F(1)$	$I_F = 0.1mA$	-	240	mV
	$V_F(2)$	$I_F = 1mA$	-	320	mV
	$V_F(3)$	$I_F = 10mA$	-	400	mV
	$V_F(4)$	$I_F = 30mA$	-	500	mV
	$V_F(5)$	$I_F = 100mA$	-	800	mV
Reverse Leakage Current (Note 2)	I_R	$V_R = 25V$	-	2	μA
Diode Capacitance	C_D	$V_R = 1V, f = 1MHz$	-	10	pF
Reverse Recovery Time	t_{rr}	when switched from $I_F = 10mA$ to $I_R = 10mA$; $R_L = 100\Omega$; measured at $I_R = 1mA$	-	5	ns

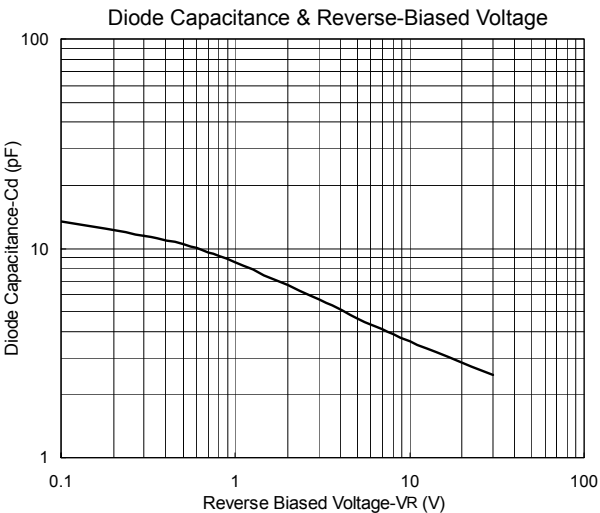
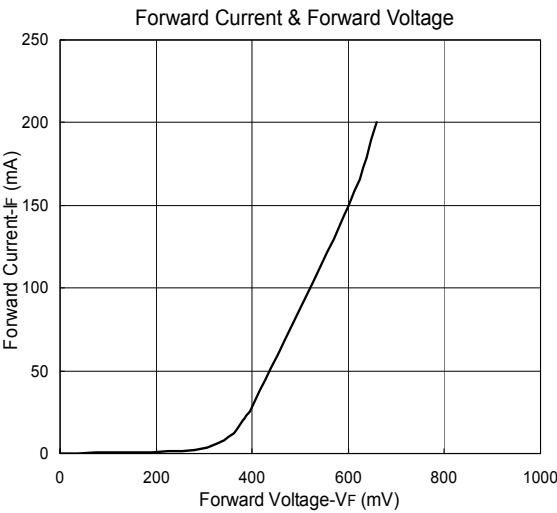
Notes: 1.pulse test, $t_p = 380\mu s$, duty cycle $< 2\%$.
2.pulse test, $t_p = 300\mu s$, duty cycle $< 2\%$.

Thermal Characteristics

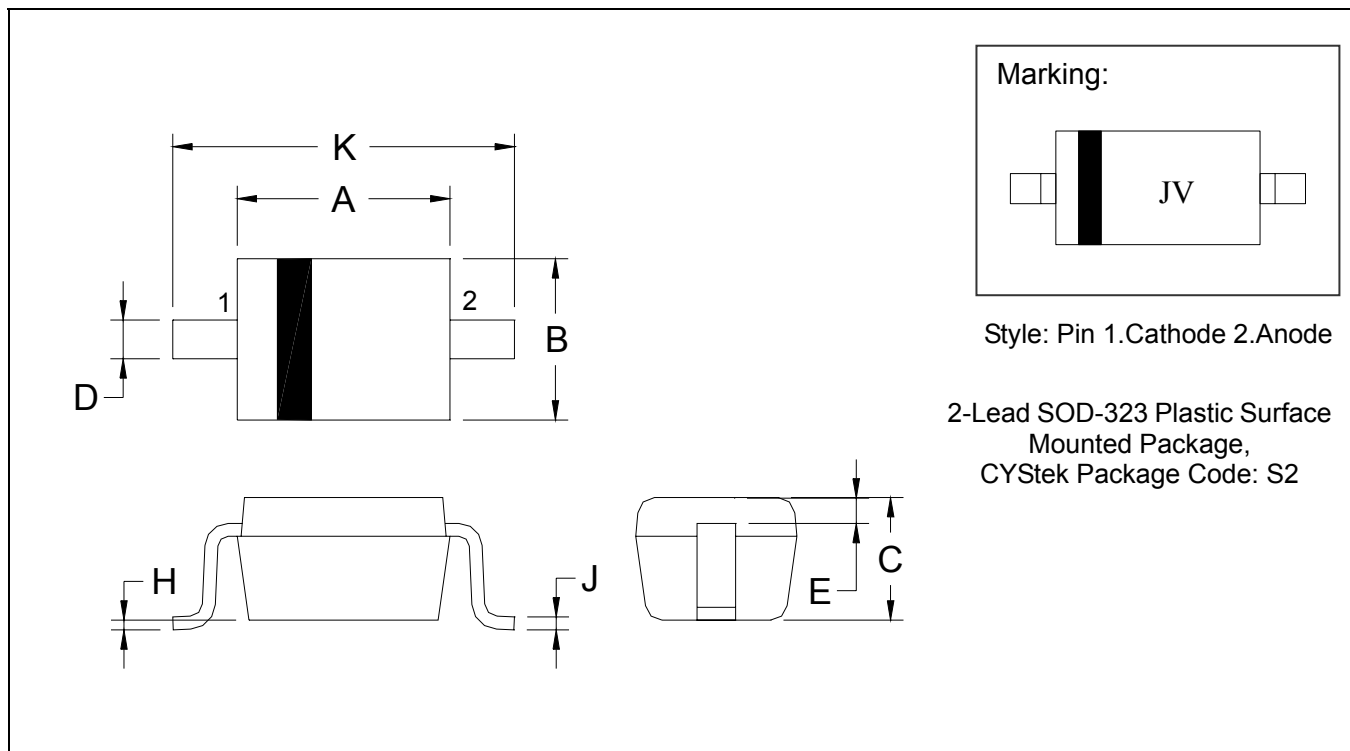
Symbol	Parameter	Conditions	Value	Unit
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	635	K/W

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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