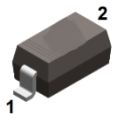
BAT42W BAT42WS BAT42X BAT42L

Small Signal Schottky Barrier Diode

Features

- Low forward voltage
- Fast switching time
- Surface mount package ideally suited for automatic insertion



BAT42W

SOD-123



BAT42WS

SOD-323



BAT42X

SOD-523



BAT42L

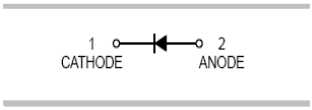
DFN1006-2

Applications

- Schottky barrier detector and switching diodes

Mechanical Data

- Case: SOD-123, SOD-323, SOD-523, DFN1006-2
- Molding compound: UL flammability classification rating 94-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT42W	SOD-123	3000 pcs / Tape & Reel	S7
BAT42WS	SOD-323	3000 pcs / Tape & Reel	S7
BAT42X	SOD-523	3000 pcs / Tape & Reel	S7
BAT42L	DFN1006-2	10000 pcs / Tape & Reel	S7

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Reverse Voltage	V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Maximum Average Forward Output Current	$I_{F(AV)}$	100	mA
Repetitive Peak Forward Current, t = 1.0s	I_{FRM}	500	mA
Peak Forward Surge Current, t = 10ms	I_{FSM}	4	A

Thermal Characteristics

Parameter	Symbol	SOD-123	SOD-323	SOD-523	DFN1006-2	Unit
Power Dissipation	P_D	400	200	150	100	mW
Thermal Resistance Junction-to-Air *1	$R_{\Theta JA}$	250	500	667	1000	°C/W
Operating junction Temperature	T_J	-55 ~ +125				°C
Storage Temperature Range	T_{STG}	-55 ~ +150				°C

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	I_R = 100μA	30	-	-	V
Forward Voltage *2	V_F	I_F = 10mA	-	-	0.40	V
		I_F = 50mA	-	-	0.65	V
		I_F = 200mA	-	-	1.00	V
Maximum Peak Reverse Current *3	I_R	V_R = 25V	-	-	500	nA
Capacitance Between Terminals	C_T	V_R = 1V, f = 1MHz	-	-	10	pF
Reverse Recovery Time	t_{rr}	I_F = I_R = 10mA I_{rr} = 0.1*I_R, R_L = 100Ω	-	-	5	ns
Rectification Efficiency	η_v	R_L = 15Ω, C_L = 300pF f = 45MHz	80	-	-	%

Notes:

1. Part mounted on FR-4 board with recommended pad layout
2. Pulse test, tp ≤ 300μs
3. Pulse test, tp ≤ 5ms

Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

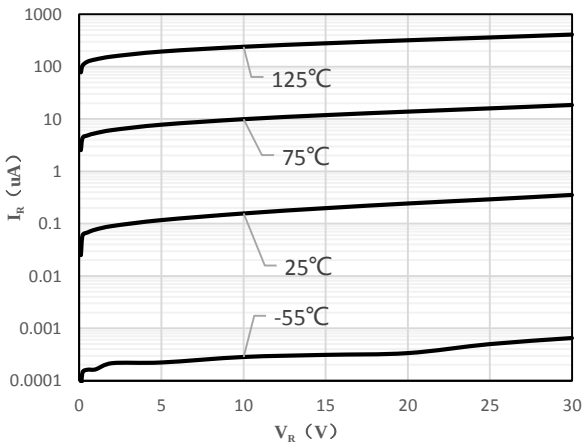


Fig 1 Typical Reverse Characteristic

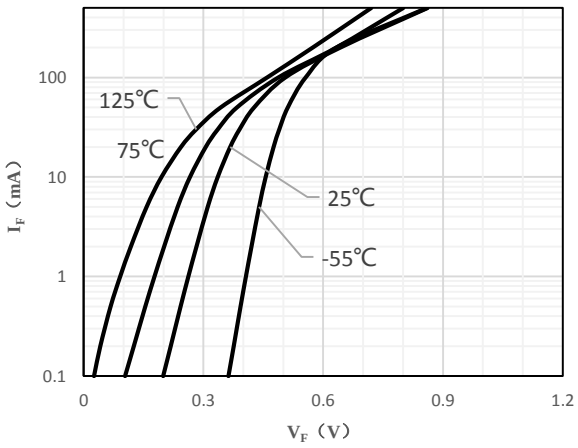


Fig 2 Typical Forward Characteristics

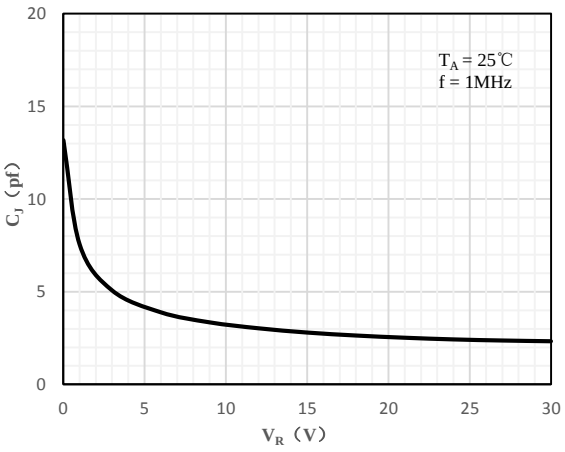


Fig 3 Capacitance Characteristics

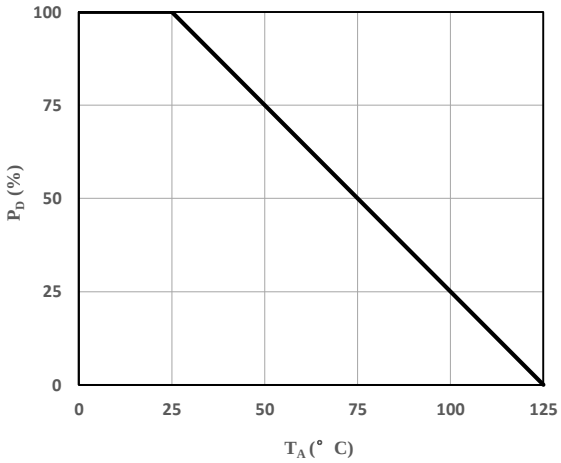
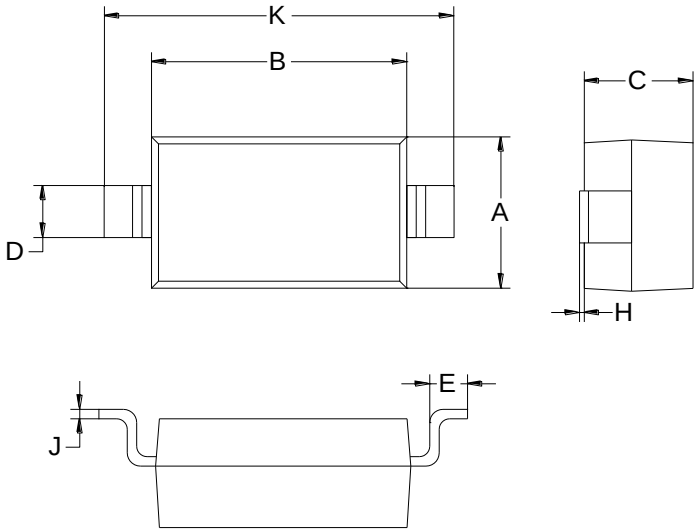


Fig 4 Derating Curve

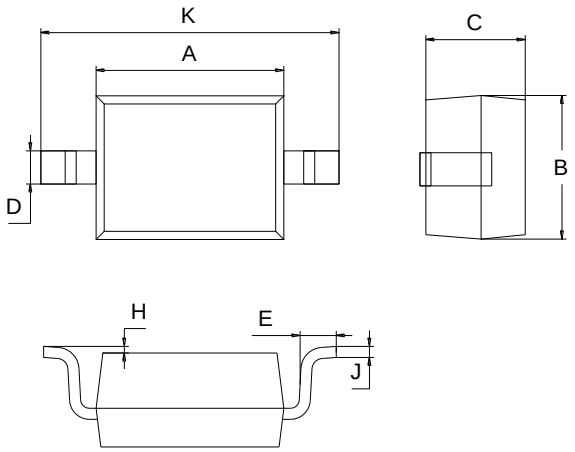
BAT42W BAT42WS BAT42X BAT42L

Small Signal Schottky Barrier Diode

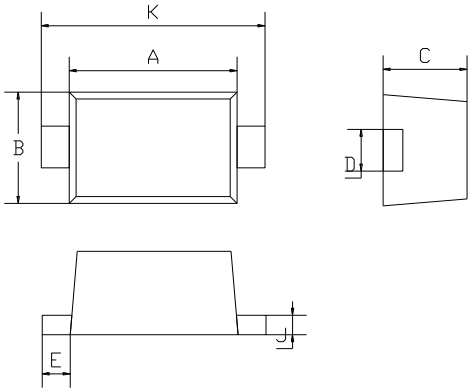
Package Outline Dimensions (Unit: mm)



SOD-123		
Dimension	**Min.**	**Max.**
A	1.45	1.75
B	2.55	2.85
C	1.00	1.30
D	0.50	0.60
E	0.25	0.45
H	0.02	0.10
J	0.05	0.15
K	3.55	3.85



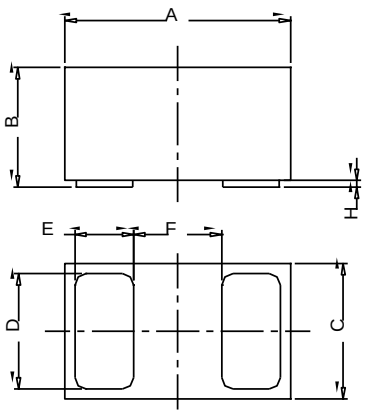
SOD-323		
Dimension	**Min.**	**Max.**
A	1.60	1.80
B	1.20	1.40
C	0.80	0.90
D	0.25	0.35
E	0.22	0.42
H	0.02	0.10
J	0.05	0.15
K	2.55	2.75



SOD-523		
Dimension	**Min.**	**Max.**
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
E	0.15	0.25
J	0.05	0.15
K	1.50	1.70

BAT42W BAT42WS BAT42X BAT42L

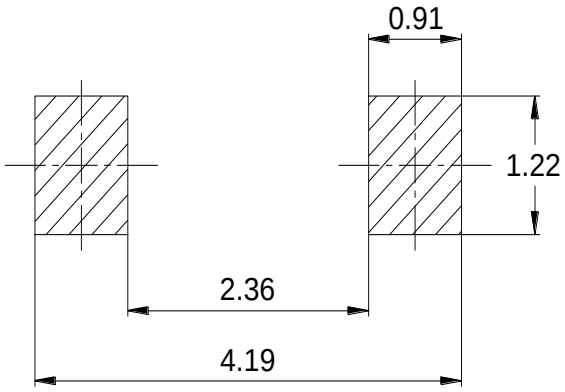
Small Signal Schottky Barrier Diode



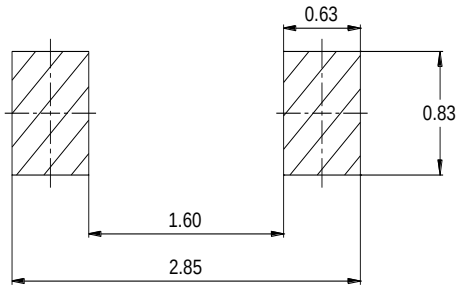
DFN1006-2			
Dimension	**Min.**	**Typ.**	**Max.**
A	0.95	1.00	1.075
B	0.47	0.50	0.53
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E	0.20	0.25	0.30
F	-	0.40	-
H	0	0.03	0.05

Package Outline Dimensions (Unit: mm)

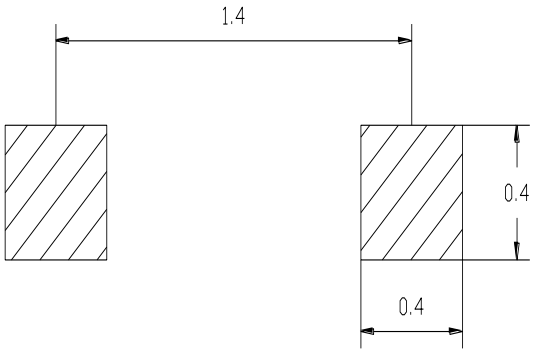
SOD-123



SOD-323



SOD-523



DFN1006-2

