

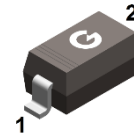
Features

- For general purpose applications
- This diodes features very low turn-on voltage and fast switching
- RoHS compliant with Halogen-free

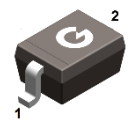
HF

Mechanical Data

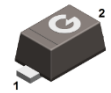
- Case: SOD-123, SOD-323, SOD-523, DFN1006-2
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



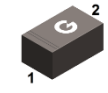
BAT46W
SOD-123



BAT46WS
SOD-323



BAT46X
SOD-523



BAT46L
DFN1006-2



Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT46W	SOD-123	3000 pcs / Tape & Reel	L6
BAT46WS	SOD-323	3000 pcs / Tape & Reel	L6
BAT46X	SOD-523	3000 pcs / Tape & Reel	L6
BAT46L	DFN1006-2	10000 pcs / Tape & Reel	L6

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

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V _{RRM}	100	V
Continuous Forward Current	I _F	200	mA
Repetitive Peak Forward Current	I _{FRM}	400	mA
Peak Forward Surge Current (8.3ms single half sine-wave)	I _{FSM}	5	A

Thermal Characteristics

Parameter	Symbol	BAT46W	BAT46WS	BAT46X	BAT46L	Unit
Power Dissipation (T _A = 25°C) *1	P _D	476	384	350	200	mW
Thermal Resistance Junction-to-Air *1	R _{θJA}	210	260	286	500	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	125	170	208	400	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	160	220	215	415	°C/W
Operating junction Temperature	T _J	-55 ~ +125				°C
Storage Temperature Range	T _{STG}	-55 ~ +150				°C

Note 1: The data tested by surface mounted on a 1 inch² FR-4 board with 2OZ copper

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu\text{A}$	100	-	-	V
Forward Voltage	V_F	$I_F = 0.1\text{mA}$	-	-	0.25	V
		$I_F = 10\text{mA}$	-	-	0.45	V
		$I_F = 250\text{mA}$	-	-	1.00	V
Maximum Peak Reverse Current	I_R	$V_R = 1.5\text{V}$	-	-	0.5	μA
		$V_R = 1.5\text{V}, T_J = 60^\circ\text{C}$	-	-	5	μA
		$V_R = 10\text{V}$	-	-	0.8	μA
		$V_R = 10\text{V}, T_J = 60^\circ\text{C}$	-	-	7.5	μA
		$V_R = 50\text{V}$	-	-	2	μA
		$V_R = 50\text{V}, T_J = 60^\circ\text{C}$	-	-	15	μA
		$V_R = 75\text{V}$	-	-	5	μA
		$V_R = 75\text{V}, T_J = 60^\circ\text{C}$	-	-	20	μA
Capacitance Between Terminals	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$	-	13	-	pF
		$V_R = 1\text{V}, f = 1\text{MHz}$	-	6	-	pF

Ratings and Characteristic Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

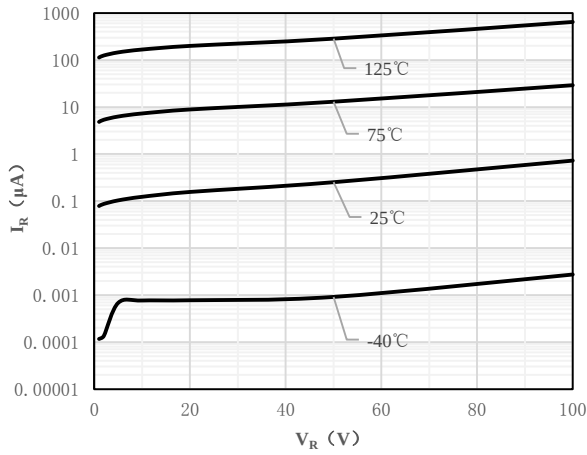


Fig 1 Typical Reverse Characteristic

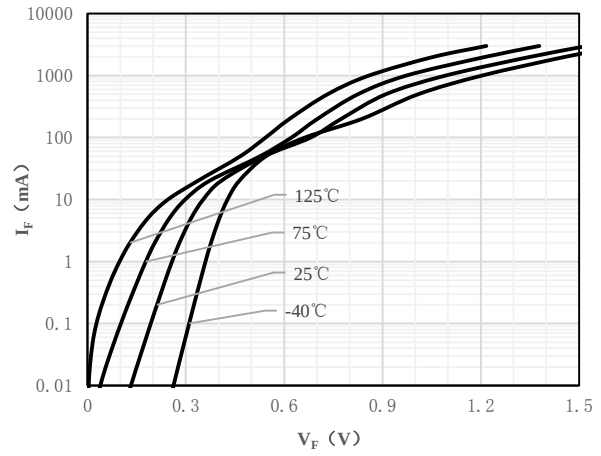


Fig 2 Typical Forward Characteristics

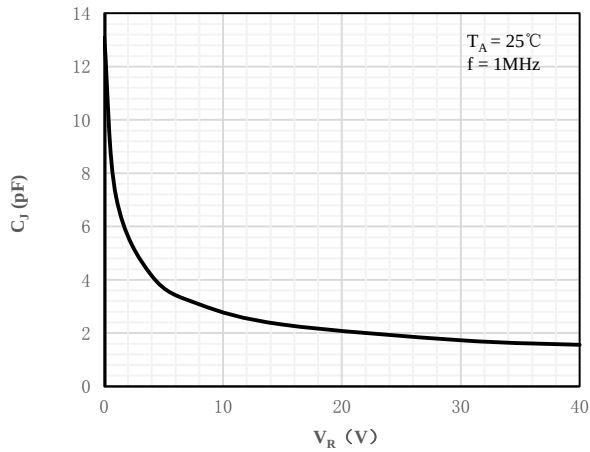


Fig 3 Capacitance vs. Reverse Voltage

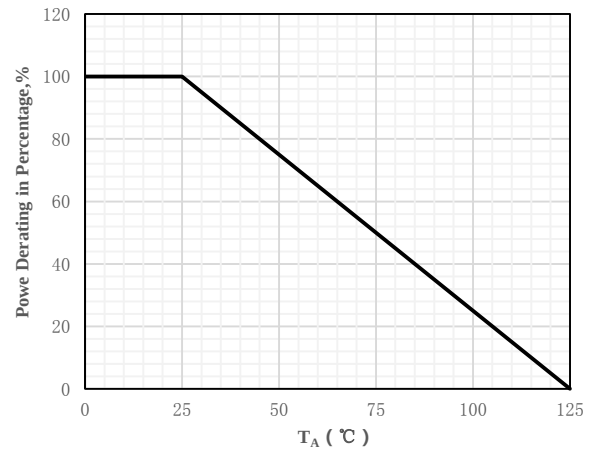
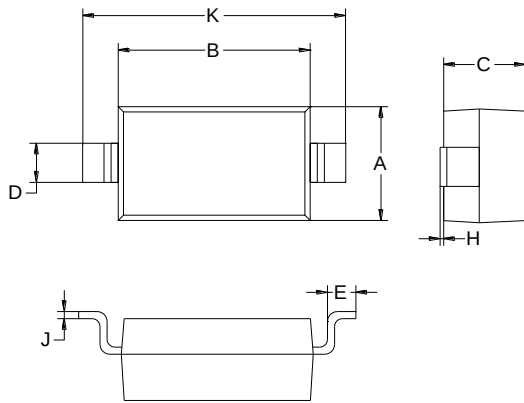
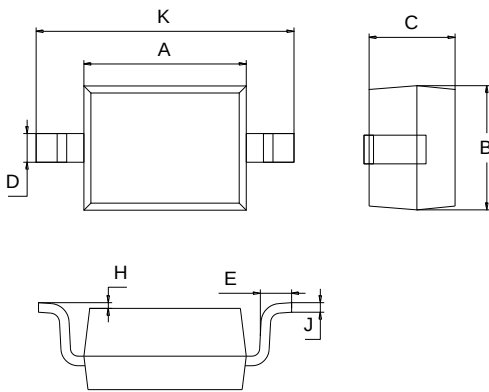


Fig 4 Power Derating Curve

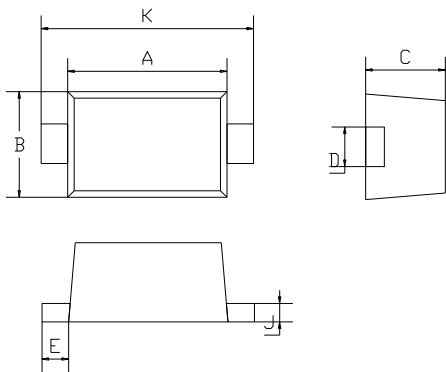
Package Outline Dimensions (Unit: mm)



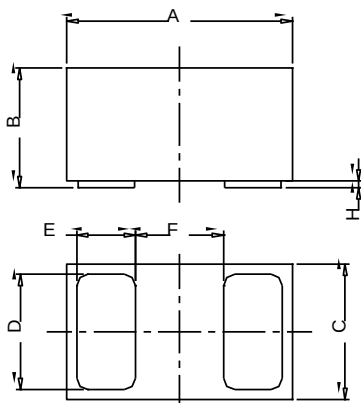
SOD-123		
Dimension	Min.	Max.
A	1.45	1.75
B	2.55	2.85
C	1.00	1.30
D	0.50	0.60
E	0.25	0.45
H	0.02	0.10
J	0.05	0.15
K	3.55	3.85



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



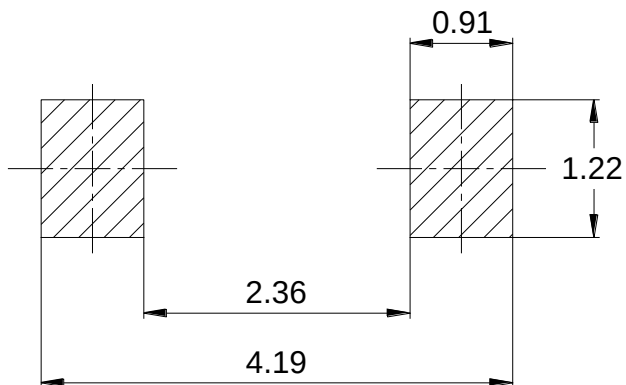
SOD-523		
Dimension	Min.	Max.
A	1.10	1.30
B	0.70	0.90
C	0.50	0.70
D	0.25	0.35
E	0.15	0.25
J	0.05	0.15
K	1.50	1.70



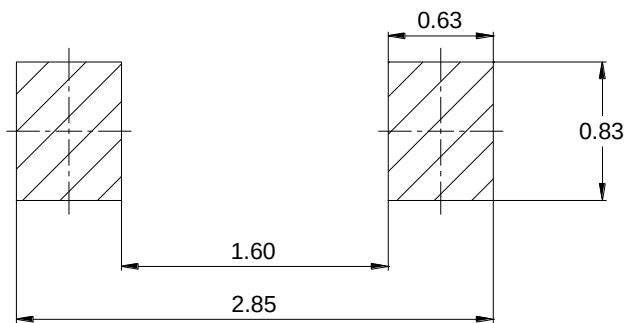
DFN1006-2			
Dimension	Min.	Typ.	Max.
A	0.95	1.00	1.075
B	0.45	0.50	0.55
C	0.55	0.60	0.675
D	0.45	0.50	0.55
E	0.20	0.25	0.30
F	-	0.40	-
H	0	0.03	0.05

Mounting Pad Layout (Unit: mm)

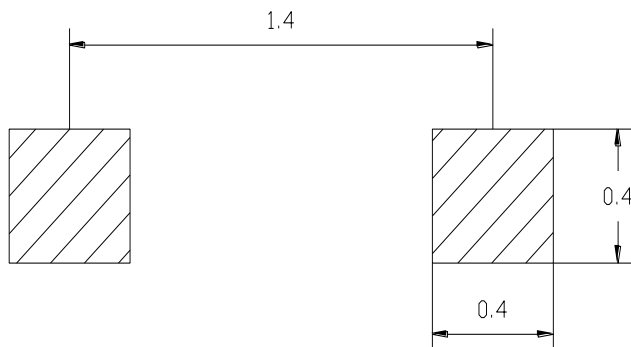
SOD-123



SOD-323



SOD-523



DFN1006-2

