

BAS521

225mA 250V High Voltage Switching Diode

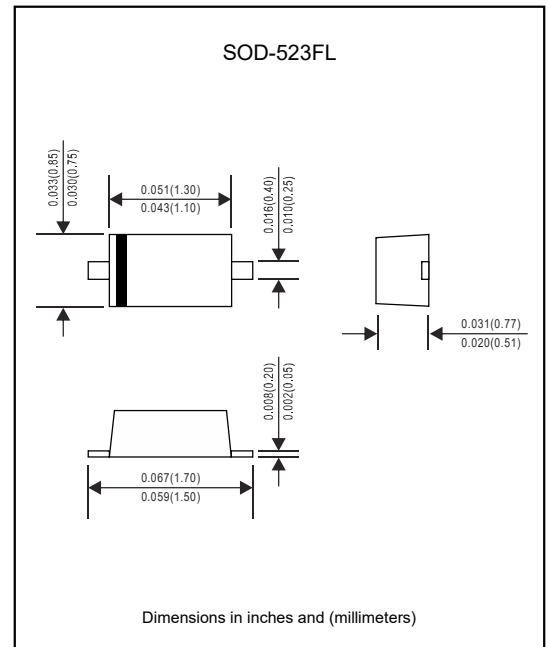
Features

- High speed switching.
- High voltage switching.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" for Halogen-free part, ex. BAS521-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant.
- Case : Molded plastic, SOD-523FL.
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



Maximum ratings and electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

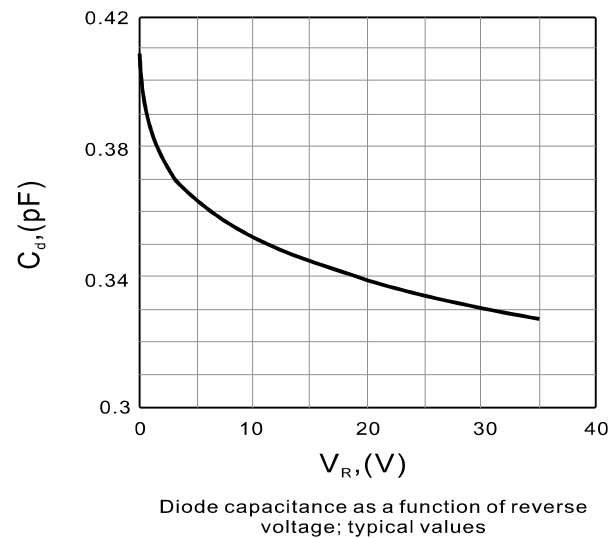
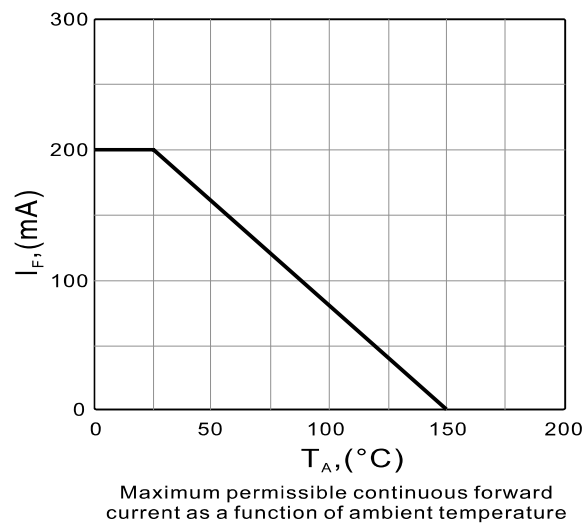
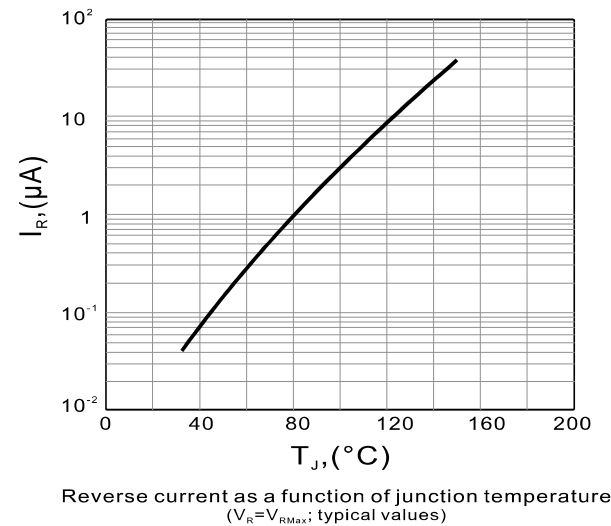
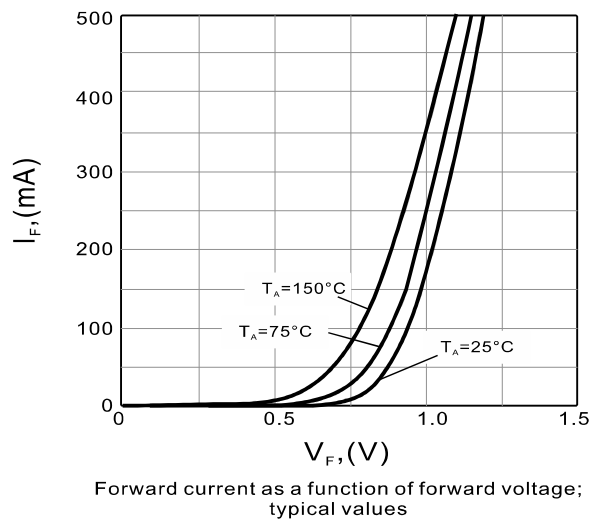
Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	300	V
Reverse voltage	V_R	300	V
Continuous forward current	I_F	225	mA
Repetitive peak forward current	I_{FRM}	625	mA
Non-repetitive peak forward surge current ($t = 1\mu\text{s}$)	I_{FSM}	4	A
Power dissipation	P_{tot}	250	mW
Operating junction temperature	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-65 to +150	$^\circ\text{C}$

Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Type.	Max.	Unit
Forward voltage	$I_F = 100\text{mA}$	V_F			1.1	V
Reverse breakdown voltage	$I_R = 100\mu\text{A}$	$V_{(BR)R}$	300			V
Reverse current	$V_R = 250\text{V}$	I_R			150	nA
Reverse recovery time	$I_F = I_R = 30\text{mA}$, $R_L = 100\Omega$, $I_{rr} = 0.1 I_R$	t_{rr}			50	ns
Total capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_T			5	pF

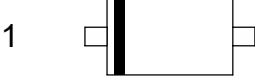
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Rating and characteristic curves



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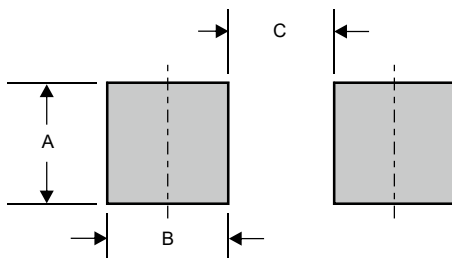
Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

Marking

Type number	Marking code
BAS521	a

Suggested solder pad layout

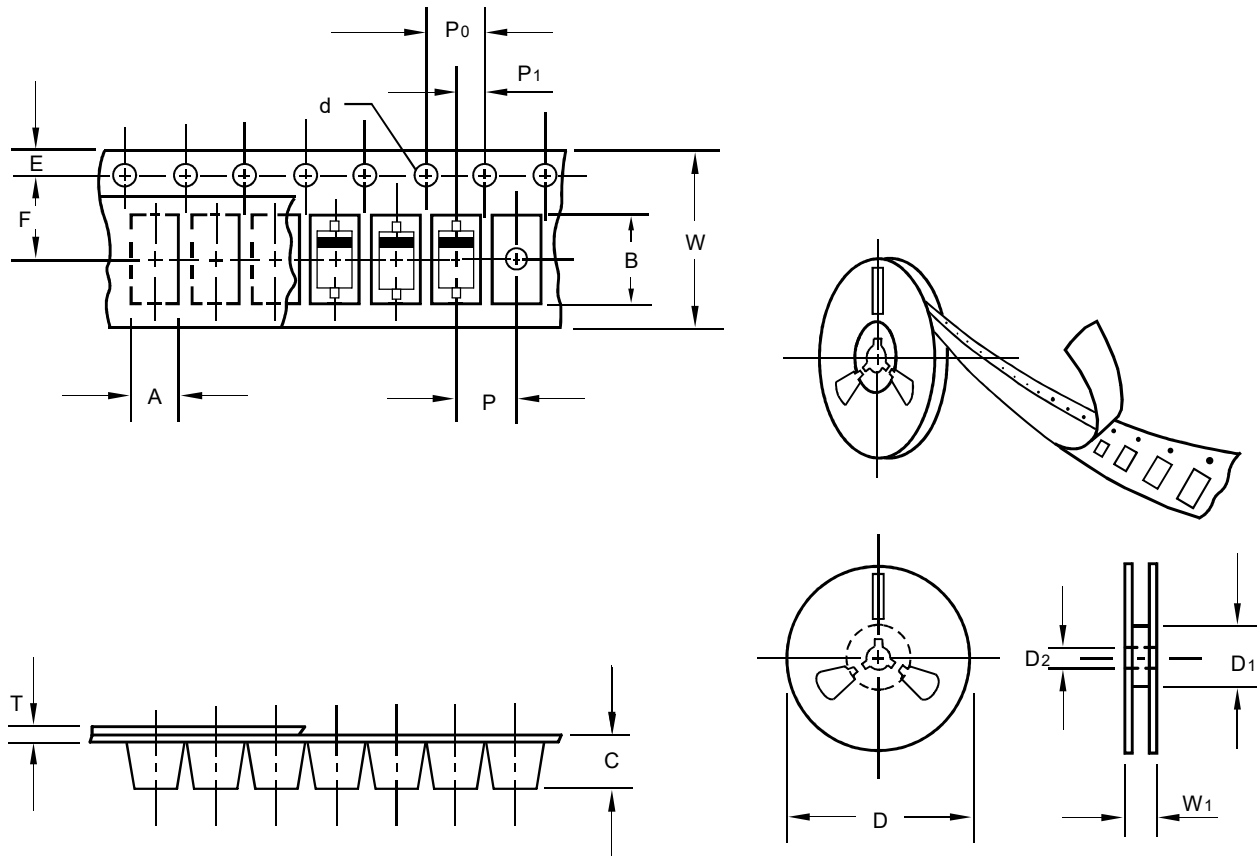


Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-523FL	0.032 (0.80)	0.024 (0.60)	0.044 (1.10)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOD-523FL
Carrier width	A	0.1	0.90
Carrier length	B	0.1	1.94
Carrier depth	C	0.1	0.73
Sprocket hole	d	0.1	1.50
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	54.40
Feed hole diameter	D ₂	0.2	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	2.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	12.3

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

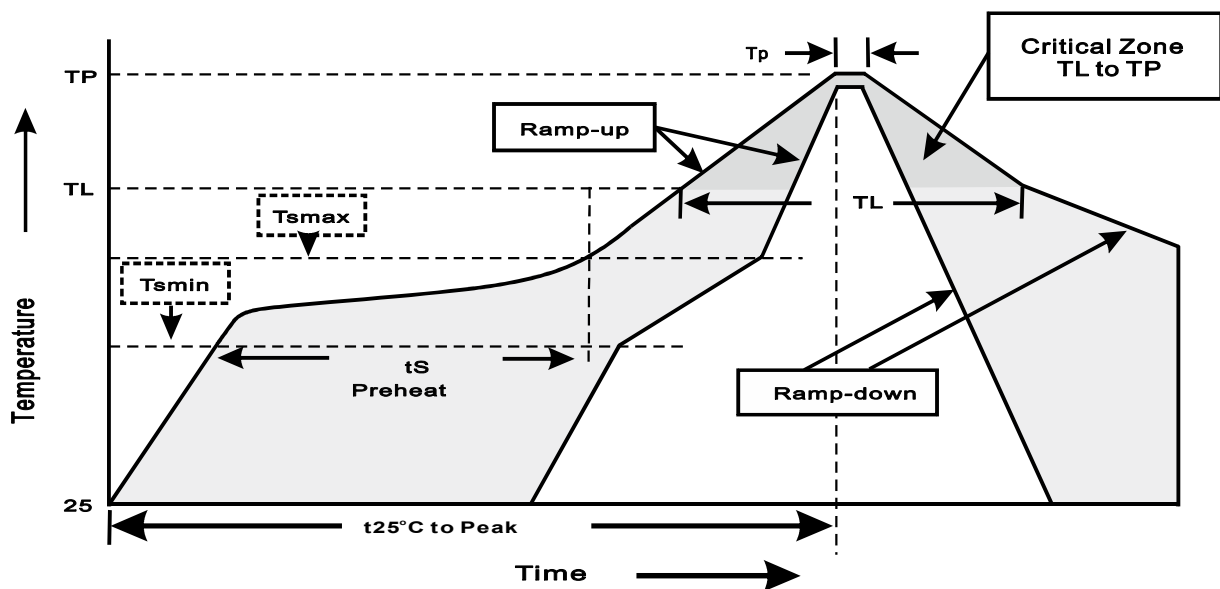
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-523FL	7"	8,000	2.0	80,000	183*123*183	178	382*257*387	640,000	10

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	$<3^{\circ}\text{C/sec}$
Preheat - Temperature Min(T_{smin}) - Temperature Max(T_{smax}) - Time(min to max)(t_s)	150°C 200°C $60\sim 120\text{sec}$
T_{smax} to T_L - Ramp-upRate	$<3^{\circ}\text{C/sec}$
Time maintained above: - Temperature(T_L) - Time(t_L)	217°C $60\sim 260\text{sec}$
Peak Temperature(T_P)	$255^{\circ}\text{C}-0/+5^{\circ}\text{C}$
Time within 5°C of actual Peak Temperature(t_P)	$10\sim 30\text{sec}$
Ramp-down Rate	$<6^{\circ}\text{C/sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$