

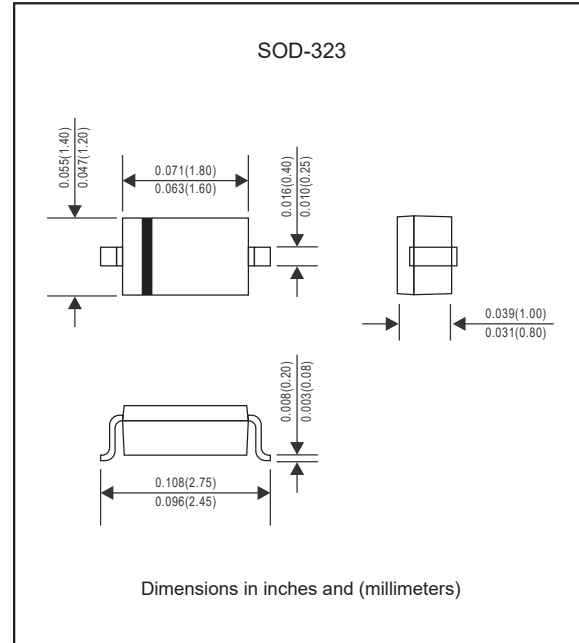
Features

- Low current rectification and high speed switching
- Small surface mount type
- Up to 150mA current capability
- Low forward voltage drop (0.45V typ. @ $I_F=1\text{mA}$)
- Silicon epitaxial planar chip, metal silicon junction
- Lead-free parts meet RoHS requirements
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any

Package outline



Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Repetitive peak reverse voltage		V_{RRM}			100	V
Reverse voltage		V_R			100	V
Repetitive peak forward current	Note1	I_{FRM}			350	mA
Non-repetitive peak forward current	Note2	I_{FSM}			750	mA
Forward current		I_F			150	mA
Power dissipation		P_D			200	mW
Thermal resistance	Junction to ambient	$R_{\theta JA}$		500		$^\circ\text{C}/\text{W}$
Operating junction temperature range		T_J	-55		+125	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55		+125	$^\circ\text{C}$

Note1 Repetitive peak forward current @ $t_p < 1.0\text{s}$, Duty Cycle < 50%

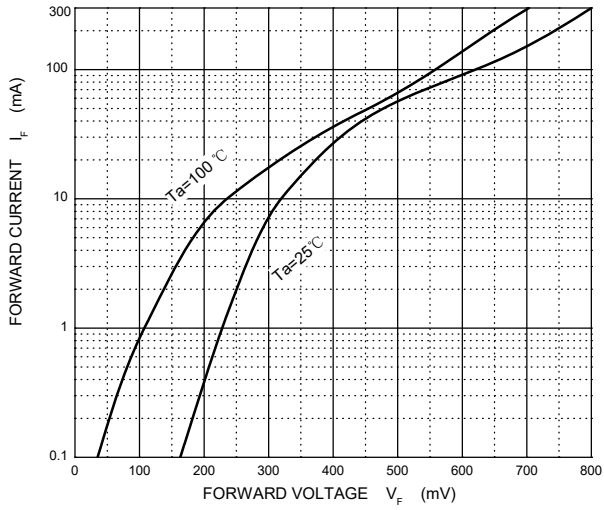
Note2 Non-repetitive Peak Forward surge current @ $t = 8.3\text{ms}$

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

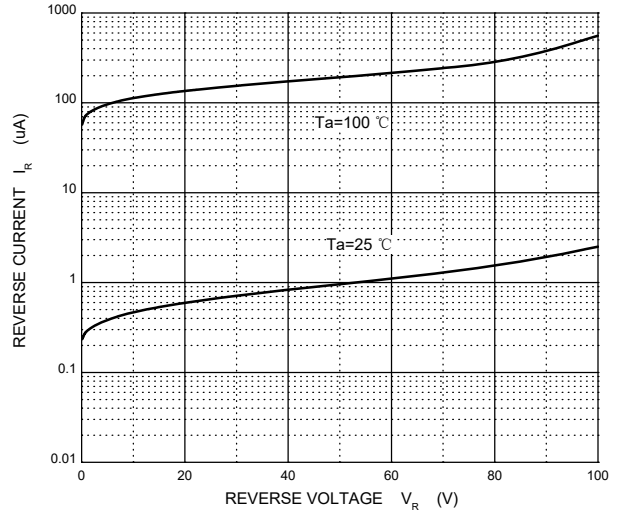
PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 0.1\text{mA}$	V_F			0.250	V
	$I_F = 1\text{mA}$	V_F			0.450	V
	$I_F = 250\text{mA}$	V_F			1.000	V
Reverse current	$V_R = 75\text{V}$	I_R			2.0	μA
Total capacitance	$V_R = 1\text{V}$, $f = 1\text{MHz}$	C_T		12.0		pF
Reverse recovery time	$I_F = I_R = 10\text{mAdc}$, $I_{R(\text{REC})} = 1.0\text{mAdc}$	trr			5.0	ns

Rating and characteristic curves for each diode

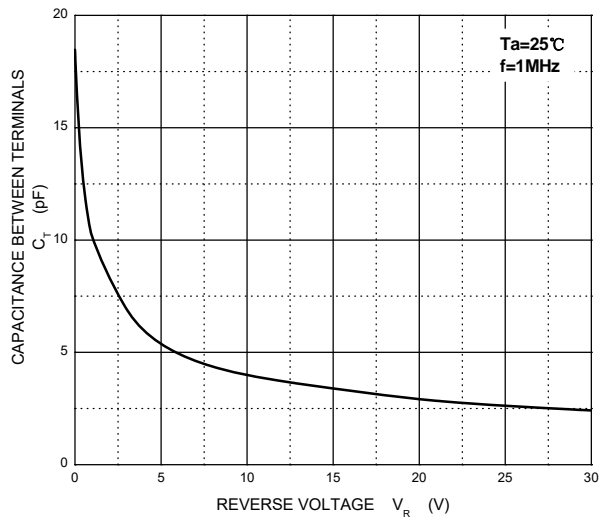
Forward Characteristics



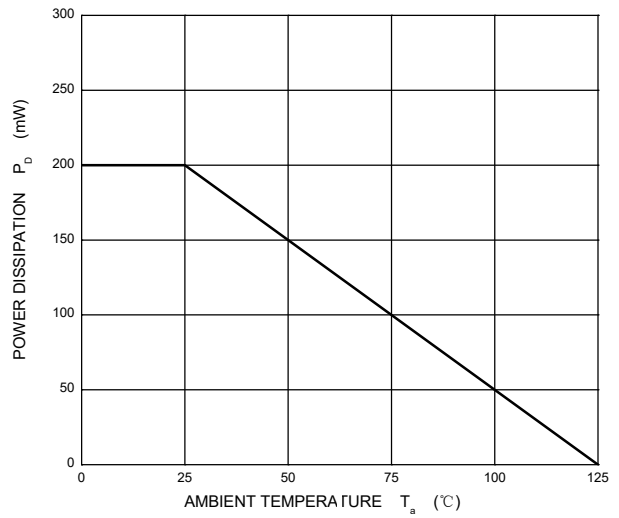
Reverse Characteristics



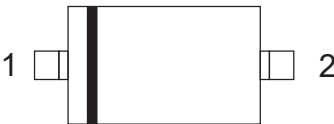

Capacitance Characteristics



Power Derating Curve



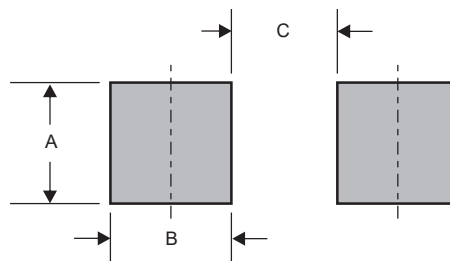
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
BAT46WS-Q1	S9

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323	0.032 (0.82)	0.022 (0.56)	0.069 (1.75)