

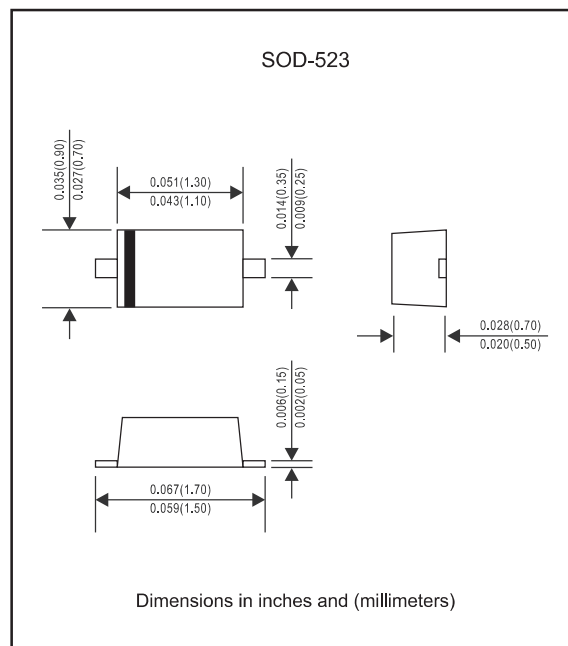
Features

- Ultra small plastic SMD package
- High continuous reverse voltage: 300V
- Repetitive peak forward current: 250 mA
- High switching speed: max. 50ns
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Mechanical data

- Case: SOD-523
- Molding Compound: UL 94-V0 rated flame retardant.
- Terminals: Matte tin-plated leads; solderable Per MIL-STD-202, Method 208

Package outline



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

Parameter	Symbol	Value	Unit
Peak Repetitive Peak Reverse Voltage	V _{RRM}	300	V
DC Blocking Voltage	V _R	300	V
Continuous Forward Current	I _F	250	mA
Peak Forward Surge Current, t _p = 1μs	I _{FSM}	4.5	A
Peak Forward Surge Current, t _p = 8.3ms		2	A
Repetitive Forward Current, t _p = 1ms	I _{FRM}	1	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation (T _L = 25°C) *1	P _D	500	mW
Thermal Resistance Junction-to-Air *1	R _{θJA}	350	°C/W
Thermal Resistance Junction-to-Case *1	R _{θJC}	230	°C/W
Thermal Resistance Junction-to-Lead *1	R _{θJL}	250	°C/W
Operating Junction Temperature Range	T _J	-65 ~ +150	°C
Storage Temperature Range	T _{STG}	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 15mm * 15mm * 1mm FR4-epoxy P.C.B

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

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu\text{A}$	300	-	-	V
Forward Voltage	V_F	$I_F = 100\text{mA}$	-	-	1.10	V
Maximum Peak Reverse Current	I_R	$V_R = 250\text{V}, T_J = 25^\circ\text{C}$	-	-	0.15	μA
		$V_R = 250\text{V}, T_J = 150^\circ\text{C}$	-	-	100	μA
Total Capacitance	C_J	$V_R = 0\text{V}, f = 1.0\text{MHz}$	-	-	5	pF
Reverse Recovery Time	t_{rr}	$I_F = I_R = 30\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	-	-	50	ns

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

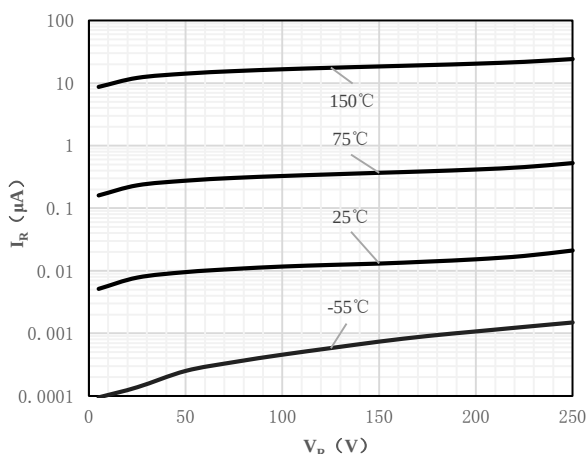


Fig 1 Typical Reverse Characteristic

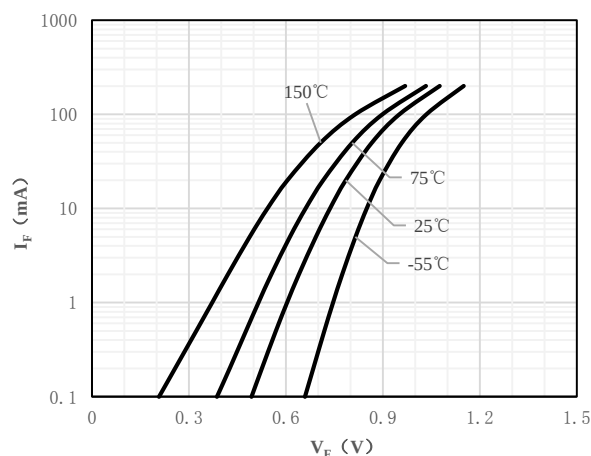


Fig 2 Typical Forward Characteristics

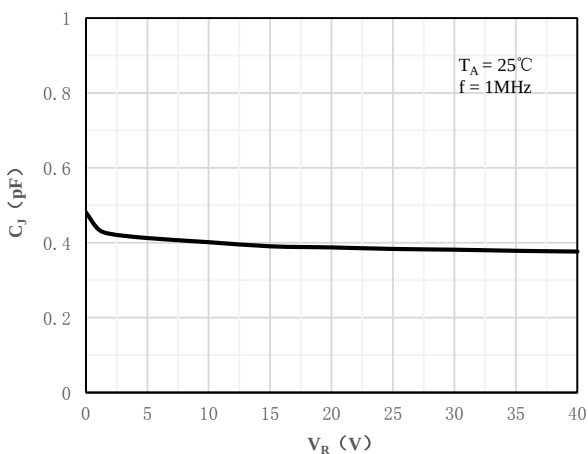


Fig 3 Capacitance vs. Reverse Voltage

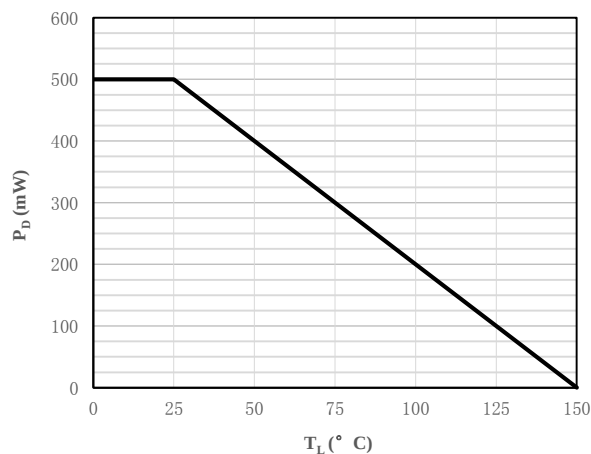


Fig 4 Forward Current Derating Curve

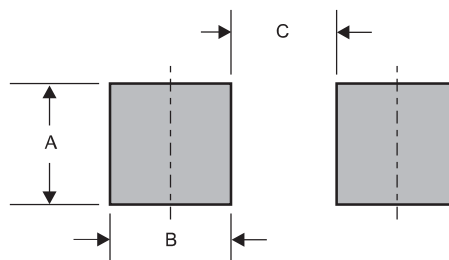
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
BAS521-Q1	L4

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-523	0.016(0.40)	0.016(0.40)	0.039(1.00)