SMB SURFACE MOUNT SILICON ZENER DIODES

Features

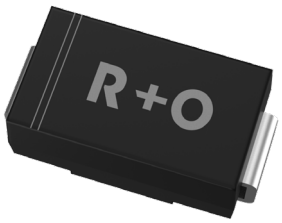
- Low Zener impedance
- Power dissipation: 5 W
- High stability and high reliability
- Small plastic package, suitable for surface mount applications

Zener Diode
5.1 Volts
Power Dissipation
5.0 Watts

Applications

Zener diode is generally used as reference voltage sources in regulated power supplies or as protective diode in overvoltage protection circuits.

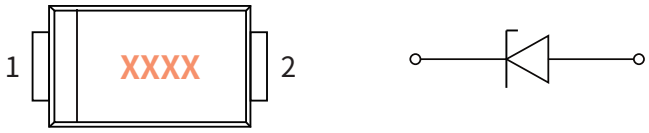
DO-214AA(SMB)



Mechanical Data

- Case: DO-214AA(SMB)
  Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026
- Polarity: Cathode line denotes the cathode end

Function Diagram

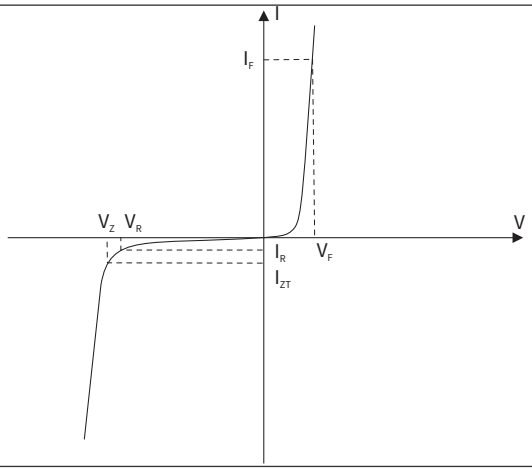


Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Power Dissipation at Tc=75°C	P_D	W	5
Forward Voltage @ I_F=200mA	V_F	V	1.2
Storage Temperature	T_{stg}	°C	-55 ~+150
Junction Temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	90

Electrical Parameter

SYMBOL	PARAMETER
V_Z	Reverse zener voltage @ I_{ZT}
I_{ZT}	Reverse current
Z_{ZT}	Maximum Zener Impedance @ I_{ZT}
I_{ZK}	Reverse Current
Z_{ZK}	Maximum Zener Impedance @ I_{ZK}
I_R	Reverse leakage current @ V_R
V_R	Reverse voltage
I_F	Forward current
V_F	Forward voltage @ I_F



Electrical Characteristics (Ta=25°C Unless otherwise noted)

Type Number	Type Code	Regulator Voltage	Test Current	Maximum Zener Impedance			Maximum Reverse Leakage Current		Maximum DC Zener Current	Maximum Surge Current	Maximum Voltage Regulation
		V_Z @I_{ZT}	I_{ZT}	Z_{ZT}@I_{ZT}	Z_{ZK}@I_{ZK}	I_{ZK}	I_R@V_R		I_{ZM}	I_{ZSM}	
		(V)	(mA)	(Ω)		(mA)	(μA)	(V)	(mA)	(A)	(V)
SMBJ5338B	338B	5.1	240	1.5	400	1.0	1.0	1.0	930	14.4	0.39

Note :
(1)The type number listed have a standard tolerance on the nominal zener voltage of ±5%
(2)The reverse surge current is a non-repetitive equivalent sine wave, 8.3 ms pulse width, superimposed on IZT per specified method.

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

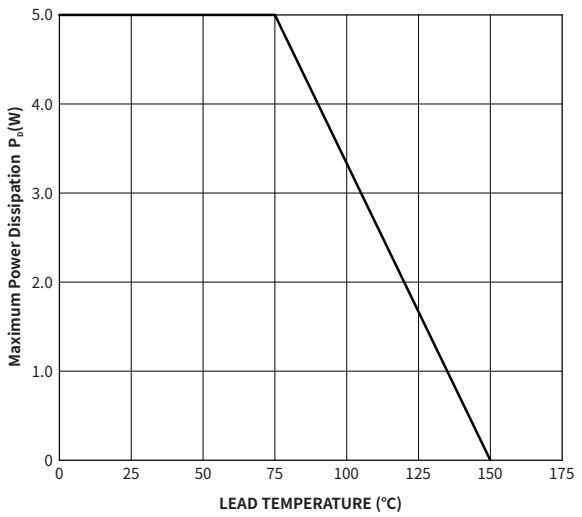


Fig. 1 Power Temperature Derating Crue

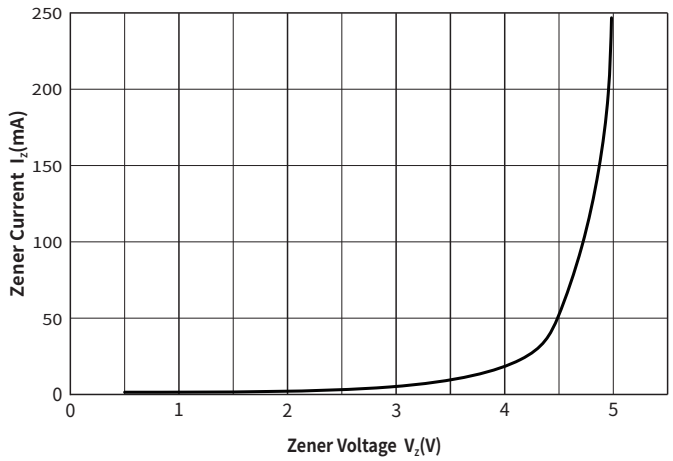


Fig.2 Zener Characteristics (Typ.)

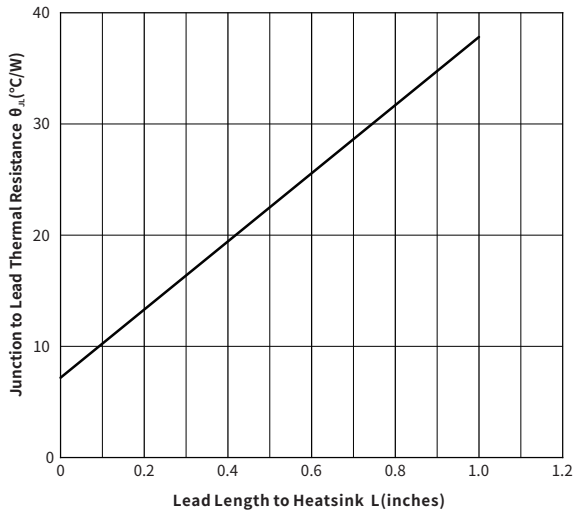


Fig.3 Typical Thermal Resistance v.s. Lead Length

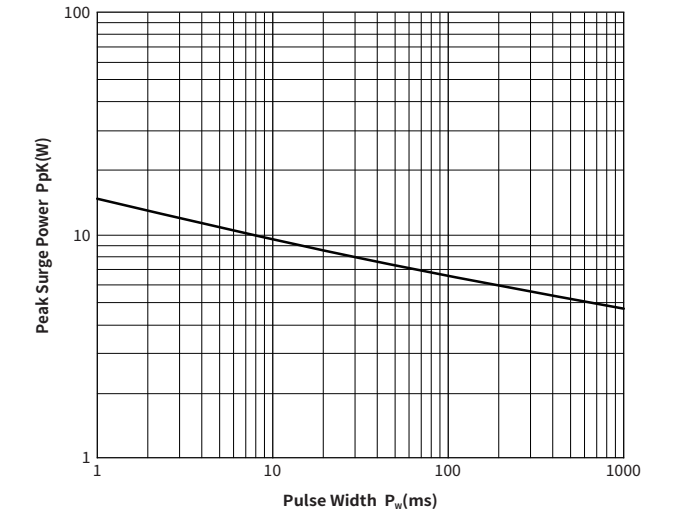


Fig.4 Maximum Surge Power

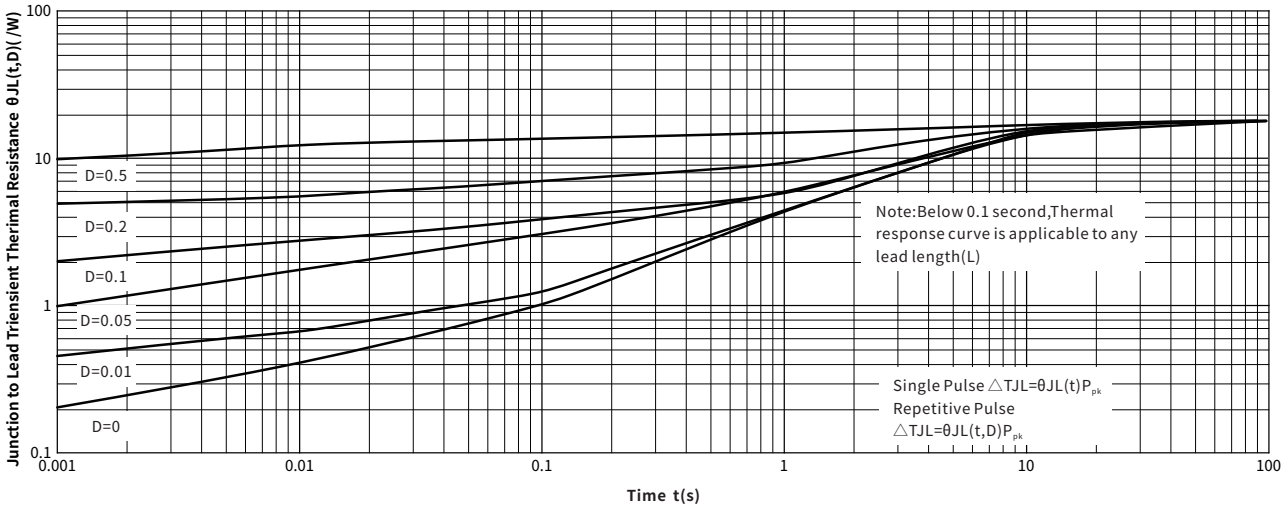
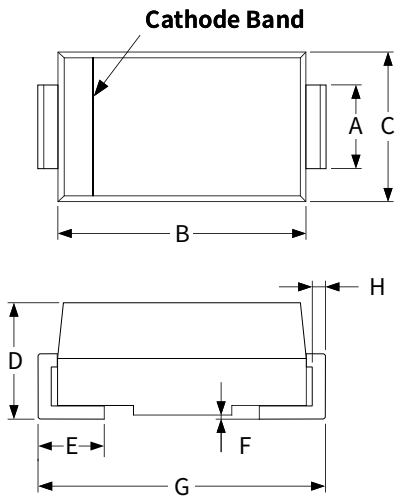


Fig.5 Typical Thermal Response L,Lead Length=3/8inch

Ordering Information

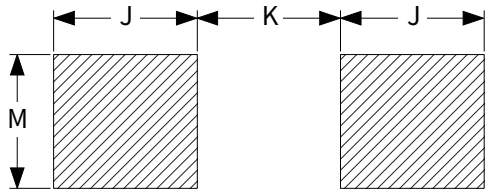
PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SMB	R3	0.098	3000	6000	48000	13''

Package Outline Dimensions (SMB/DO-214AA)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.85	2.21	0.073	0.087
B	4.25	4.85	0.167	0.191
C	3.30	3.94	0.130	0.155
D	2.15	2.65	0.085	0.104
E	0.75	1.52	0.030	0.060
F	-	0.203	-	0.008
G	5.08	5.59	0.200	0.220
H	0.15	0.31	0.006	0.012

Suggested Pad Layout



The pad layout is for reference only.

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
M	2.45	2.55	0.096	0.100
J	1.75	1.85	0.069	0.073
K	2.41	2.51	0.095	0.099