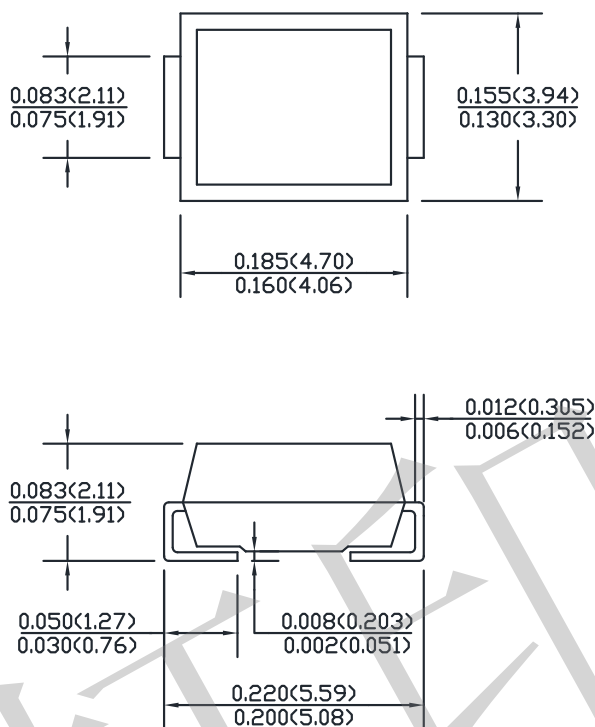




Transient Voltage Suppressor

Breakdown Voltage 3.3 to 30 Volts

CASE: SMB (DO214AA)



Dimensions in inches and (millimeters)

Features

- Extensive Voltages selection from 3.3 to 30V
- Silicon 2.0 Watt Zener Diodes
- Ideal for high-density and low-profile mounting
- Regulates voltage over a broad operating current and temperature range

Application

- Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFE, signal lines of sensor units for consumer, computer, industrial, automotive and telecommunication

Mechanical Data

- **Case:** Void-free transfer molded thermosetting epoxy body meeting UL94V-O
- **Terminals:** Tin-Lead or ROHS Compliant annealed matte-Tin plating readily solderable per MIL-STD-750, Method 2026
- **Marking:** Body marked with part number
- **Polarity:** Cathode indicated by band
- **Weight:** 0.093g (Approximately)

Maximum Ratings and Electrical Characteristics @ 25°C unless otherwise specified

Symbol	Conditions	Value	Unit
$P_{M(AV)}$	Steady state power at $T_L \leq 80^\circ\text{C}$ 0.375" (10mm) from body	2.0	W
	Steady state power at $T_A=25^\circ\text{C}$ when mounted on FR4 PC described for thermal resistance (also see Fig.1)	1.25	W
I_{ZSM}	Peak surge current	SEE TABLE1	A
V_F	Maximum instantaneous forward voltage at 200mA	1.2	V
$R_{\theta JL}$	Thermal resistance junction to lead	35	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal resistance junction to ambient	100	$^\circ\text{C/W}$
T_J, T_{STG}	Operating and Storage Temperature	-65 to +150	$^\circ\text{C}$

Electrical Characteristics @ 25°C (Unless Otherwise Noted) TABLE1

JEDEC Type Number (Note1)	Zener Voltage $V_Z @ I_{ZT}$ (Note4)	Test Current	Maximum Dynamic Impedance $Z_{ZT} @ I_{ZT}$ (Note2)	Maximum Knee Impedance $Z_{ZK} @ I_{ZK}$ (Note2)	Knee Current	Maximum Reverse Current $I_R @ V_R$		Maximum Regulator Current $T_A = 50^\circ\text{C}$	Maximum Surge Current (Note3)
	V_Z (V)	I_{ZT} (mA)	Z_{ZT} (OHMS)	Z_{ZK} (OHMS)	I_{ZK} (mA)	I_R (μA)	V_R (V)	I_{ZM} (mA)	I_{ZSM} (mA)
SMBJ4728A	3.3	76.0	10.0	400	1.00	100	1.0	276	1380
SMBJ4729A	3.6	69.0	10.0	400	1.00	100	1.0	252	1260
SMBJ4730A	3.9	64.0	9.0	400	1.00	50	1.0	234	1190
SMBJ4731A	4.3	58.0	9.0	400	1.00	10	1.0	217	1070
SMBJ4732A	4.7	53.0	8.0	500	1.00	10	1.0	193	970
SMBJ4733A	5.1	49.0	7.0	550	1.00	10	1.0	178	890
SMBJ4734A	5.6	45.0	5.0	600	1.00	10	2.0	162	810
SMBJ4735A	6.2	41.0	2.0	700	1.00	10	3.0	146	730
SMBJ4736A	6.8	37.0	3.5	700	1.00	10	4.0	133	660
SMBJ4737A	7.5	34.0	4.0	700	0.50	10	5.0	121	605
SMBJ4738A	8.2	31.0	4.5	700	0.50	10	6.0	110	550
SMBJ4739A	9.1	28.0	5.0	700	0.50	10	7.0	100	500
SMBJ4740A	10.0	25.0	7.0	700	0.25	10	7.6	91	454
SMBJ4741A	11.0	23.0	8.0	700	0.25	5	8.4	83	414
SMBJ4742A	12.0	21.0	9.0	700	0.25	5	9.1	76	380
SMBJ4743A	13.0	19.0	10.0	700	0.25	5	9.9	69	344
SMBJ4744A	15.0	17.0	14.0	700	0.25	5	11.4	61	304
SMBJ4745A	16.0	15.5	16.0	700	0.25	5	12.2	57	285
SMBJ4746A	18.0	14.0	20.0	750	0.25	5	13.7	50	250
SMBJ4747A	20.0	12.5	22.0	750	0.25	5	15.2	45	225
SMBJ4748A	22.0	11.5	23.0	750	0.25	5	16.7	41	205
SMBJ4749A	24.0	10.5	25.0	750	0.25	5	18.2	38	190
SMBJ4750A	27.0	9.5	35.0	750	0.25	5	20.6	34	170
SMBJ4751A	30.0	8.5	40.0	1000	0.25	5	22.8	30	150

Note:

1. The JEDEC type numbers shown with an A suffix have a 5% tolerance on nominal zener voltage. No suffix signifies a 10% tolerance, C signifies 2%, and D signifies 1% tolerance.
2. The Zener impedance is derived from the 60 HZ ac voltage, which results when an ac current having an rms value equal to 10% of the dc Zener current (I_{ZT} or I_{ZK}) is superimposed on I_{ZT} or I_{ZK} . Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and eliminate unstable units.
3. The reverse surge current is measured at 25°C ambient using a square wave or equivalent half-sine wave pulse 1/120 second duration superimposed on I_{ZT} .
4. Zener voltage (V_Z) is measured at $T_L = 25^\circ\text{C}$ (+8, -2°C) and 90seconds after application of dc current.

Characteristic Curve

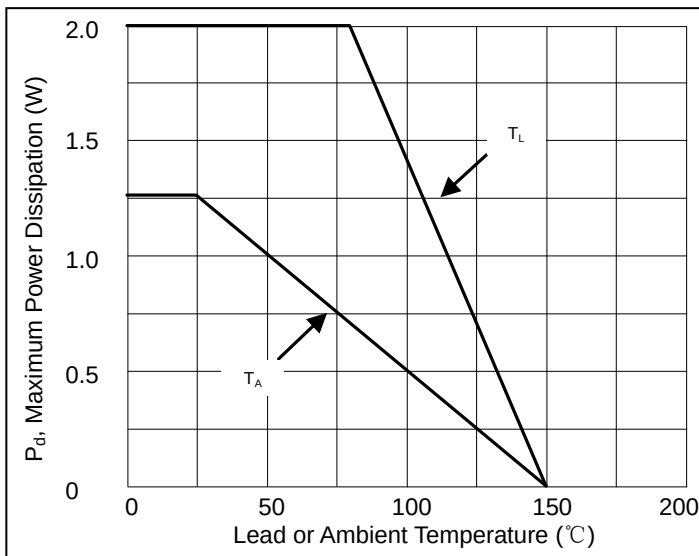


Fig.1 Power Derating Curve

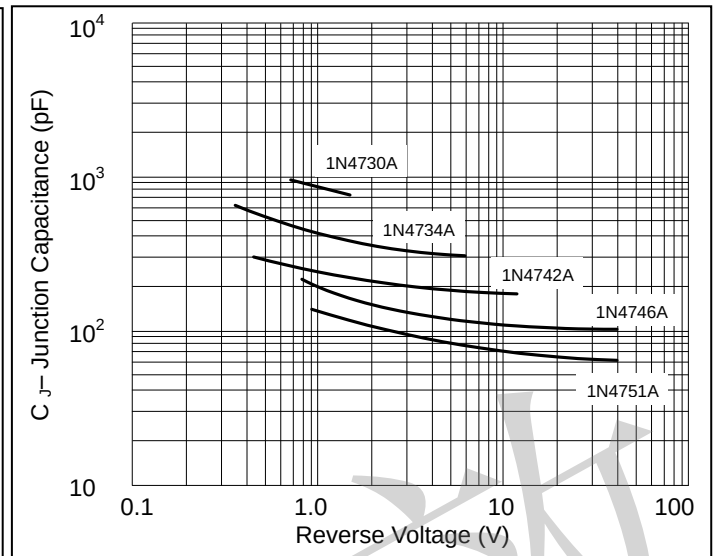


Fig.2 Typical Capacitance vs. Voltage for Representative Types

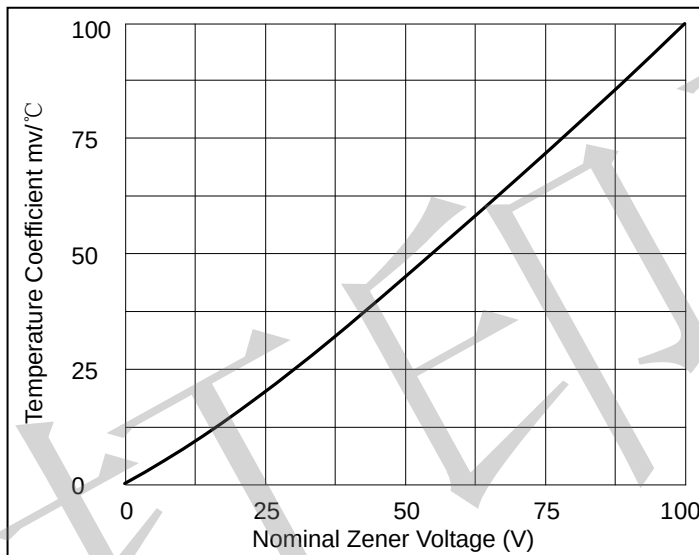


Fig.3 Temperature Coefficient vs. Zener Voltage