

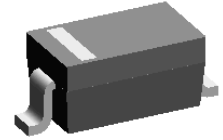
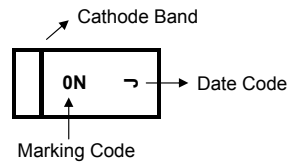
200 mW Surface Mount Zener Voltage Regulators 2.4V~75V

PRIMARY CHARACTERISTICS	
P_D	200mW
V_Z	2.4V~75V
I_{ZT}	See Table
$T_{J,Max}$	150°C

SOD-323 PACKAGE

● Body Marking : See Table

Ex : A-MM3Z12VT1



Data Code List		
Month	Odd Year	Even Year
Jan	1	E
Feb	2	F
Mar	3	H
Apr	4	J
May	5	K
Jun	6	L
Jul	7	N
Aug	8	P
Sep	9	U
Oct	T	X
Nov	V	Y



FEATURES

- Standard Zener Breakdown Voltage Range – 2.4 V to 75 V
- Steady State Power Rating of 200 mW
- ESD Rating of Class 3 (>16 kV) per Human Body Model
- Moisture Sensitivity Level 1

MECHANICAL DATA

- Case : Void-free, transfer-molded plastic, SOD-323
- Polarity : As Above Marked
- Mounting Position : Any
- Epoxy : UL94-V0 rated flame retardant
- Finish : All external surfaces are corrosion resistant
260°C for 10 Seconds

This series of Zener diodes is packaged in a SOD-323 surface mount package that has a power dissipation of 200 mW. They are designed to provide voltage regulation protection and are especially attractive in situations where space is at a premium. They are well suited for applications such as cellular phones, hand held portables, and high density PC boards.

MAXIMUM RATINGS

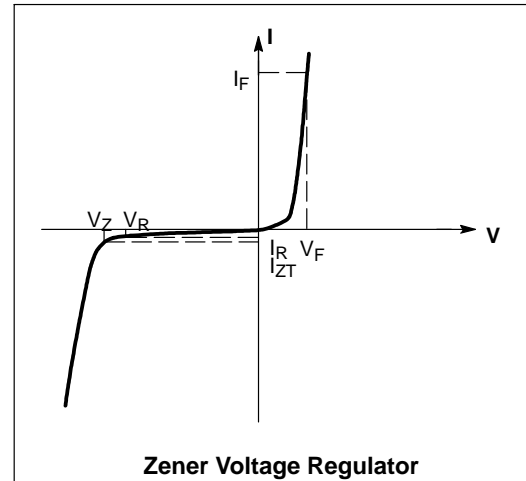
Rating	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1.) @ TA = 25°C Derate above 25°C	P_D	200 1.5	mW mW/°C
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	635	°C/W
Junction and Storage Temperature Range	T_J, T_{stg}	-65 to +150	°C

1. FR-4 Minimum Pad

ELECTRICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless otherwise noted,
 $V_F = 0.9\text{ V Max. @ } I_F = 10\text{ mA}$ for all types)

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
ΘV_Z	Maximum Temperature Coefficient of V_Z
C	Max. Capacitance @ $V_R = 0$ and $f = 1\text{ MHz}$


Zener Voltage Regulator

200 mW Surface Mount Zener Voltage Regulators 2.4V~75V

ELECTRICAL CHARACTERISTICS (TA = 25°C unless otherwise noted, VF = 0.9 V Max. @ IF = 10 mA for all types)

Device	Device Marking	Zener Voltage (Note 2.)				Zener Impedance			Leakage		@VZ (mV/k) @ IZT		C @ VR = 0 f = 1 MHz
		VZ (Volts)			@ IZT	ZZT @ IZT	ZZK @ IZK		IR @ VR		Min	Max	
		Min	Nom	Max	mA	Ω	Ω	mA	μA	Volts	Min	Max	pF
A-MM3Z2V4T1	00	2.2	2.4	2.6	5	100	1000	0.5	50	1.0	-3.5	0	450
A-MM3Z2V7T1	01	2.5	2.7	2.9	5	100	1000	0.5	20	1.0	-3.5	0	450
A-MM3Z3V0T1	02	2.8	3.0	3.2	5	100	1000	0.5	10	1.0	-3.5	0	450
A-MM3Z3V3T1	05	3.1	3.3	3.5	5	95	1000	0.5	5	1.0	-3.5	0	450
A-MM3Z3V6T1	06	3.4	3.6	3.8	5	90	1000	0.5	5	1.0	-3.5	0	450
A-MM3Z3V9T1	07	3.7	3.9	4.1	5	90	1000	0.5	3	1.0	-3.5	-2.5	450
A-MM3Z4V3T1	08	4.0	4.3	4.6	5	90	1000	0.5	3	1.0	-3.5	0	450
A-MM3Z4V7T1	09	4.4	4.7	5.0	5	80	800	0.5	3	2.0	-3.5	0.2	260
A-MM3Z5V1T1	0A	4.8	5.1	5.4	5	60	800	0.5	2	2.0	-2.7	1.2	225
A-MM3Z5V6T1	0C	5.2	5.6	6.0	5	40	700	0.5	1	2.0	-2.0	2.5	200
A-MM3Z6V2T1	0E	5.8	6.2	6.6	5	10	100	0.5	3	4.0	0.4	3.7	185
A-MM3Z6V8T1	0F	6.4	6.8	7.2	5	15	160	0.5	2	4.0	1.2	4.5	155
A-MM3Z7V5T1	0G	7.0	7.5	7.9	5	15	160	0.5	1	5.0	2.5	5.3	140
A-MM3Z8V2T1	0H	7.7	8.2	8.7	5	15	160	0.5	0.7	5.0	3.2	6.2	135
A-MM3Z9V1T1	0K	8.5	9.1	9.6	5	15	160	0.5	0.2	7.0	3.8	7.0	130
A-MM3Z10VT1	0L	9.4	10	10.6	5	20	160	0.5	0.1	8.0	4.5	8.0	130
A-MM3Z11VT1	0M	10.4	11	11.6	5	20	160	0.5	0.1	8.0	5.4	9.0	130
A-MM3Z12VT1	0N	11.4	12	12.7	5	25	80	0.5	0.1	8.0	6.0	10	130
A-MM3Z13VT1	0P	12.4	13.25	14.1	5	30	80	0.5	0.1	8.0	7.0	11	120
A-MM3Z15VT1	0T	14.3	15	15.8	5	30	400	0.5	0.05	10.5	9.2	13	110
A-MM3Z16VT1	0U	15.3	16.2	17.1	5	40	400	0.5	0.05	11.2	10.4	14	105
A-MM3Z18VT1	0W	16.8	18	19.1	5	45	400	0.5	0.05	12.6	12.4	16	100
A-MM3Z20VT1	0Z	18.8	20	21.2	5	55	500	0.5	0.05	14.0	14.4	18	85
A-MM3Z22VT1	10	20.8	22	23.3	5	55	500	0.5	0.05	15.4	16.4	20	85
A-MM3Z24VT1	11	22.8	24.2	25.6	5	70	120	0.5	0.05	16.8	18.4	22	80
A-MM3Z27VT1	12	25.1	27	28.9	2	80	300	0.5	0.05	18.9	21.4	25.3	70
A-MM3Z30VT1	14	28	30	32	2	80	300	0.5	0.05	21.0	24.4	29.4	70
A-MM3Z33VT1	18	31	33	35	2	80	300	0.5	0.05	23.2	27.4	33.4	70
A-MM3Z36VT1	19	34	36	38	2	90	500	0.5	0.05	25.2	30.4	37.4	70
A-MM3Z39VT1	20	37	39	41	2	130	500	0.5	0.05	27.3	33.4	41.2	45
A-MM3Z43VT1	21	40	43	46	2	150	500	0.5	0.05	30.1	37.6	46.6	40
A-MM3Z47VT1	1A	44	47	50	2	170	500	0.5	0.05	32.9	42.0	51.8	40
A-MM3Z51VT1	1C	48	51	54	2	180	500	0.5	0.05	35.7	46.6	57.2	40
A-MM3Z56VT1	1D	52	56	60	2	200	500	0.5	0.05	39.2	52.2	63.8	40
A-MM3Z62VT1	1E	58	62	66	2	215	500	0.5	0.05	43.4	58.8	71.6	35
A-MM3Z68VT1	1F	64	68	72	2	240	500	0.5	0.05	47.6	65.6	79.8	35
A-MM3Z75VT1	1G	70	75	79	2	255	500	0.5	0.05	52.5	73.4	88.6	35

2. Zener voltage is measured with a pulse test current IZ at an ambient temperature of 25°C.

Typical Characteristics

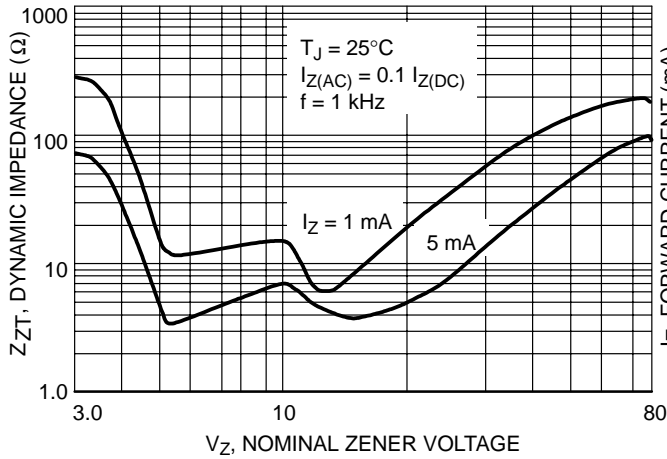


Figure 1. Effect of Zener Voltage on Zener Impedance

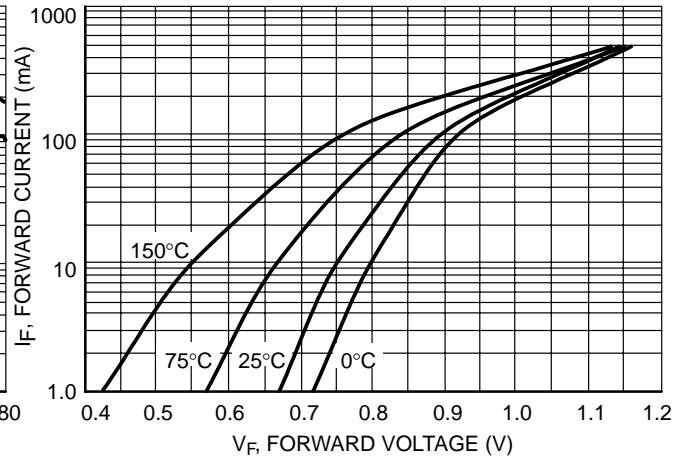


Figure 2. Typical Forward Voltage

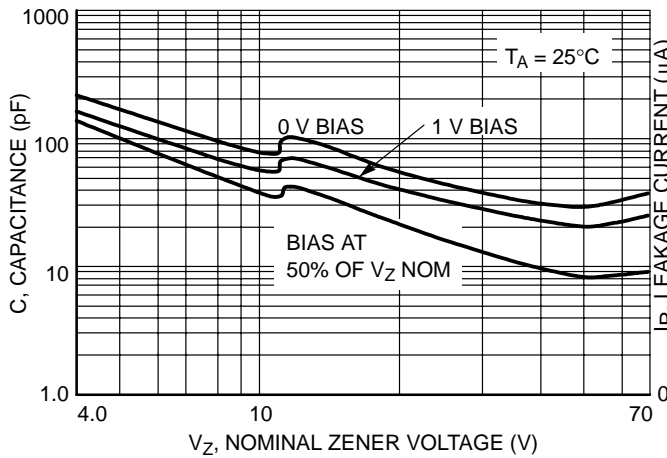


Figure 3. Typical Capacitance

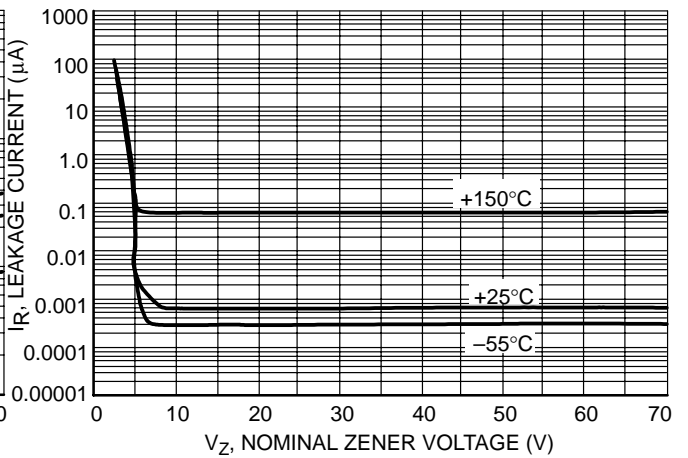
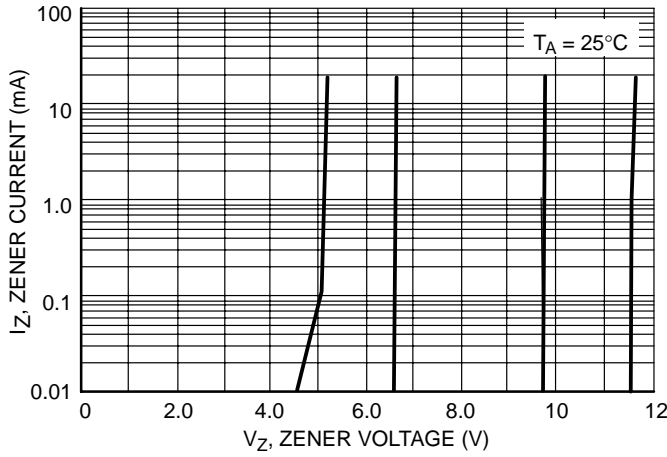
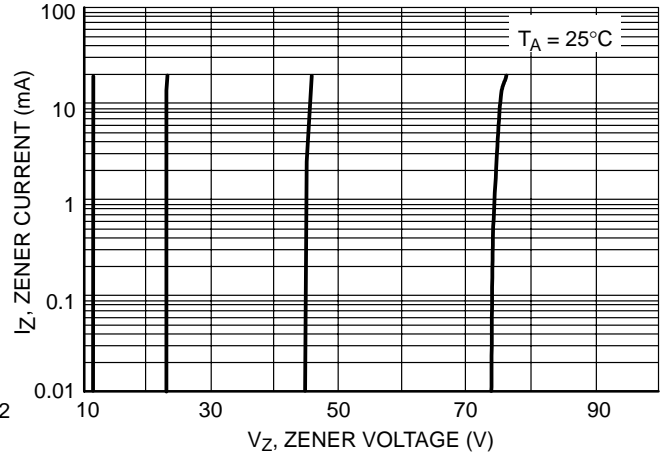


Figure 4. Typical Leakage Current

Typical Characteristics



**Figure 5. Zener Voltage versus Zener Current
(V_Z Up to 12 V)**



**Figure 6. Zener Voltage versus Zener Current
(12 V to 75 V)**

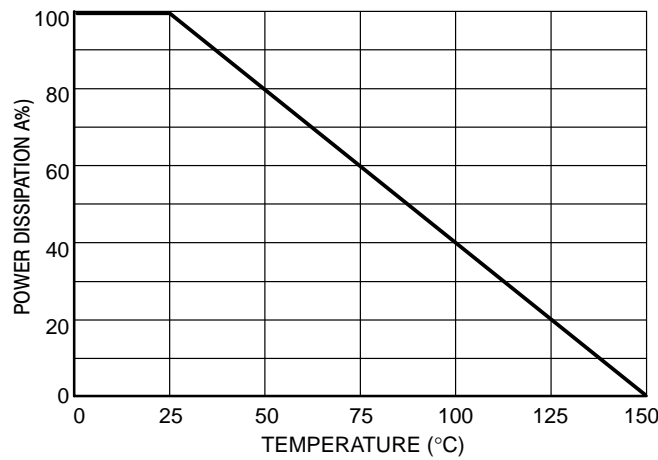
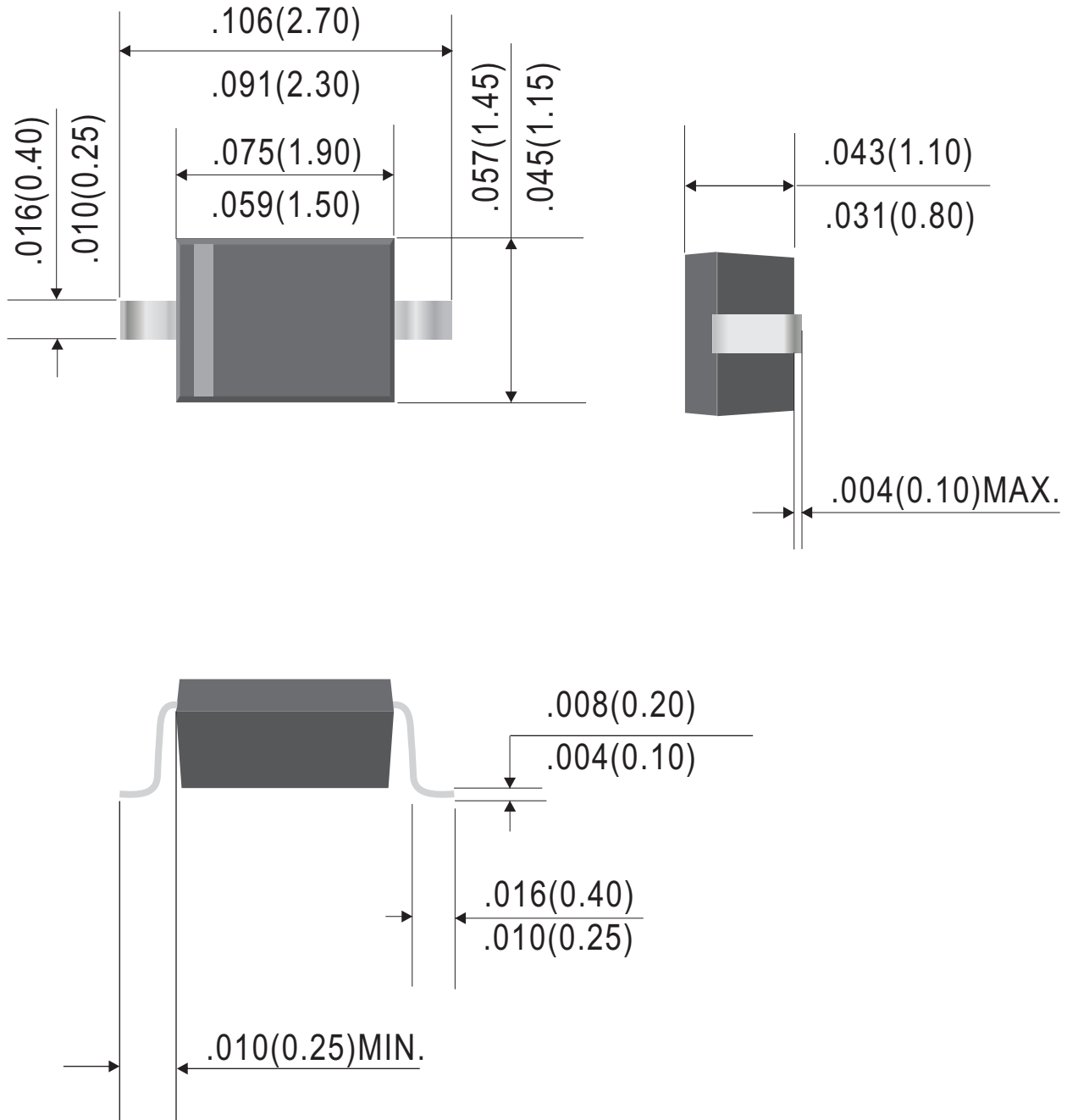


Figure 7. Steady State Power Derating

Outline Drawing

SOD-323

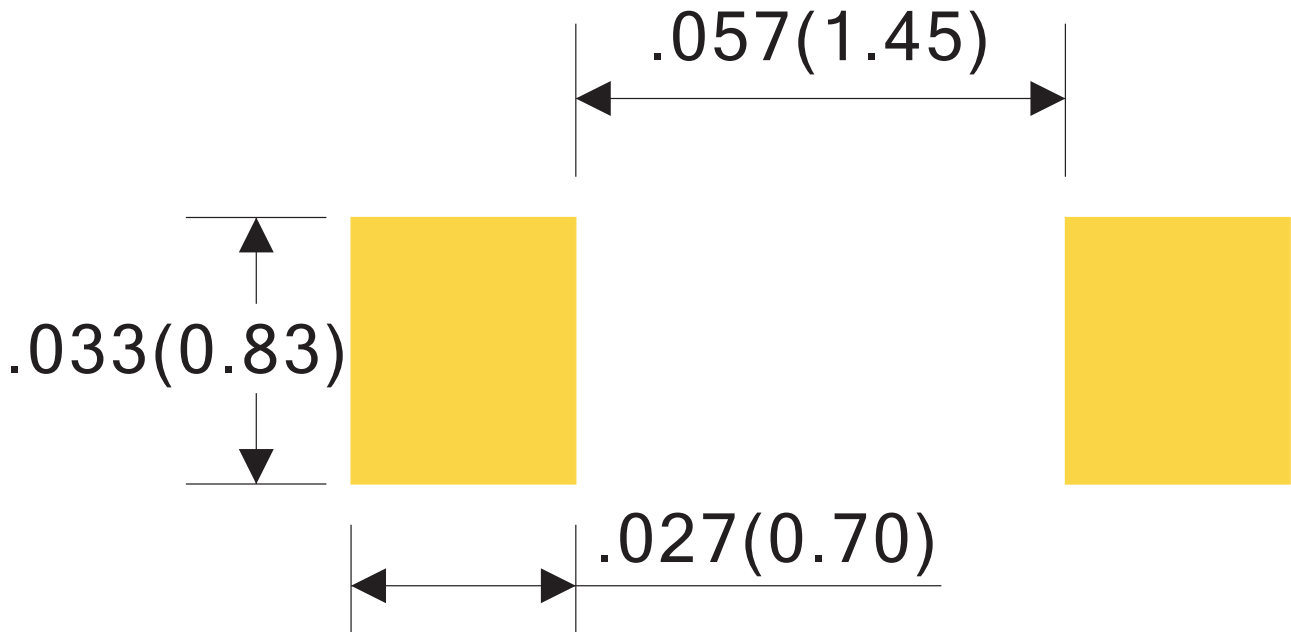


Dimensions in inches and (millimeters)

Rev.C

Suggested Soldering Pad Layout

SOD-323

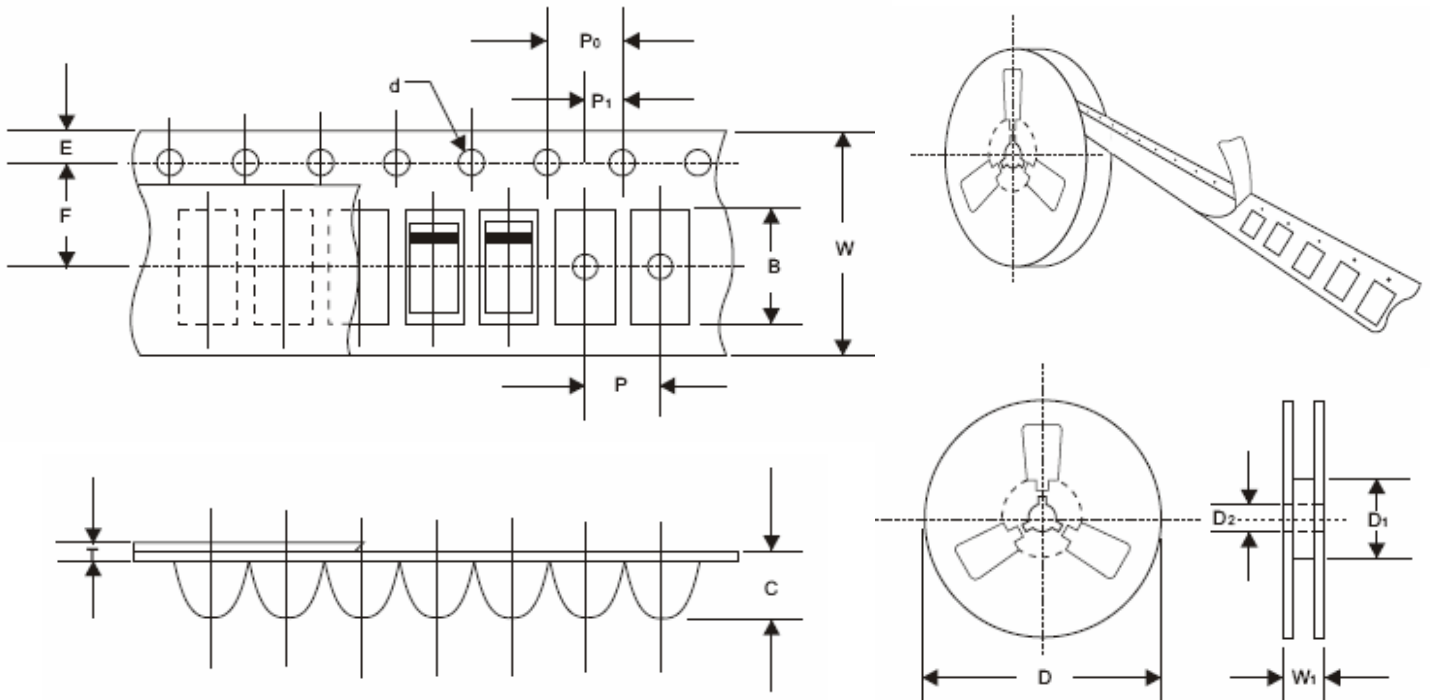


Dimensions in inches and (millimeters)

RevA

Reel Taping Specification - Surface Mount Device/SOD-323

PACKAGE	PER REEL EA	REEL DIA (m/m)	PER BOX EA	PER CARTION EA
SOD-323	3000	178	30000	240,000



ITEM	SYMBOL	SPECIFICATIONS(mm)		SPECIFICATIONS(inch)	
		SOD-323		SOD-323	
Carrier length	B	4.5max.		0.177max.	
Carrier depth	C	2.4max.		0.094max.	
Sprocket hole	d	1.55±0.1		0.061±0.004	
Reel outside diameter	D	178max.		7max.	
Reel inner diameter	D1	50min.		1.969min.	
Feed hole diameter	D2	13.0±0.2		0.512±0.008	
Sprocket hole position	E	1.75±0.1		0.069±0.004	
Punch hole position	F	3.5±0.05		0.1378±0.002	
Punch hole pitch	P	4.0±0.1		0.157±0.004	
Sprocket hole pitch	P0	4.0±0.1		0.157±0.004	
Embossment center	P1	2.0±0.05		0.079±0.002	
Overall tape thickness	T	0.4max.		0.016max.	
Tape width	W	8.0±0.3		0.315±0.012	
Reel width	W1	14.4max.		0.567max.	

Ordering Information:

Device PN	Packing
Part Number ⁽¹⁾ H ⁽²⁾ -WS	Tape&Reel: 3 Kpcs/Reel

Note: (1) Packing code, Tape & Reel Packing

(2) Halogen free product for packing code suffix "H"

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