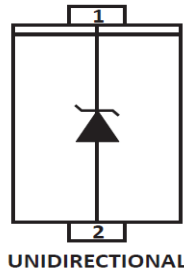


ZENER DIODE

DESCRIPTION:



UNIDIRECTIONAL

The ALPMMSZ4678 Through ALPMMSZ4716 are as shunt regulators to regulate constant Voltage control across small circuits, which comes with Wide Voltage Range selection 1.8V to 39V.

FEATURES:

- Constant Voltage control
- Wide Voltage Range Selection 1.8V to 39V
- RoHS compliant / Green EMC
- Matte Tin (Sn) Lead finish
- Cathode Band / Device marking

APPLICATIONS:

- Laptop Computers
- SMART Phones
- Portable Electronics

MECHANICAL CHARACTERISTICS

- Epoxy: UL94-VO rated flame retardant
- Case: Molded plastic, SOD-123
- Terminals: Solder plated, solderable per
- MIL-STD-750, Method 2026
- Polarity: Indicated by cathode band
- Mounting Position: Any

ORDERING PART NUMBER

PART NUMBER	ORDERING PART NUMBER
ALPMMSZ4678 ~ ALPMMSZ4716	ALPMMSZ4678 - SM ~ ALPMMSZ4716 - SM



beyond boundaries...

ALPMMSZ4678 Thru ALPMMSZ4716

SOD-123

TYPICAL DEVICE CHARACTERISTICS

MAXIMUM RATINGS @ 25°C Unless Otherwise Specified			
PARAMETER	SYMBOL	VALUE	UNITS
Power Dissipation	P_D	500	mW
Maximum Regulator Current	I_{ZM}	P_D/V_Z	mA
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to 125	°C

ELECTRICAL CHARACTERISTICS @ $T_A = 25^\circ\text{C}$ Unless Otherwise Specified						
PART NUMBER	Zener Voltage			Test current	Leakage current	
	$V_Z @ I_{ZT}$			I_{ZT}	$I_R @ V_R$	V_R
	Min. (V)	Nom. (V)	Max. (V)	μA	Max. (μA)	Volts
ALPMMSZ4678	1.71	1.8	1.89	50	7.5	1
ALPMMSZ4679	1.9	2	2.1	50	5	1
ALPMMSZ4680	2.09	2.2	2.31	50	4	1
ALPMMSZ4681	2.28	2.4	2.52	50	2	1
ALPMMSZ4682	2.565	2.7	2.835	50	1	1
ALPMMSZ4683	2.85	3	3.15	50	0.8	1
ALPMMSZ4684	3.135	3.3	3.465	50	7.5	1.5
ALPMMSZ4685	3.42	3.6	3.78	50	7.5	2
ALPMMSZ4686	3.705	3.9	4.095	50	5	2
ALPMMSZ4687	4.085	4.3	4.515	50	4	2
ALPMMSZ4688	4.465	4.7	4.935	50	10	3
ALPMMSZ4689	4.845	5.1	5.355	50	10	3
ALPMMSZ4690	5.32	5.6	5.88	50	10	4
ALPMMSZ4691	5.89	6.2	6.51	50	10	5
ALPMMSZ4692	6.46	6.8	7.14	50	10	5.1
ALPMMSZ4693	7.125	7.5	7.875	50	10	5.7
ALPMMSZ4694	7.79	8.2	8.61	50	1	6.2
ALPMMSZ4695	8.265	8.7	9.135	50	1	6.6
ALPMMSZ4696	8.645	9.1	9.555	50	1	6.9
ALPMMSZ4697	9.5	10	10.5	50	1	7.6
ALPMMSZ4698	10.45	11	11.55	50	0.05	8.4
ALPMMSZ4699	11.4	12	12.6	50	0.05	9.1
ALPMMSZ4700	12.35	13	13.65	50	0.05	9.8
ALPMMSZ4701	13.3	14	14.7	50	0.05	10.6
ALPMMSZ4702	14.25	15	15.75	50	0.05	11.4



beyond boundaries...

ALPMMSZ4678 Thru ALPMMSZ4716

SOD-123

ELECTRICAL CHARACTERISTICS @ $T_A = 25^\circ\text{C}$ Unless Otherwise Specified

PART NUMBER	Zener Voltage			Test current	Leakage current	
	V _Z @ I _{ZT}			I _{ZT}	I _R @V _R	V _R
	Min. (V)	Nom. (V)	Max. (V)	μA	Max. (μA)	Volts
ALPMMSZ4703	15.2	16	16.8	50	0.05	12.1
ALPMMSZ4704	16.15	17	17.85	50	0.05	12.9
ALPMMSZ4705	17.1	18	18.9	50	0.05	13.6
ALPMMSZ4706	18.05	19	19.95	50	0.05	14.4
ALPMMSZ4707	19	20	21	50	0.01	15.2
ALPMMSZ4708	20.9	22	23.1	50	0.01	16.7
ALPMMSZ4709	22.8	24	25.2	50	0.01	18.2
ALPMMSZ4710	23.75	25	26.25	50	0.01	19
ALPMMSZ4711	25.65	27	28.35	50	0.01	20.4
ALPMMSZ4712	26.6	28	29.4	50	0.01	21.2
ALPMMSZ4713	28.5	30	31.5	50	0.01	22.8
ALPMMSZ4714	31.35	33	34.65	50	0.01	25
ALPMMSZ4715	34.2	36	37.8	50	0.01	27.3
ALPMMSZ4716	37.05	39	40.95	50	0.01	29.6

TYPICAL DEVICE CHARACTERISTICS CURVES

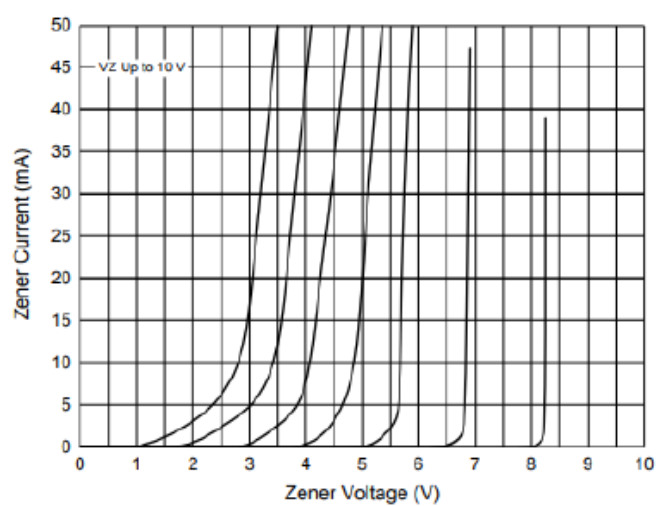


Fig1. TYPICAL ZENER BREAKDOWN

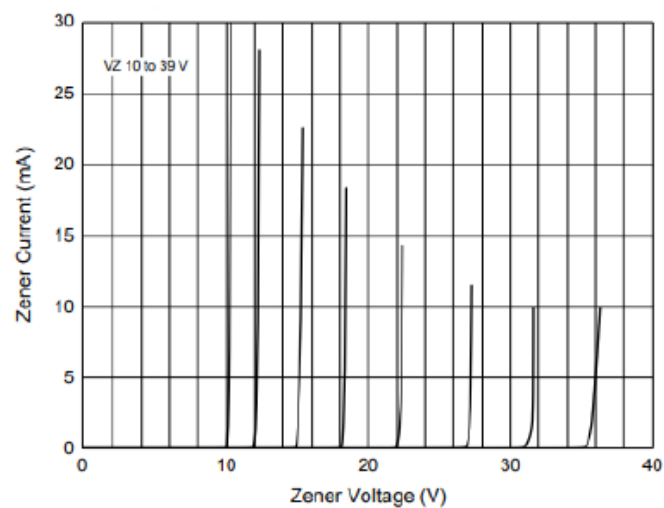
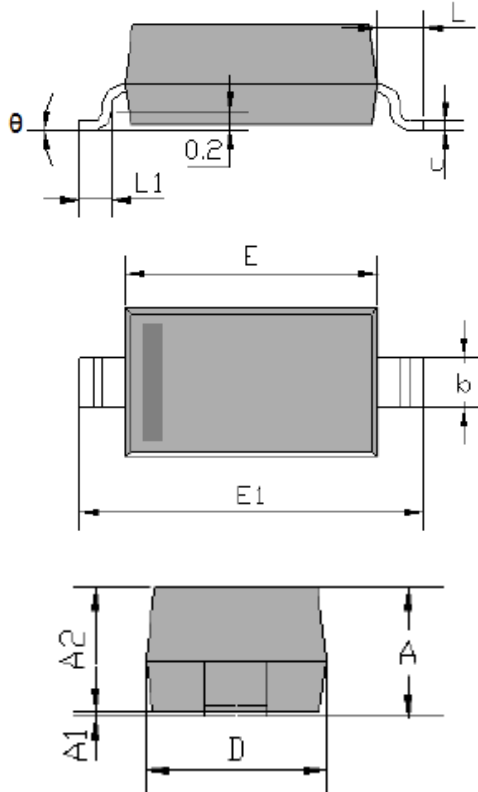


Fig2. TYPICAL ZENER BREAKDOWN

PINNING INFORMATION

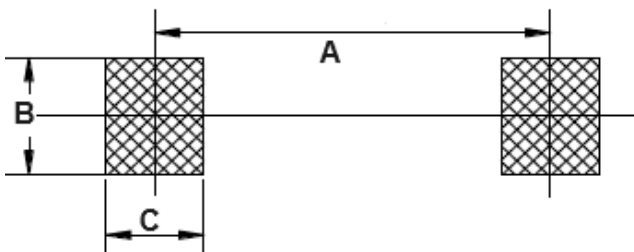
PIN	SIMPLIFIED OUTLINE	SCHEMATIC DIAGRAM
Pin1 cathode Pin2 anode		

PACKAGE INFORMATION
SOD-123

OUTLINE DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.05	1.25	0.041	0.049
A1	0.00	0.10	0.000	0.004
A2	1.05	1.15	0.041	0.045
b	0.45	0.65	0.018	0.026
c	0.08	0.15	0.003	0.006
D	1.50	1.70	0.059	0.067
E	2.60	2.80	0.102	0.110
E1	3.55	3.85	0.140	0.152
L	0.500 REF.		0.020 REF.	
L1	0.250	0.450	0.010	0.018
θ	8°		0°	

NOTES

1. Halogen free, EMC
2. Pb free solder
3. Lead thickness includes solder plating
4. Lead frame: A42
5. Other Tolerance: ± 0.05
6. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
7. Unit: mm

SUGGESTED SOLDER PAD LAYOUT

PAD LAYOUT DIMENSIONS

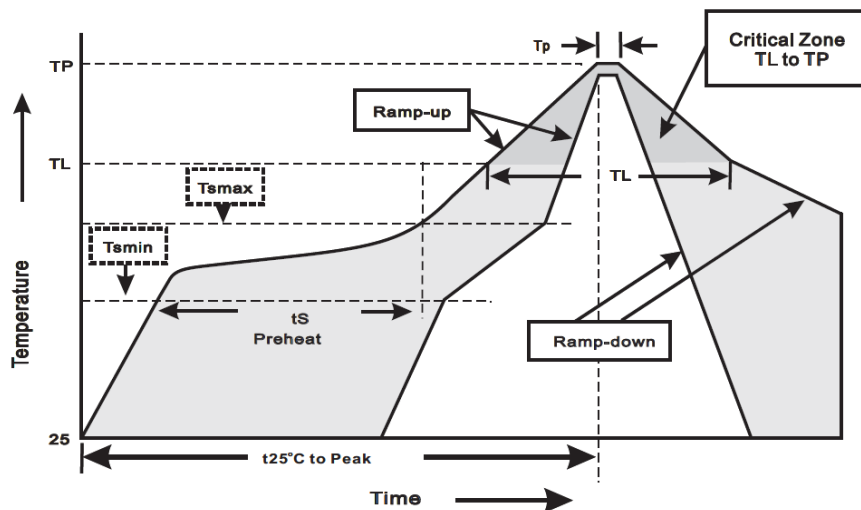
DIM	MILLIMETERS	INCHES
	MIN	MIN
A	3.24	0.128
B	1.00	0.039
C	0.80	0.031

NOTES

1. Controlling dimension: millimeters.

SOLDERING PARAMETERS
SUGGESTED THERMAL PROFILES FOR SOLDERING PROCESSES

1. Storage environment: Temperature=5 °C~40 °C Humidity=55% ±25%
2. Reflow soldering of surface-mount devices



3. Reflow soldering

PROFILE FEATURE	SOLDERING CONDITION
Average ramp-up rate (T _L to T _P)	<3 °C/sec
Preheat	
- Temperature Min (T _{smin})	150 °C
- Temperature Max (T _{smax})	200 °C
- Time (min to max) (t _s)	60 ~ 120 sec
T _{smax} to T _L	
- Ramp-upRate	<3 °C/sec
Time maintained above:	
- Temperature (T _L)	217 °C
- Time(t _L)	60 ~ 260 sec
Peak Temperature (T _P)	255 °C-0/+5 °C
Time within 5 °C of actual Peak Temperature(t _P)	10 ~ 30 sec
Ramp-down Rate	<6 °C/sec
Time 25 °C to Peak Temperature	<6 minutes

CUSTOMER NOTE:

DISCLAIMER

The product information and the selection guide facilitates the selection of the ALPINESEMI™'s Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review the Data sheet(s) so as to confirm that the Device(s) meets functionality parameters for your application. The information furnished on the Data Sheet and the ALPINESEMI™'s Web Site is believed to be accurate and reliable at the time of preparation of this document. ALPINESEMI™ however, does not assume any inaccuracies that may arise when the components are mounted and removed. Furthermore, ALPINESEMI™ does not assume liability whatsoever, arising out of the application or the use of any of ALPINESEMI™'s product(s). Neither, does it convey any license under its patent rights nor the rights of others. These products are not guaranteed for use in life saving/support appliances or systems. ALPINESEMI™'s customers using these products (either as individual Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and ALPINESEMI™ will not be responsible in any way(s) for any damage(s) resulting from such use.

Please check the website www.alpinesemi.com for continues updates and revision of datasheets.

DESIGN CHANGES: ALPINESEMI™ strives for continuous improvement and reserves the right to change the specifications of its products without prior notice. ALPINESEMI™ reserves the right to discontinue product lines without prior notice. Any product selection is a recommendation based on best understanding of such product(s) by our engineers. However, buyers are advised to rely on their own judgment for such selection of the products.

ALPINESEMI™ makes no warranty, representation or guarantee regarding the suitability of its products for any particular applications. Neither does ALPINESEMI™ assume any liability arising out of the applications nor the use of such products. ALPINESEMI™ specifically disclaims all liabilities either consequential or incidental.

All rights of the product and datasheet are reserved to ALPINESEMI™.

All logos and information provided in the datasheets are for reference only. Any registered and/or trademark/logos belonging to respective companies be the property of those companies. ALPINESEMI™ extends the courtesy to them, if any of the information found in its datasheet.

Component Disposal Instructions

1. ALPINESEMI™ Semiconductor Devices are RoHS compliant and hence customers are requested to dispose as per the prevailing Environmental Legislation put forth in their specific country.
2. In Europe, please dispose as per EU Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE).



sales@alpinesemi.com
www.alpinesemi.com