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SMAJ4728A THRU SMAJ4764A

SILICON 2 WATT ZENER DIODES

Features

- For surface mount applications (flat handling surface for accurate placement)
- 3.3 thru 100 Volt Voltage Range
- High Surge Current Rating
- Higher Voltages Available
- Electrically Equivalent to JEDEC Registered 1N4728A thru 1N4764A
- Available on Tape and Reel.

Mechanical Data

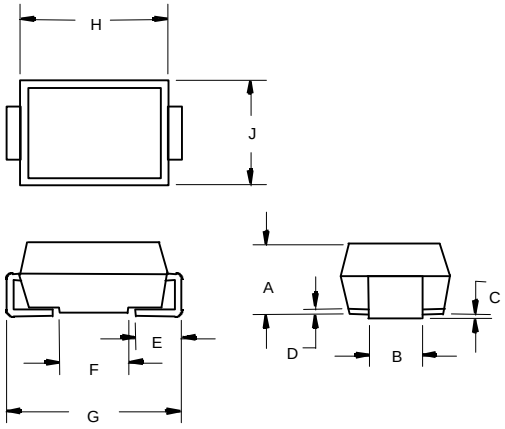
- Package similar to JEDEC DO-214AC (see dimension 'A' note)
- Terminals solderable per MIL-STD-750, Method 2026
- Polarity is indicated by cathode band.
- Maximum temperature for soldering: 260°C for 10 seconds.
- For surface mount applications with flame retardent epoxy meeting UL94V-0

Maximum Ratings @ 25°C Unless Otherwise Specified

Maximum Forward Voltage	V_F	1.2V	(Note: 1)
Peak Surge Current	I_s	See Table 1	
Steady State Power Dissipation	$P_{(AV)}$	2.0W	(Note: 2,3)
Operating And Storage Temperatures	T_J , T_{STG}	-55°C to +150°C	
Thermal Resistance	$R_{\theta JL}$	25°C/W	

NOTES:
1. Forward Current @ 200mA.
2. Mounted on 4.0mm^2 copper pads to each terminal.
3. Lead temperature at 100°C or less. Derate linearly above 100°C to zero power at 150°C.

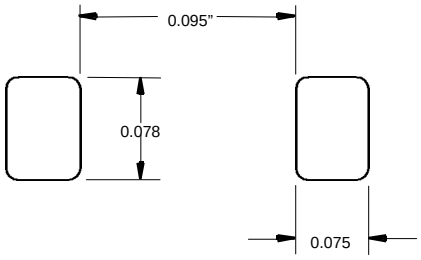
DO-214AC
(SMAJ)



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.078	.115	1.98	2.92	1
B	.052	.058	1.32	1.47	
C	---	.005	---	.127	
D	---	.02	---	.51	
E	.030	.060	.76	1.52	
F	.055	.075	1.65	2.13	
G	.194	.216	4.93	5.48	
H	.160	.180	3.99	4.50	
J	.100	.110	2.57	2.79	

NOTE 1: THIS MAXIMUM DIMENSION IS LARGER THAN THE STANDARD JEDEC CALL OUT. STANDARD JEDEC IS .105 INCHES OR 2.66 MM.

PAD LAYOUT



SMAJ4728A thru SMAJ4764A

Electrical Characteristics @ 25°C Unless Otherwise Specified

PART NUMBER	ZENER VOLTAGE (V_Z) (NOTE 4)	TEST CURRENT (I_{ZT})	MAXIMUM DYNAMIC IMPEDANCE (Z_{ZT} @ I_{ZT}) (NOTE 2)	MAXIMUM REVERSE CURRENT (I_R @ V_R)	TEST VOLTAGE (V_R)	MAXIMUM REGULATOR CURRENT (I_{ZM}) T_L = 100°C	MAXIMUM KNEE IMPEDANCE (Z_{ZK} @ I_{ZK}) (NOTE 2)	TEST CURRENT (I_{ZK})	MAXIMUM (SURGE) CURRENT (I_S) (NOTE 3)
	VOLTS	mA	OHMS	µA	VOLTS	MA	OHMS	mA	mA
SMAJ4728A	3.3	76	10	100	1	552	400	1.0	1380
SMAJ4729A	3.6	69	10	100	1	504	400	1.0	1260
SMAJ4730A	3.9	64	9	50	1	468	400	1.0	1190
SMAJ4731A	4.3	58	9	10	1	434	400	1.0	1070
SMAJ4732A	4.7	53	8	10	1	386	500	1.0	970
SMAJ4733A	5.1	49	7	10	1	356	550	1.0	890
SMAJ4734A	5.6	45	5	10	2	324	600	1.0	810
SMAJ4735A	6.2	41	2	10	3	292	700	1.0	730
SMAJ4736A	6.8	37	3.5	10	4	266	700	1.0	660
SMAJ4737A	7.5	34	4.0	10	5	242	700	0.5	605
SMAJ4738A	8.2	31	4.5	10	6	220	700	0.5	550
SMAJ4739A	9.1	28	5.0	10	7	200	700	0.5	500
SMAJ4740A	10	25	7	10	7.6	182	700	0.25	454
SMAJ4741A	11	23	8	5	8.4	166	700	0.25	414
SMAJ4742A	12	21	9	5	9.1	152	700	0.25	380
SMAJ4743A	13	19	10	5	9.9	138	700	0.25	344
SMAJ4744A	15	17	14	5	11.4	132	700	0.25	304
SMAJ4745A	16	15.5	16	5	12.2	114	700	0.25	285
SMAJ4746A	18	14	20	5	13.7	100	750	0.25	250
SMAJ4747A	20	12.5	22	5	15.2	90	750	0.25	225
SMAJ4748A	22	11.5	23	5	16.7	82	720	0.25	205
SMAJ4749A	24	10.5	25	5	18.2	76	750	0.25	190
SMAJ4750A	27	9.5	35	5	20.6	68	750	0.25	170
SMAJ4751A	30	8.5	40	5	22.8	60	1000	0.25	150
SMAJ4752A	33	7.5	45	5	25.1	54	1000	0.25	135
SMAJ4753A	36	7.0	50	5	27.4	50	1000	0.25	125
SMAJ4754A	39	6.5	60	5	29.7	46	1000	0.25	115
SMAJ4755A	43	6.0	70	5	32.7	44	1500	0.25	110
SMAJ4756A	47	5.5	80	5	35.8	38	1500	0.25	95
SMAJ4757A	51	5.0	95	5	38.8	36	1500	0.25	90
SMAJ4758A	56	4.5	110	5	42.6	32	2000	0.25	80
SMAJ4759A	62	4.0	125	5	47.1	28	2000	0.25	70
SMAJ4760A	68	3.7	150	5	51.7	26	2000	0.25	65
SMAJ4761A	75	3.3	175	5	56.0	24	2000	0.25	60
SMAJ4762A	82	3.0	200	5	62.2	22	3000	0.25	55
SMAJ4763A	91	2.8	250	5	69.2	20	3000	0.25	50
SMAJ4764A	100	2.5	350	5	76.0	18	3000	0.25	45

NOTE:

1. The type numbers shown 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}. 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 ½ square wave or equivalent sine wave pulse 1/120 second duration superimposed on I_{ZT}.
4. Voltage at thermal equilibrium or 90 seconds after application of dc current.

RoHS / Pb-free Policy

RoHS/Pb-FREEPOLICY
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RoHS/Pb-FREECONTACTS
|
MSCCOLORADO
|
MSCIP
|
MSCLAWRENCE
|
MSCLOWELL
|
MSCSCOTTSDALE

MSC PPG - Switching

MSC PPG - Modules

MSC PPG - RF

Microsemi Corporation (MSC) is committed to manage its business in an environmentally responsible manner and Microsemi has RoHS and Pb-free initiatives to support those customers that require RoHS compliant and/or Pb-free products.

Most plastic encapsulated products will be transitioned to a Pb-free finish and also use mold compounds that are RoHS compliant for a 260C reflow temperature. For additional information regarding Pb-free or RoHS compliant products, the customer should contact the Microsemi Division that provides that product.

Hermetic military products manufactured by Microsemi are processed in accordance with requirements specified by MIL-PRF-19500, MIL-PRF-38534 and MIL-PRF-38535. These requirements do not allow termination finishes that are Pb-free or RoHS compliant. If RoHS compliant hermetic products for equivalent commercial part numbers are required, the customer should contact the applicable Microsemi Division.

In the case of Plastic Encapsulated and Commercial Hermetic packages, Microsemi may offer two versions of a product where one version will be RoHS compliant and the other will not be compliant. In those examples, the RoHS compliant version will include an "e#" designator as a suffix to the Part Number indicating the Pb-free 2nd level interconnect terminal finish category defined in JESD97. In these offerings, the most frequent terminal finish is pure Tin and the suffix of the part number is "e3".

Microsemi Corporation (**"MSC"**) is committed to support those customers requiring RoHS and/or Pb-free (Lead free) compliant components. The term Pb-free (Lead-free) is defined in JESD97 and applies to components in which the Lead (Pb) level in any of the raw materials and the end product

is less than or equal to 0.1% by weight and also meets any Pb-free requirements/definitions adopted by the RoHS Directive 2002/95/EC. The RoHS term is an acronym for European Directive, *Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.* This also means a component with Pb-free termination finish compatible with Pb-free soldering processes. The RoHS compliant components may include Pb in the internal high melting type solder connections or glass materials of the component as defined in the exemptions of the RoHS European Directive.

Although the RoHS directive requires the use of Pb-free lead finish and solder processes, there has been a historical concern about the growth of Tin whiskers when using these Pb-free processes. The most common Pb-free lead finish currently being used is 100% Matte Tin (Sn) and several IC manufacturers have shown that this lead finish is much less prone to whisker formation than older bright tin finishes. Microsemi will provide the reliability and tin whisker growth data that has been taken on its products. However, tin whisker growth is dependent on the environment that is seen by the product. Customers are encouraged to collect their own reliability data and perform a risk assessment based their individual requirements. For general information on tin whiskers please see the following sites;
NASA website on Tin whiskers: Nasa
NEMI Tin whisker activities NEMI
CALCE Tin Whisker Working Group CALCE

Important Information Disclaimer:

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