

ZS4727A-AF Thru ZS1390A-AF**List**

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ZS4727A-AF Thru ZS1390A-AF

1.0W Zener Diodes : 3.0V~390V

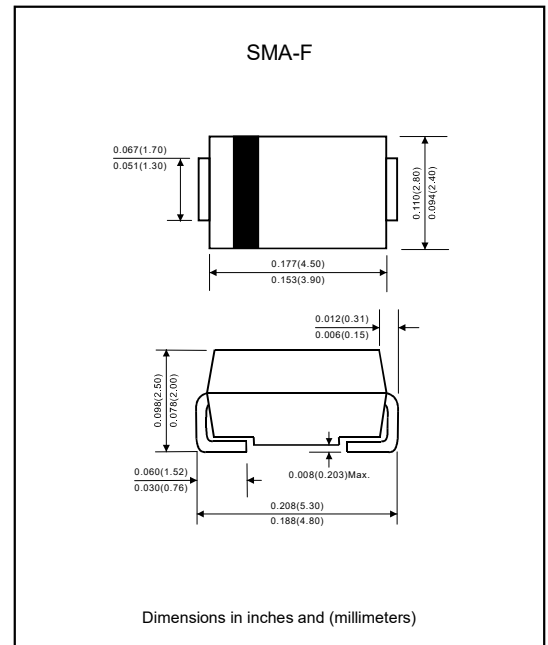
Features

- Zener reverse voltage range 3.0V to 390V.
- High peak reverse power dissipation.
- High reliability.
- Low leakage current.
- Lead-free parts meet RoHS requirements.
- Suffix "-H" indicates halogen-free parts, ex. ZS4727A-AF-H.

Mechanical data

- Epoxy: UL94-V0 rated flame retardant.
- Case : older plastic, DO-214AC / SMA-F.
- Terminals : Solder plated, solder able per MIL-STD-750, Method 2026.
- Polarity : Indicated by cathode band.
- Mounting Position : Any.

Package outline



Maximum ratings (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Rating	Unit
Power dissipation at $T_L=75^\circ\text{C}$ (Note1)	P_D	1	W
Forward voltage at $I_F=200\text{mA}$	V_F	1.2	V
Operating junction temperature range	T_J	+150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

ZS4727A-AF Thru ZS1390A-AF

Electrical characteristics

Type	Marking	Nominal Zener Voltage				Zener Impedance			Leakage Current		Maximum DC Zener Current
		V _z			I _{zT}	Z _{zT} @I _{zT}	Z _{zK} @I _{zK}		I _R @V _R		
		Min(V)	Nom(V)	Max(V)	(mA)	Max(Ω)	Max (Ω)	(mA)	(μA)	(V)	I _{zM} (mA)
ZS4727A-AF	727A	2.85	3	3.15	80	10	400	1	100	1	288
ZS4728A-AF	728A	3.14	3.3	3.47	76	10	400	1	100	1	274
ZS4729A-AF	729A	3.42	3.6	3.78	69	10	400	1	100	1	251
ZS4730A-AF	730A	3.71	3.9	4.10	64	9	400	1	50	1	232
ZS4731A-AF	731A	4.09	4.3	4.52	58	9	400	1	10	1	210
ZS4732A-AF	732A	4.47	4.7	4.94	53	8	500	1	10	1	192
ZS4733A-AF	733A	4.85	5.1	5.36	49	7	550	1	10	1	177
ZS4734A-AF	734A	5.32	5.6	5.88	45	5	600	1	10	2	161
ZS4735A-AF	735A	5.89	6.2	6.51	41	2	700	1	10	3	146
ZS4736A-AF	736A	6.46	6.8	7.14	37	3.5	700	1	10	4	133
ZS4737A-AF	737A	7.13	7.5	7.88	34	4	700	0.5	10	5	121
ZS4738A-AF	738A	7.79	8.2	8.61	31	4.5	700	0.5	10	6	110
ZS4739A-AF	739A	8.65	9.1	9.56	28	5	700	0.5	10	7	100
ZS4740A-AF	740A	9.5	10	10.5	25	7	700	0.25	10	7.6	91
ZS4741A-AF	741A	10.45	11	11.55	23	8	700	0.25	0.5	8.4	83
ZS4742A-AF	742A	11.40	12	12.60	21	9	700	0.25	0.5	9.1	76
ZS4743A-AF	743A	12.35	13	13.65	19	10	700	0.25	0.5	9.9	69
ZS4744A-AF	744A	14.25	15	15.75	17	14	700	0.25	0.5	11.4	61
ZS4745A-AF	745A	15.20	16	16.80	15.5	16	700	0.25	0.5	12.2	57
ZS4746A-AF	746A	17.10	18	18.90	14	20	750	0.25	0.5	13.7	50
ZS4747A-AF	747A	19.00	20	21.00	12.5	22	750	0.25	0.5	15.2	45
ZS4748A-AF	748A	20.90	22	23.10	11.5	23	750	0.25	0.5	16.7	41
ZS4749A-AF	749A	22.80	24	25.20	10.5	25	750	0.25	0.5	18.2	38
ZS4750A-AF	750A	25.65	27	28.35	9.5	35	750	0.25	0.5	20.6	34
ZS4751A-AF	751A	28.50	30	31.50	8.5	40	1000	0.25	0.5	22.8	30
ZS4752A-AF	752A	31.35	33	34.65	7.5	45	1000	0.25	0.5	25.1	27
ZS4753A-AF	753A	34.20	36	37.80	7.0	50	1000	0.25	0.5	27.4	25
ZS4754A-AF	754A	37.05	39	40.95	6.5	60	1000	0.25	0.5	29.7	23
ZS4755A-AF	755A	40.85	43	45.15	6	70	1500	0.25	0.5	32.7	22
ZS4756A-AF	756A	44.65	47	49.35	5.5	80	1500	0.25	0.5	35.8	19
ZS4757A-AF	757A	48.45	51	53.55	5	95	1500	0.25	0.5	38.8	18
ZS4758A-AF	758A	53.20	56	58.80	4.5	110	2000	0.25	0.5	42.6	16
ZS4759A-AF	759A	58.90	62	65.10	4	125	2000	0.25	0.5	47.1	14
ZS4760A-AF	760A	64.60	68	71.40	3.7	150	2000	0.25	0.5	51.7	13
ZS4761A-AF	761A	71.25	75	78.75	3.3	175	2000	0.25	0.5	56.0	12
ZS4762A-AF	762A	77.90	82	86.10	3.0	200	3000	0.25	0.5	62.2	11
ZS4763A-AF	763A	86.45	91	95.55	2.8	250	3000	0.25	0.5	69.2	10
ZS4764A-AF	764A	95.00	100	105.00	2.5	350	3000	0.25	0.5	76.0	9
ZS1110A-AF	711Z	104.50	110	115.50	2.3	450	4000	0.25	0.5	83.6	8.6
ZS1120A-AF	712Z	114.00	120	126.00	2.0	550	4500	0.25	0.5	91.2	7.8
ZS1130A-AF	713Z	123.50	130	136.50	1.9	700	5000	0.25	0.5	98.8	7.0
ZS1150A-AF	715Z	142.50	150	157.50	1.7	1000	6000	0.25	0.5	114.0	6.4
ZS1160A-AF	716Z	152.00	160	168.00	1.6	1100	6500	0.25	0.5	121.6	5.8
ZS1180A-AF	718Z	171.00	180	189.00	1.4	1200	7000	0.25	0.5	136.8	5.2
ZS1200A-AF	720Z	190.00	200	210.00	1.2	1900	9990	0.25	0.5	152.0	4.7
ZS1220A-AF	722Z	209.00	220	231.00	1.0	1600	8000	0.25	0.5	167.2	4.0
ZS1240A-AF	724Z	228.00	240	252.00	0.9	1800	8500	0.25	0.5	182.4	3.8
ZS1250A-AF	725Z	237.50	250	262.50	0.9	2000	9000	0.25	0.5	190.0	3.6
ZS1270A-AF	727Z	256.50	270	283.50	0.8	2100	9000	0.25	0.5	205.0	3.3
ZS1300A-AF	730Z	285.00	300	315.00	0.8	2300	9500	0.25	0.5	228.0	3.0
ZS1330A-AF	733Z	313.50	330	346.50	0.7	2500	9500	0.25	0.5	250.2	2.7
ZS1360A-AF	736Z	342.00	360	378.00	0.7	2700	10000	0.25	0.5	275.0	2.5
ZS1390A-AF	739Z	370.50	390	409.50	0.7	3000	10000	0.25	0.5	300.0	2.2

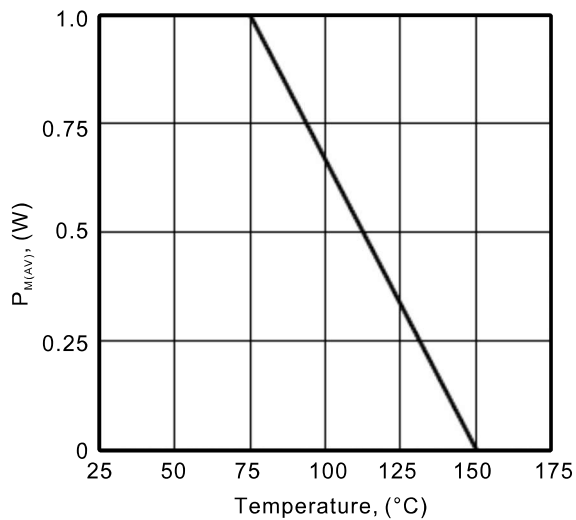
Note: 1. The type number listed have a standard tolerance on the nominal zener voltage of $\pm 5\%$.

2. The reverse surge current is a non-repetitive, 8.3ms pulse width square wave or equivalent sine-wave superimposed on I_{ZT} per JEDEC Method.

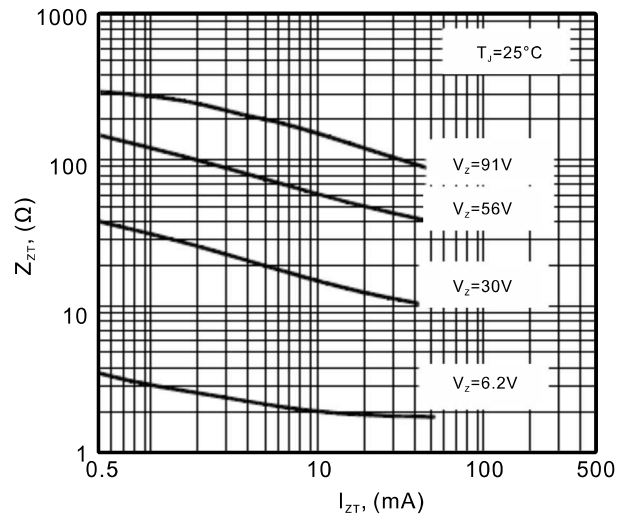
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Rating and characteristic curves

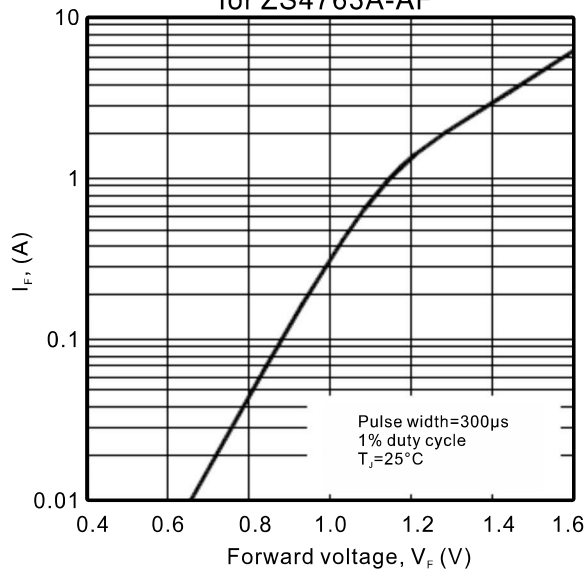
Maximum continuous power dissipation



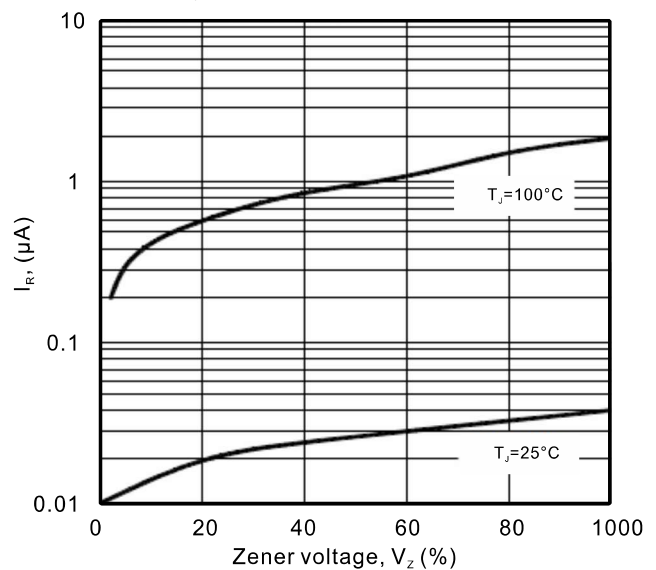
Typical zener impedance



Typical instantaneous forward characteristics for ZS4763A-AF

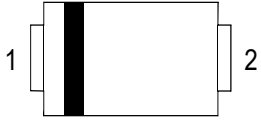
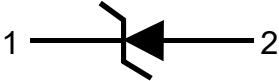


Typical reverse characteristics

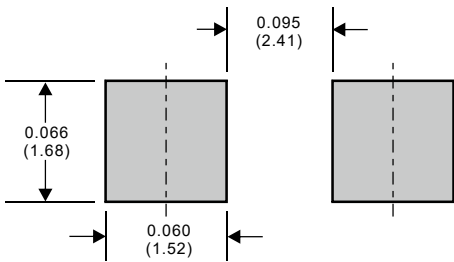


ZS4727A-AF Thru ZS1390A-AF

Pinning information

Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Anode		

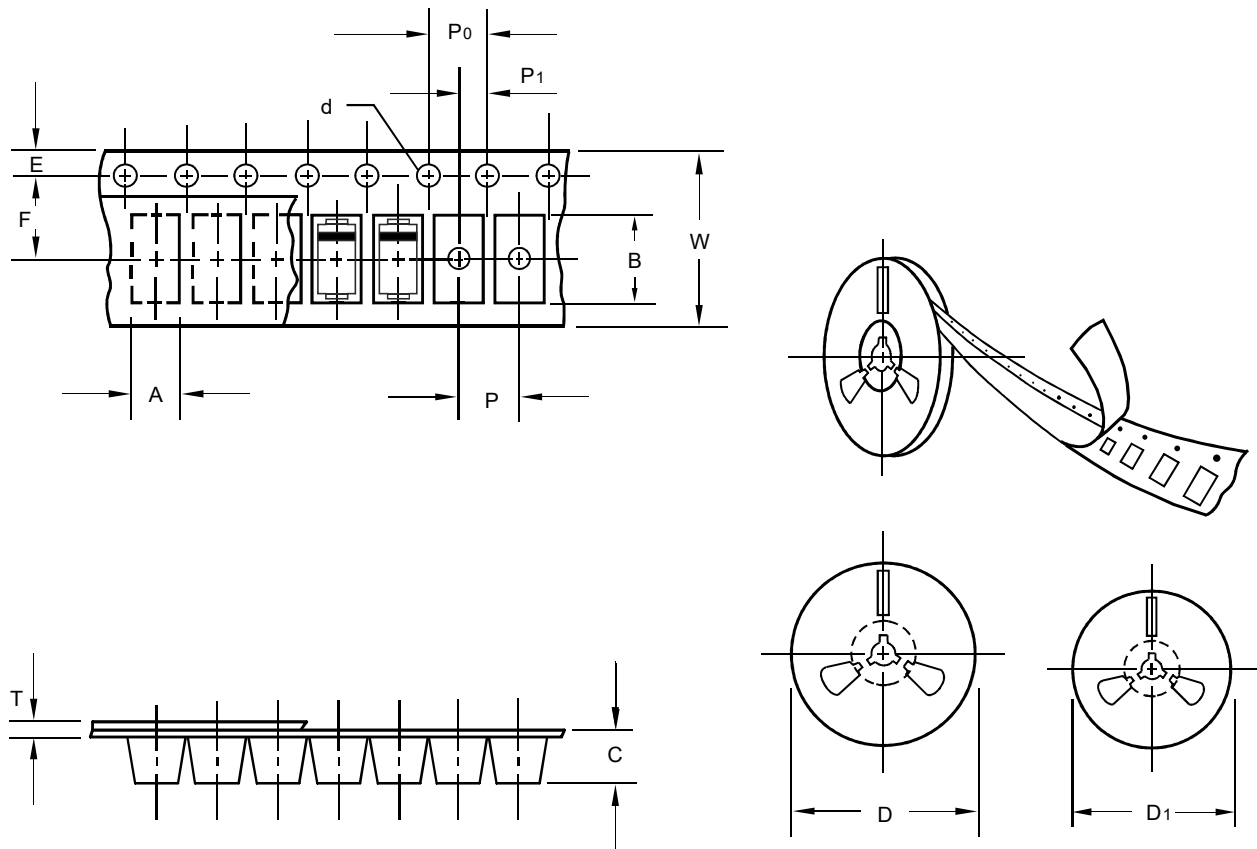
Suggested solder pad layout



Dimensions in inches and (millimeters)

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Packing information



unit:mm

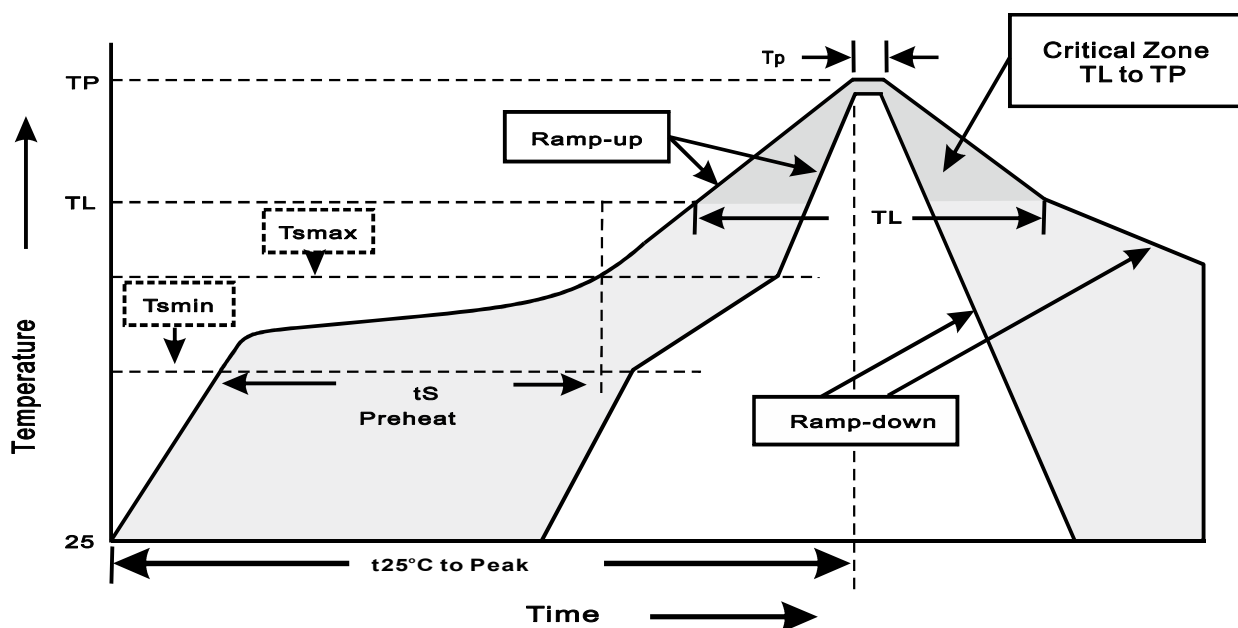
Item	Symbol	Tolerance	SMA-F
Carrier width	A	0.1	2.80
Carrier length	B	0.1	5.30
Carrier depth	C	0.1	2.36
Sprocket hole	d	0.1	1.55
13" Reel outside diameter	D	2.0	330.00
11" Reel outside diameter	D1	2.0	278.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	5.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	12.00

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)
SMA-F	11"	5,000	-	-	278	-	-
	13"	7,500	15,000	335*335*38	330	382*356*392	165,000

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)	$<3^{\circ}\text{C}/\text{sec}$
Preheat -Temperature Min(T_{min}) -Temperature Max(T_{max}) -Time(min to max)(t_s)	150°C 200°C $60\sim 120\text{sec}$
T_{max} to T_L -Ramp-upRate	$<3^{\circ}\text{C}/\text{sec}$
Time maintained above: -Temperature(T_L) -Time(t_L)	217°C $60\sim 260\text{sec}$
Peak Temperature(T_P)	$255^{\circ}\text{C}-0/+5^{\circ}\text{C}$
Time within 5°C of actual Peak Temperature(t_P)	$10\sim 30\text{sec}$
Ramp-down Rate	$<6^{\circ}\text{C}/\text{sec}$
Time 25°C to Peak Temperature	$<6\text{minutes}$