



HSVA005AD1F thru HSVA220CAD1F

Transient Voltage Suppressors

REVERSE VOLTAGE 5 - 220 Volts
Power Dissipation - 200 Watts

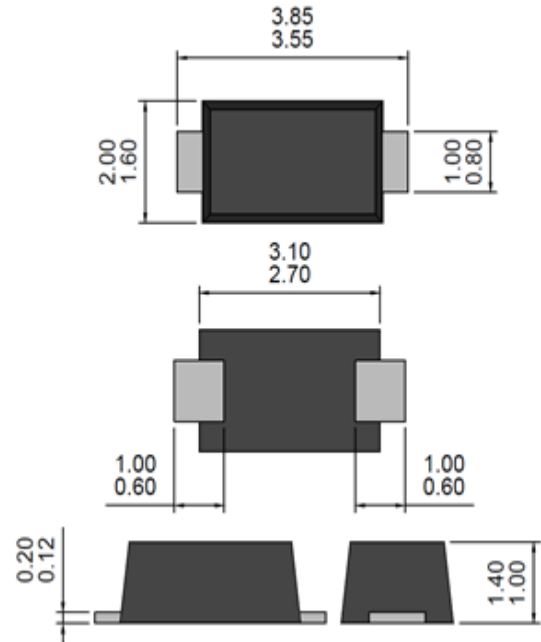
FEATURES

- Glass passivated chip
- 200W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle) : 0.01%.
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant

MECHANICAL DATA

- Method: SOD-123S-1
- Terminals: Solder plated solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end except Bipolar
- Weight: Approx. 0.0006 ounce, 0.0173 grams

SOD-123S-1



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.
Single Phase, half wave, 60HZ, resistive or inductive load.
For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	VALUE	UNIT
Peak Power Dissipation with a 10/1000 μ s waveform (Notes 1)	PPP	200	W
Peak Power Dissipation with a 8/20 μ s waveform (Notes 1)	PPP	1000	W
Peak Forward Surge Current , 8.3 ms single half sine-wave unidirectional only (Notes 2)	IFSM	20	A
Peak Pulse Current with a 10/1000 μ s waveform (Notes 1)	I _{PP}	See Next Table	A
Power dissipation on infinite heatsink at TL=75°C	P _D	0.4	W
Max. instantaneous forward voltage at 25 A for unidirectional only	V _F	3.5	V
Operating Junction Temperature Range	T _J	-55 to +150	°C
Storage Temperature Range	T _{STG}	-55 to +150	°C

Note: 1. Non-repetitive current pulse, per Fig.5 and derated above TA = 25°C per Fig.1.
2.Measured on 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per minutes maximum

HSVA005AD1F thru HSVA220CAD1F



Part Number		Marking Code		Breakdown Voltage			Max. Reverse Leakage	working Peak Reverse Voltage	Max. Reverse Surge Current	Max. Clamping Voltage
				VBR @ IT			I _R @ V _{RWM}	V _{RWM}	I _{PP}	V _{C@I_{PP}}
				Min.	Max.	IT				
UNI	BI	UNI	BI	V	V	m A	µA	V	A	V
HSVA005AD1F	HSVA005CAD1F	FE	KE	6.4	7	10	400	5	21.74	9.2
HSVA006AD1F	HSVA006CAD1F	FG	KG	6.67	7.37	10	400	6	19.42	10.3
HSVA06P5AD1F	HSVA06P5CAD1F	FK	KK	7.22	7.98	10	250	6.5	17.86	11.2
HSVA007AD1F	HSVA007CAD1F	FM	KM	7.78	8.6	10	100	7	16.67	12
HSVA07P5AD1F	HSVA07P5CAD1F	FP	KP	8.33	9.21	1	50	7.5	15.5	12.9
HSVA008AD1F	HSVA008CAD1F	FR	KR	8.89	9.83	1	25	8	14.71	13.6
HSVA08P5AD1F	HSVA08P5CAD1F	FT	KT	9.44	10.4	1	10	8.5	13.89	14.4
HSVA009AD1F	HSVA009CAD1F	FV	KV	10	11.1	1	5	9	12.99	15.4
HSVA010AD1F	HSVA010CAD1F	FX	KX	11.1	12.3	1	2.5	10	11.76	17
HSVA011AD1F	HSVA011CAD1F	FZ	KZ	12.2	13.5	1	2.5	11	10.99	18.2
HSVA012AD1F	HSVA012CAD1F	HE	LE	13.3	14.7	1	2.5	12	10.05	19.9
HSVA013AD1F	HSVA013CAD1F	HG	LG	14.4	15.9	1	1	13	9.3	21.5
HSVA014AD1F	HSVA014CAD1F	HK	LK	15.6	17.2	1	1	14	8.62	23.2
HSVA015AD1F	HSVA015CAD1F	HM	LM	16.7	18.5	1	1	15	8.2	24.4
HSVA016AD1F	HSVA016CAD1F	HP	LP	17.8	19.7	1	1	16	7.69	26
HSVA017AD1F	HSVA017CAD1F	HR	LR	18.9	20.9	1	1	17	7.25	27.6
HSVA018AD1F	HSVA018CAD1F	HT	LT	20	22.1	1	1	18	6.85	29.2
HSVA019AD1F	HSVA019CAD1F	HB	LB	21.1	23.3	1	1	19	6.54	30.6
HSVA020AD1F	HSVA020CAD1F	HV	LV	22.2	24.5	1	1	20	6.17	32.4
HSVA022AD1F	HSVA022CAD1F	HX	LX	24.4	26.9	1	1	22	5.63	35.5
HSVA024AD1F	HSVA024CAD1F	HZ	LZ	26.7	29.5	1	1	24	5.14	38.9
HSVA026AD1F	HSVA026CAD1F	JE	ME	28.9	31.9	1	1	26	4.75	42.1
HSVA028AD1F	HSVA028CAD1F	JG	MG	31.1	34.4	1	1	28	4.41	45.4
HSVA030AD1F	HSVA030CAD1F	JK	MK	33.3	36.8	1	1	30	4.13	48.4
HSVA033AD1F	HSVA033CAD1F	JM	MM	36.7	40.6	1	1	33	3.75	53.3
HSVA036AD1F	HSVA036CAD1F	JP	MP	40	44.2	1	1	36	3.44	58.1
HSVA040AD1F	HSVA040CAD1F	JR	MR	44.4	49.1	1	1	40	3.1	64.5
HSVA043AD1F	HSVA043CAD1F	JT	MT	47.8	52.8	1	1	43	2.88	69.4
HSVA045AD1F	HSVA045CAD1F	JV	MV	50	55.3	1	1	45	2.75	72.7
HSVA048AD1F	HSVA048CAD1F	JX	MX	53.3	58.9	1	1	48	2.58	77.4
HSVA051AD1F	HSVA051CAD1F	JZ	MZ	56.7	62.7	1	1	51	2.43	82.4
HSVA054AD1F	HSVA054CAD1F	XE	NE	60	66.3	1	1	54	2.3	87.1
HSVA058AD1F	HSVA058CAD1F	XG	NG	64.4	71.2	1	1	58	2.14	93.6
HSVA060AD1F	HSVA060CAD1F	XK	NK	66.7	73.7	1	1	60	2.07	96.8
HSVA064AD1F	HSVA064CAD1F	XM	NM	71.1	78.6	1	1	64	1.94	103

Part Number		Marking Code		Breakdown Voltage			Max. Reverse Leakage	working Peak Reverse Voltage	Max. Reverse Surge Current	Max. Clamping Voltage
				V _{BR} @ I _T			I _R @ V _{RWM}	V _{RWM}	I _{PP}	V _{C@IPP}
				Min.	Max.	I _T				
UNI	BI	UNI	BI	V	V	m A	μA	V	A	V
HSVA070AD1F	HSVA070CAD1F	XP	NP	77.8	86	1	1	70	1.77	113
HSVA075AD1F	HSVA075CAD1F	XR	NR	83.3	92.1	1	1	75	1.65	121
HSVA078AD1F	HSVA078CAD1F	XT	NT	86.7	95.8	1	1	78	1.59	126
HSVA080AD1F	HSVA080CAD1F	XB	NB	88.8	97.6	1	1	80	1.55	129
HSVA085AD1F	HSVA085CAD1F	XV	NV	94.4	104	1	1	85	1.46	137
HSVA090AD1F	HSVA090CAD1F	XX	NX	100	111	1	1	90	1.37	146
HSVA100AD1F	HSVA100CAD1F	XZ	NZ	111	123	1	1	100	1.23	162
HSVA110AD1F	HSVA110CAD1F	TE	PE	122	135	1	1	110	1.13	177
HSVA120AD1F	HSVA120CAD1F	TG	PG	133	147	1	1	120	1.04	193
HSVA130AD1F	HSVA130CAD1F	TK	PK	144	159	1	1	130	0.96	209
HSVA140AD1F	HSVA140CAD1F	TB	PB	155	171	1	1	140	0.89	224
HSVA150AD1F	HSVA150CAD1F	TM	PM	167	185	1	1	150	0.82	243
HSVA160AD1F	HSVA160CAD1F	TP	PP	178	197	1	1	160	0.77	259
HSVA170AD1F	HSVA170CAD1F	TR	PR	189	209	1	1	170	0.73	275
HSVA180AD1F	HSVA180CAD1F	TT	PT	200	220	1	1	180	0.68	292
HSVA190AD1F	HSVA190CAD1F	TV	PV	211	232	1	1	190	0.65	308
HSVA200AD1F	HSVA200CAD1F	TX	PX	224	247	1	1	200	0.62	324
HSVA220AD1F	HSVA220CAD1F	TZ	PZ	246	272	1	1	220	0.56	356

Notes : 1. The available parts are "A" type only, the parts without A (VBR is ±10%) is not available.

2. Add suffix 'CA' after part number to specify Bi-directional devices.

3. For Bi-Directional devices having VR of 10 volts and under, the IR limit is double.

RATING AND CHARACTERISTIC CURVES

Fig. 1 Pulse Derating Curve

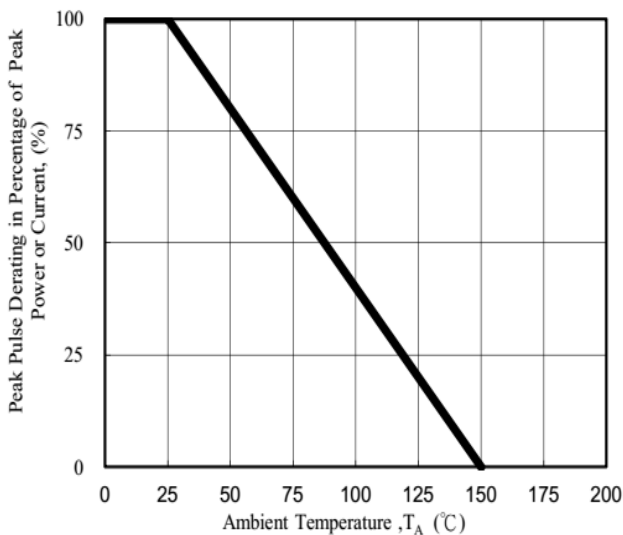


Fig. 2 Max. Non-Repetitive Surge Current

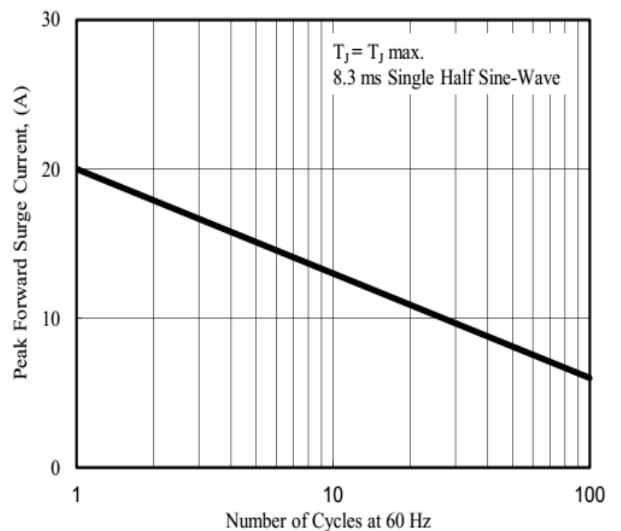


Fig. 3 Steady State Power Derating Curve

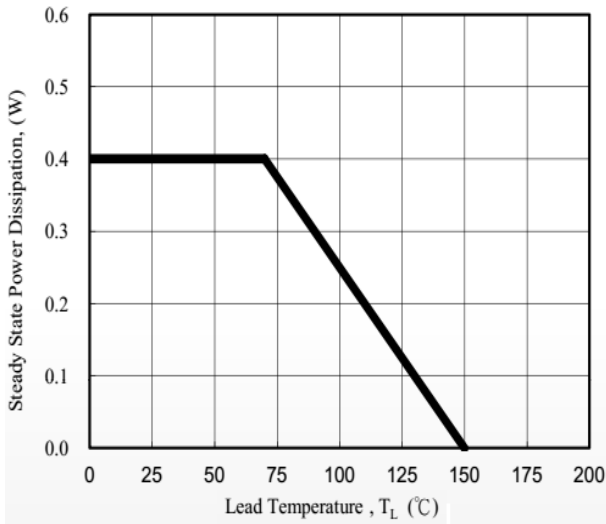


Fig. 4 Peak Pulse Power Rating Curve

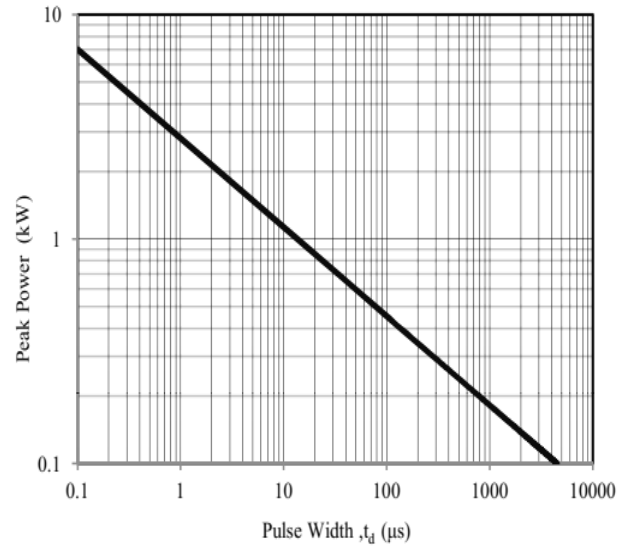


Fig. 5 Pulse Waveform

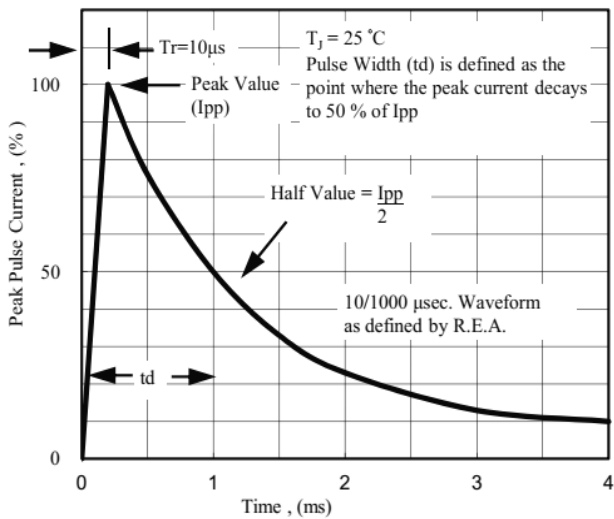
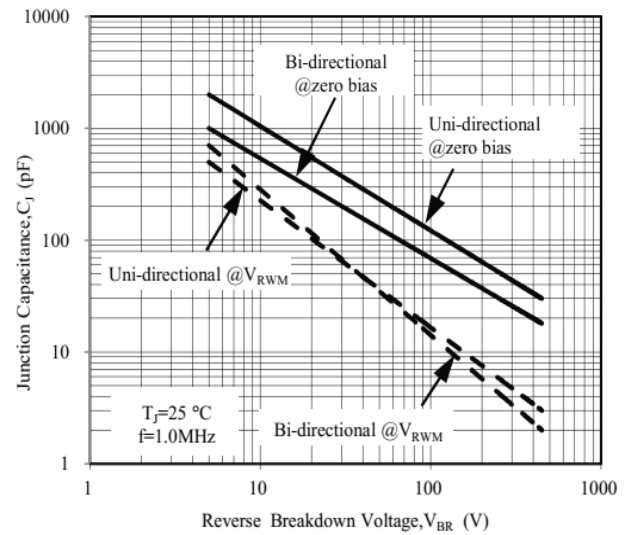


Fig. 6 Typical Junction Capacitance





Disclaimer

ALL specifications and data are subject to be changed without notice to improve reliability function or design or other reasons.

HY makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, HY disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on HY's knowledge of typical requirements that are often placed on HY products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify HY's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, HY products are not designed for use in medical, life-saving, or life-sustaining applications or for any other applications in which the failure of the HY product could result in personal injury or death. Customers using or selling HY products not expressly indicated for use in such applications do so at their own risk. Please contact authorized HY personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of HY. Product names and markings noted herein may be trademarks of their respective owners.

声明

所有的规格及数据如因改进可靠性、功能、设计或其他原因发生变更，恕不另行通知。

HY 对产品特定用途的适用性或任何产品的连续生产不做担保、陈述或保证。在可适用法律允许的最大程度上，HY 不承担 (i) 因应用或使用任何产品产生的任何及全部责任，(ii) 包括但不限于特定、连带或附带损害产生的任何及全部责任，(iii) 不做任何形式默认担保，包括不保证特定用途的使用性、非侵权及商业适销性。

关于产品适用于某类应用的声明以 HY 掌握的 HY 产品一般应用环境下的典型要求为准。此类声明与产品特定应用的适用性声明不存在任何关联。客户自行负责根据产品技术规格的说明认证特定产品是否适用于特定的应用。数据手册和技术规格中提供的参数可能因不同的应用而异，而且性能可能随时间而变化。所有工作参数，包括电型参数，必须有客户的技术专家根据每一个客户应用环境确认。产品技术规格不扩展或不以其他方式修改 HY 的采购条款与条件或不以其他方式修改 HY 的采购条款与条件，包括但不限于规定的质保条件。

除非书面注明，否则 HY 产品不用于医疗、救护或生命维护，或其他因 HY 产品发生故障有可能导致人身伤亡的应用场合。客户使用或销售未明确指示可在上诉应用中使用的 HY 产品风险自负。如欲获得有关指定用于上诉应用的产品的书面条款及条件，请与 HY 授权人员联系。

本档或任何 HY 的行为不以禁止反言或其他方式授予任何知识产权的许可，无论显示还是暗示。本文提到的产品名称和标识可能为各自所有者的商标。