HSVC005AF1F thru HSVC440CAF1F

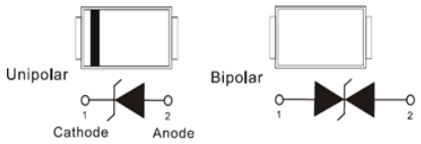
Transient Voltage Suppressors	REVERSE VOLTAGE 5 - 440 Volts Power Dissipation - 400 Watts

FEATURES

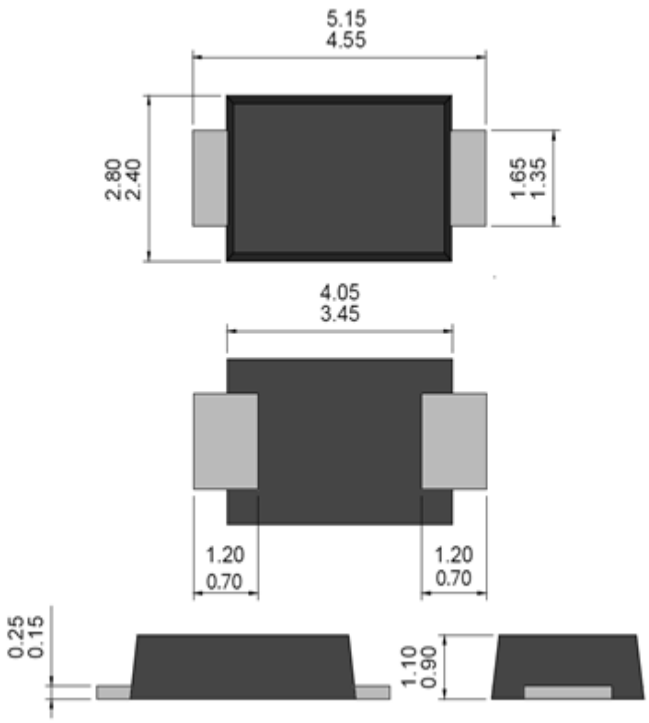
- Glass passivated chip
- 400W peak pulse power capability with a 10/1000 μs waveform,
  Repetitive rate (duty cycle) : 0.01%.
- Low leakage
- Uni and Bidirectional unit
- Excellent clamping capability
- Very fast response time
- RoHS compliant
- Epoxy: UL 94V-0 rate flame retardant

MECHANICAL DATA

- Method: SMAF-1
- Terminals: Solder plated solderable per MIL-STD-750 Method 2026
- Polarity: Color band denotes cathode end



SMAF-1



Dimensions in inches and (milimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25℃ 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 μs waveform (Notes 1)	P_{PP}	400	W
Peak Pulse Current with a 10/1000μs waveform (Notes 1)	I_{PP}	See Next Table	A
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only(Notes 2)	I_{FSM}	40	A
Max. instantaneous forward voltage at 25 A for unidirectional only (Notes 3)	V_F	3.5/5.0	V
Power dissipation on infinite heatsink at TL=75℃	P_D	1.0	w
Operating Junction Temperature Range	T_J	-55 to +150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Note: 1.Non-repetitive current pulse, per Fig.5 and derated above TA = 25℃ per Fig.1.

2.Measured on 8.3ms single half sine-wave, or equivalent square wave, duty cycle = 4 pulses per

3.VF<3.5V for devices of VBR<200V and VF<5.0V for devices of VBR>210V

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Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000µs	Peak Pulse Current 10/1000µs
					V_{BR} @ IT		IT	I_R @ V_{RWM}		V_C@I_{PP}	IPP
				V_{RWM}	Min.	Max.		UNI	BI		
UNI	BI	UNI	BI	V	V	V	m A	µA	µA	V	A
HSVC005AF1F	HSVC005CAF1F	AE	WE	5	6.4	7	10	800	1600	9.2	43.48
HSVC006AF1F	HSVC006CAF1F	AG	WG	6	6.67	7.37	10	800	1600	10.3	38.83
HSVC6P5AF1F	HSVC6P5CAF1F	AK	WK	6.5	7.22	7.98	10	500	1000	11.2	35.71
HSVC007AF1F	HSVC007CAF1F	AM	WM	7	7.78	8.6	10	200	400	12	33.33
HSVC7P5AF1F	HSVC7P5CAF1F	AP	WP	7.5	8.33	9.21	1	100	200	12.9	31.01
HSVC008AF1F	HSVC008CAF1F	AR	WR	8	8.89	9.83	1	50	100	13.6	29.41
HSVC8P5AF1F	HSVC8P5CAF1F	AT	WT	8.5	9.44	10.4	1	10	20	14.4	27.78
HSVC009AF1F	HSVC009CAF1F	AV	WV	9	10	11.1	1	5	5	15.4	25.97.6740AA
HSVC010AF1F	HSVC010CAF1F	AX	WX	10	11.1	12.3	1	5	5	17	23.53
HSVC011AF1F	HSVC011CAF1F	AZ	WZ	11	12.2	13.5	1	1	1	18.2	21.98
HSVC012AF1F	HSVC012CAF1F	BE	XE	12	13.3	14.7	1	1	1	19.9	20.1
HSVC013AF1F	HSVC013CAF1F	BG	XG	13	14.4	15.9	1	1	1	21.5	18.6
HSVC014AF1F	HSVC014CAF1F	BK	XK	14	15.6	17.2	1	1	1	23.2	17.24
HSVC015AF1F	HSVC015CAF1F	BM	XM	15	16.7	18.5	1	1	1	24.4	16.39
HSVC016AF1F	HSVC016CAF1F	BP	XP	16	17.8	19.7	1	1	1	26	15.38
HSVC017AF1F	HSVC017CAF1F	BR	XR	17	18.9	20.9	1	1	1	27.6	14.49
HSVC018AF1F	HSVC018CAF1F	BT	XT	18	20	22.1	1	1	1	29.2	13.7
HSVC019AF1F	HSVC019CAF1F	BB	XB	19	21.1	23.3	1	1	1	30.8	13
HSVC020AF1F	HSVC020CAF1F	BV	XV	20	22.2	24.5	1	1	1	32.4	12.35
HSVC022AF1F	HSVC022CAF1F	BX	XX	22	24.4	26.9	1	1	1	35.5	11.27
HSVC024AF1F	HSVC024CAF1F	BZ	XZ	24	26.7	29.5	1	1	1	38.9	10.28
HSVC026AF1F	HSVC026CAF1F	CE	YE	26	28.9	31.9	1	1	1	42.1	9.5
HSVC028AF1F	HSVC028CAF1F	CG	YG	28	31.1	34.4	1	1	1	45.4	8.81
HSVC030AF1F	HSVC030CAF1F	CK	YK	30	33.3	36.8	1	1	1	48.4	8.26
HSVC033AF1F	HSVC033CAF1F	CM	YM	33	36.7	40.6	1	1	1	53.3	7.5
HSVC036AF1F	HSVC036CAF1F	CP	YP	36	40	44.2	1	1	1	58.1	6.88
HSVC040AF1F	HSVC040CAF1F	CR	YR	40	44.4	49.1	1	1	1	64.5	6.2
HSVC043AF1F	HSVC043CAF1F	CT	YT	43	47.8	52.8	1	1	1	69.4	5.76
HSVC045AF1F	HSVC045CAF1F	CV	YV	45	50	55.3	1	1	1	72.7	5.5
HSVC048AF1F	HSVC048CAF1F	CX	YX	48	53.3	58.9	1	1	1	77.4	5.17
HSVC051AF1F	HSVC051CAF1F	CZ	YZ	51	56.7	62.7	1	1	1	82.4	4.85
HSVC054AF1F	HSVC054CAF1F	RE	ZE	54	60	66.3	1	1	1	87.1	4.59
HSVC058AF1F	HSVC058CAF1F	RG	ZG	58	64.4	71.2	1	1	1	93.6	4.27
HSVC060AF1F	HSVC060CAF1F	RK	ZK	60	66.7	73.7	1	1	1	96.8	4.13
HSVC064AF1F	HSVC064CAF1F	RM	ZM	64	71.1	78.6	1	1	1	103	3.88
HSVC070AF1F	HSVC070CAF1F	RP	ZP	70	77.8	86	1	1	1	113	3.54
HSVC075AF1F	HSVC075CAF1F	RR	ZR	75	83.3	92.1	1	1	1	121	3.31
HSVC078AF1F	HSVC078CAF1F	RT	ZT	78	86.7	95.8	1	1	1	126	3.17
HSVC080AF1F	HSVC080CAF1F	RB	ZB	80	88.8	97.6	1	1	1	129.6	3.09

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Part Number		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage		Max. Clamp Voltage 10/1000μs	Peak Pulse Current 10/1000μs
					V_{BR} @ IT		IT	I_R @ V_{RWM}		V_C@I_{PP}	IPP
				V_{RWM}	Min.	Max.		UNI	BI		
UNI	BI	UNI	BI	V	V	V	m A	μA	μA	V	A
HSVC085AF1F	HSVC085CAF1F	RV	ZV	85	94.4	104	1	1	1	137	2.92
HSVC090AF1F	HSVC090CAF1F	RX	ZX	90	100	111	1	1	1	146	2.74
HSVC100AF1F	HSVC100CAF1F	RZ	ZZ	100	111	123	1	1	1	162	2.47
HSVC110AF1F	HSVC110CAF1F	SE	VE	110	122	135	1	1	1	177	2.26
HSVC120AF1F	HSVC120CAF1F	SG	VG	120	133	147	1	1	1	193	2.07
HSVC130AF1F	HSVC130CAF1F	SK	VK	130	144	159	1	1	1	209	1.91
HSVC140AF1F	HSVC140CAF1F	SB	VB	140	155	171	1	1	1	226.8	1.76
HSVC150AF1F	HSVC150CAF1F	SM	VM	150	167	185	1	1	1	243	1.65
HSVC160AF1F	HSVC160CAF1F	SP	VP	160	178	197	1	1	1	259	1.54
HSVC170AF1F	HSVC170CAF1F	SR	VR	170	189	209	1	1	1	275	1.45
HSVC180AF1F	HSVC180CAF1F	ST	VT	180	200	220	1	1	1	291.6	1.37
HSVC190AF1F	HSVC190CAF1F	SV	VV	190	211	232	1	1	1	307.8	1.3
HSVC200AF1F	HSVC200CAF1F	SW	VW	200	224	247	1	1	1	324	1.23
HSVC220AF1F	HSVC220CAF1F	SX	VX	220	246	272	1	1	1	356	1.12
HSVC250AF1F	HSVC250CAF1F	SZ	VZ	250	279	309	1	1	1	405	0.99
HSVC300AF1F	HSVC300CAF1F	DE	HE	300	335	371	1	1	1	486	0.82
HSVC350AF1F	HSVC350CAF1F	DG	HG	350	391	432	1	1	1	567	0.71
HSVC400AF1F	HSVC400CAF1F	DK	HK	400	447	494	1	1	1	648	0.62
HSVC440AF1F	HSVC440CAF1F	DM	HM	440	492	543	1	1	1	713	0.56

RATING AND CHARACTERTIC CURVES

Fig. 1 Pulse Derating Curve

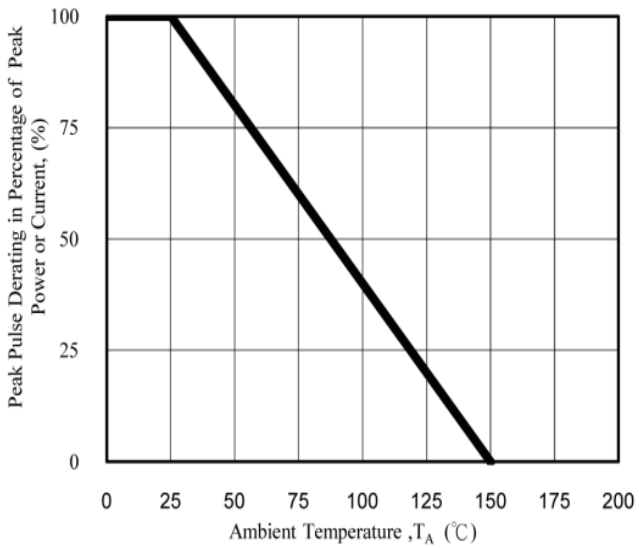
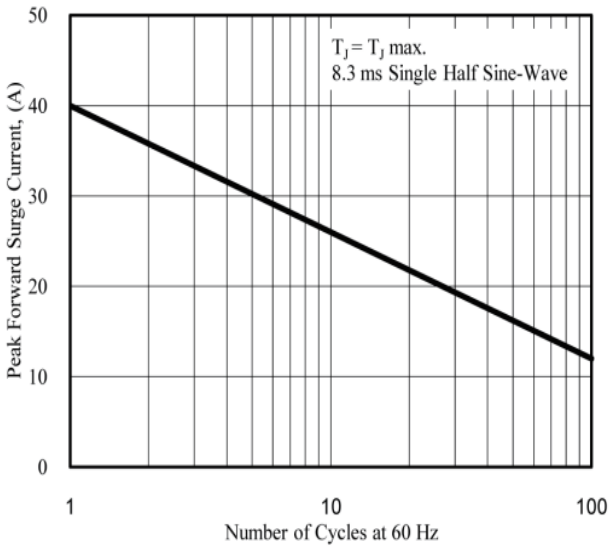


Fig. 2 Max. Non-Repetitive Surge Current



The curve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!

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Fig. 3 Steady State Power Derating Curve

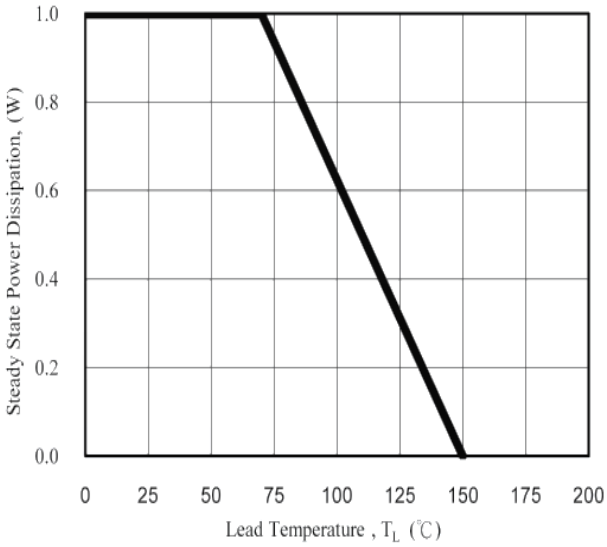


Fig. 4 Peak Pulse Power Rating Curve

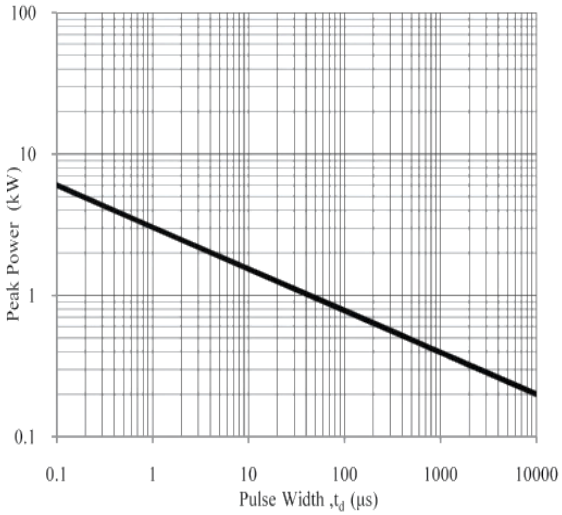


Fig. 5 Pulse Waveform

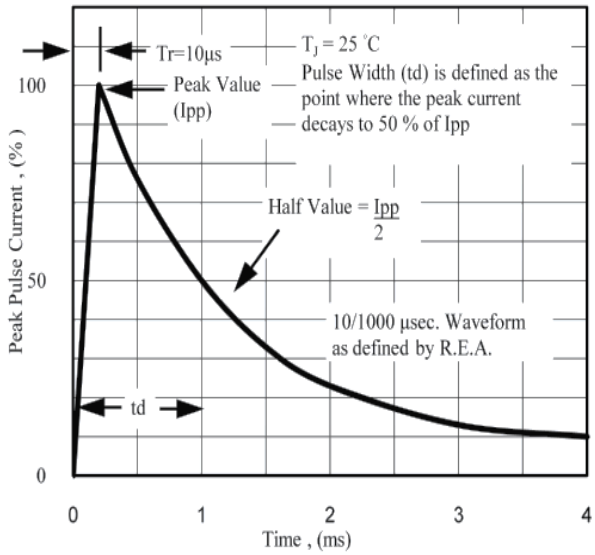
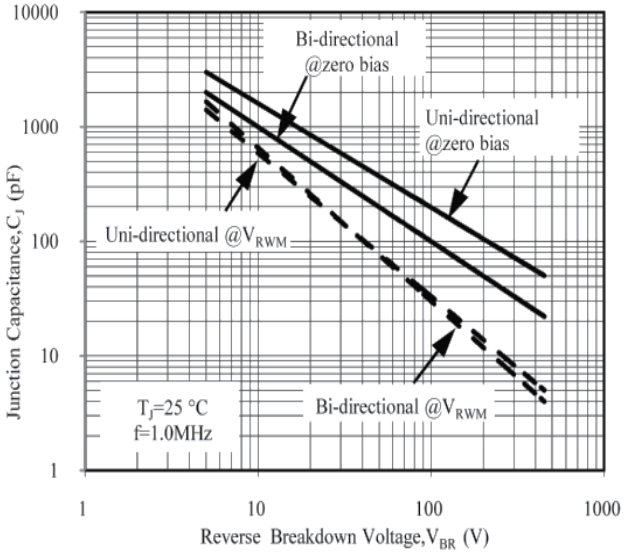


Fig. 6 Typical Junction Capacitance



The curve graph is for reference only, can't be the basis for judgment(曲线图仅供参考)!

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Rev. 2, 16-Mar-2017