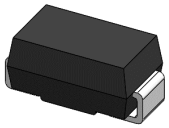
400W,5 - 170V Transient Voltage Suppressors

Features

- Very fast response time
- Glass passivated junction
- Moisture sensitivity: level 1, per J-STD-020
- Available in unidirectional and bidirectional
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21 definition
- 400W peak pulse power capability with a 10/1000 μs waveform

RoHS COMPLIANT



SMA(DO-214AC)

Applications

- SMPS
- Adapters
- Monitor

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)			
Parameter	**Symbol**	**Ratings**	**Unit**
Peak power dissipation with a 10/1000us waveform	P_{PPM}	400	W
Peak pulse current with a 10/1000us waveform	I_{PPM}	See Next Table	A
Power dissipation, on infinite heat sink at T_L=75℃	P_D	3	W
Peak forward surge current, 8.3ms single half-sine wave	I_{FSM}	40	A
Typical Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	90	℃/W
Typical Thermal Resistance , Junction to Case	$R_{\theta JC}$	20	℃/W
Typical Thermal Resistance , Junction to Lead	$R_{\theta JL}$	25	℃/W
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150	℃

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		UNI	BI	Min	Max					
SMAJ5.0AS	SMAJ5.0CAS	AES	WES	6.40	7.07	10.0	5.0	800	43.5	9.2
SMAJ6.0AS	SMAJ6.0CAS	AGS	WGS	6.67	7.37	10.0	6.0	800	38.8	10.3
SMAJ6.5AS	SMAJ6.5CAS	AKS	WKS	7.22	7.98	10.0	6.5	500	35.7	11.2
SMAJ7.0AS	SMAJ7.0CAS	AMS	WMS	7.78	8.60	10.0	7.0	200	33.3	12.0
SMAJ7.5AS	SMAJ7.5CAS	APS	WPS	8.33	9.21	1.0	7.5	100	31.0	12.9
SMAJ8.0AS	SMAJ8.0CAS	ARS	WRS	8.89	9.83	1.0	8.0	50	29.4	13.6
SMAJ8.5AS	SMAJ8.5CAS	ATS	WTS	9.44	10.4	1.0	8.5	10	27.8	14.4
SMAJ9.0AS	SMAJ9.0CAS	AVS	WVS	10.0	11.1	1.0	9.0	5.0	26.0	15.4
SMAJ10AS	SMAJ10CAS	AXS	WXS	11.1	12.3	1.0	10	1.0	23.5	17.0
SMAJ11AS	SMAJ11CAS	AZS	WZS	12.2	13.5	1.0	11	1.0	22.0	18.2
SMAJ12AS	SMAJ12CAS	BES	XES	13.3	14.7	1.0	12	1.0	20.1	19.9
SMAJ13AS	SMAJ13CAS	BGS	XGS	14.4	15.9	1.0	13	1.0	18.6	21.5
SMAJ14AS	SMAJ14CAS	BKS	XKS	15.6	17.2	1.0	14	1.0	17.2	23.2
SMAJ15AS	SMAJ15CAS	BMS	XMS	16.7	18.5	1.0	15	1.0	16.4	24.4
SMAJ16AS	SMAJ16CAS	BPS	XPS	17.8	19.7	1.0	16	1.0	15.4	26.0
SMAJ17AS	SMAJ17CAS	BRS	XRS	18.9	20.9	1.0	17	1.0	14.5	27.6
SMAJ18AS	SMAJ18CAS	BTS	XTS	20.0	22.1	1.0	18	1.0	13.7	29.2
SMAJ20AS	SMAJ20CAS	BVS	XVS	22.2	24.5	1.0	20	1.0	12.3	32.4
SMAJ22AS	SMAJ22CAS	BXS	XXS	24.4	26.9	1.0	22	1.0	11.3	35.5
SMAJ24AS	SMAJ24CAS	BZS	XZS	26.7	29.5	1.0	24	1.0	10.3	38.9
SMAJ26AS	SMAJ26CAS	CES	YES	28.9	31.9	1.0	26	1.0	9.5	42.1
SMAJ28AS	SMAJ28CAS	CGS	YGS	31.1	34.4	1.0	28	1.0	8.8	45.4
SMAJ30AS	SMAJ30CAS	CKS	YKS	33.3	36.8	1.0	30	1.0	8.3	48.4
SMAJ33AS	SMAJ33CAS	CMS	YMS	36.7	40.6	1.0	33	1.0	7.5	53.3
SMAJ36AS	SMAJ36CAS	CPS	YPS	40.0	44.4	1.0	36	1.0	6.9	58.1
SMAJ40AS	SMAJ40CAS	CRS	YRS	44.4	49.1	1.0	40	1.0	6.2	64.5
SMAJ43AS	SMAJ43CAS	CTS	YTS	47.8	52.8	1.0	43	1.0	5.8	69.4
SMAJ45AS	SMAJ45CAS	CVS	YVS	50.0	55.3	1.0	45	1.0	5.5	72.7
SMAJ48AS	SMAJ48CAS	CXS	YXS	53.3	58.9	1.0	48	1.0	5.2	77.4
SMAJ51AS	SMAJ51CAS	CZS	YZS	56.7	62.7	1.0	51	1.0	4.9	82.4
SMAJ54AS	SMAJ54CAS	RES	ZES	60.0	66.3	1.0	54	1.0	4.6	87.1
SMAJ58AS	SMAJ58CAS	RGS	ZGS	64.4	71.2	1.0	58	1.0	4.3	93.6
SMAJ60AS	SMAJ60CAS	RKS	ZKS	66.7	73.7	1.0	60	1.0	4.1	96.8
SMAJ64AS	SMAJ64CAS	RMS	ZMS	71.1	78.6	1.0	64	1.0	3.9	103

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Marking		Breakdown Voltage VBR (Volts)		Test Current I_T (mA)	Stand off Voltage V_{WM} (Volts)	Maximum reverse leakage at VWM I_D (μA)	Maximum Peak Pulse Current I_{ppM} (A)	Maximum Clamping Voltage at I_{PPM} V_C(Volts)
		UNI	BI	Min	Max					
SMAJ70AS	SMAJ70CAS	RPS	ZPS	77.8	86.0	1.0	70	1.0	3.5	113
SMAJ75AS	SMAJ75CAS	RRS	ZRS	83.3	92.1	1.0	75	1.0	3.3	121
SMAJ78AS	SMAJ78CAS	RTS	ZTS	86.7	95.8	1.0	78	1.0	3.2	126
SMAJ85AS	SMAJ85CAS	RVS	ZVS	94.4	104	1.0	85	1.0	2.9	137
SMAJ90AS	SMAJ90CAS	RXS	ZXS	100	111	1.0	90	1.0	2.7	146
SMAJ100AS	SMAJ100CAS	RZS	ZZS	111	123	1.0	100	1.0	2.5	162
SMAJ110AS	SMAJ110CAS	SES	VES	122	135	1.0	110	1.0	2.3	177
SMAJ120AS	SMAJ120CAS	SGS	VGS	133	147	1.0	120	1.0	2.1	193
SMAJ130AS	SMAJ130CAS	SKS	VKS	144	159	1.0	130	1.0	1.9	209
SMAJ150AS	SMAJ150CAS	SMS	VMS	167	185	1.0	150	1.0	1.6	243
SMAJ160AS	SMAJ160CAS	SPS	VPS	178	197	1.0	160	1.0	1.5	259
SMAJ170AS	SMAJ170CAS	SRS	VRS	189	209	1.0	170	1.0	1.5	275

Note：

1. The thermal resistance from junction to ambient, case or lead, mounted on P.C.B with 5×5mm copper pads

Ratings and Characteristics Curves

(T_A = 25℃ unless otherwise noted)

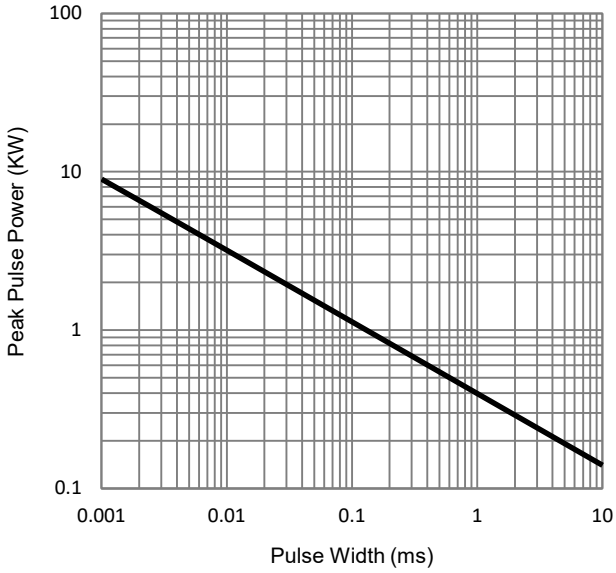


Fig.1 –Peak Pulse Power Derating Curve

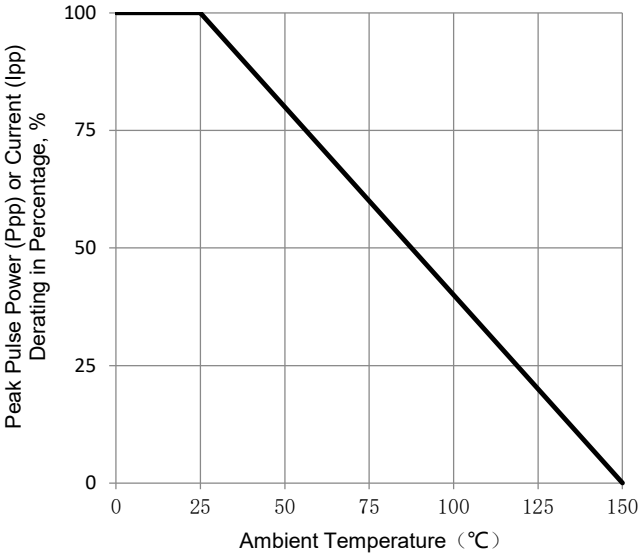


Fig.2 – Pulse Power vs Ambient Temperature

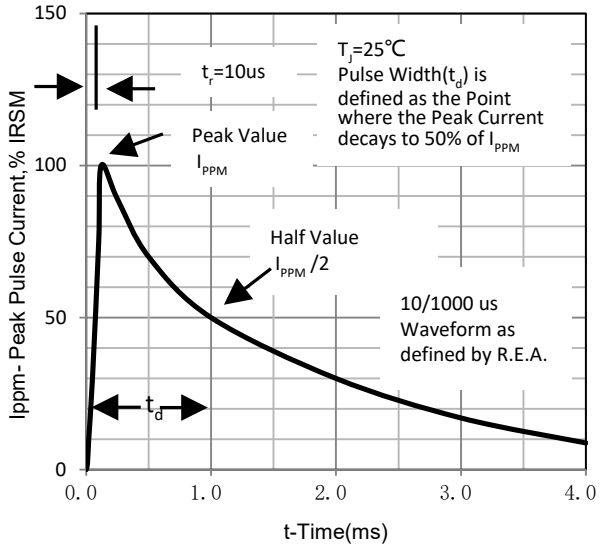


Fig.3 – Pulse Waveform

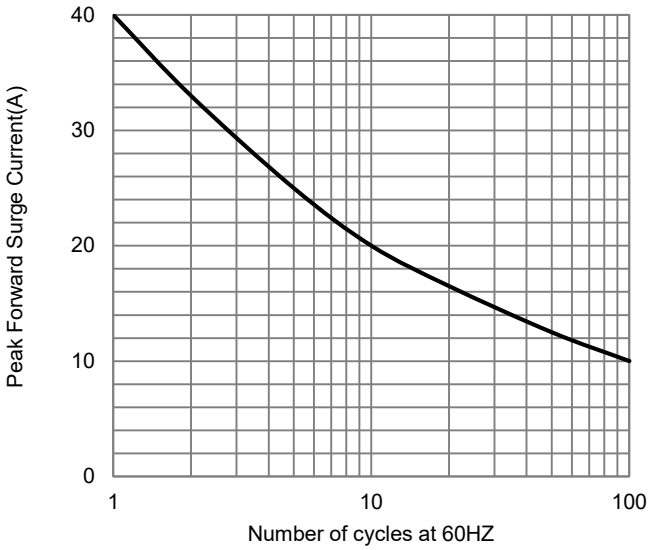
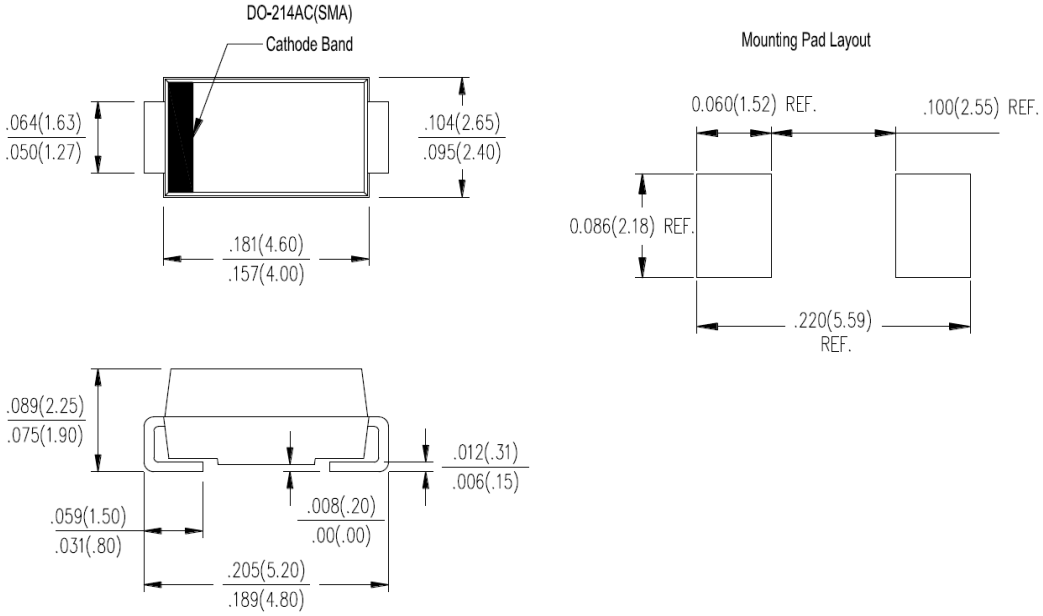


Fig.4 – Maximum Non-Repetitive Surge Current

Package Outline Dimensions

in inches (millimeters)

SMA (DO-214AC)



Revision History

Document Version	Date of release	Description of changes
Rev.A	2023.06.15	Released Datasheet
Rev.B	2023.10.13	Modify document format

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