

BRSMBJ SeriesQ

Rev.A Aug.-2024

描述 / Descriptions

表面贴装瞬态电压抑制器功率：600W,反向浪涌电压：5.0V~440V，SMB 封装。

Surface mount transient voltage suppressor power 600 watts,Stand-Off Voltage：5.0V~440V ,SMB package.

特征 / Features

玻璃钝化，低电感，适用表面贴装，符合 AEC-Q101 标准高可靠性要求，无卤产品。

Glass passivated junction, Low inductance, For surface mounted applications, Qualified to AEC-Q101 Standards for High Reliability, HF Product.

用途 / Applications

一般用途，满足汽车应用的严格要求。

General purpose, Meet the stringent requirements of automotive applications.

内部等效电路 / Equivalent Circuit

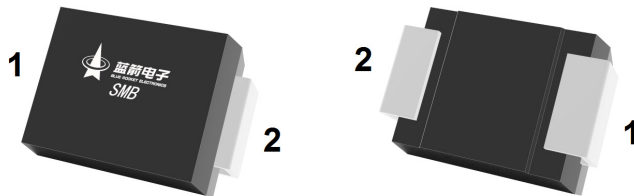


Unipolar



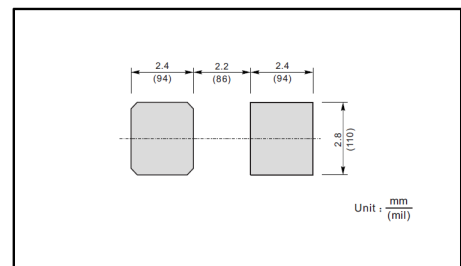
Bipolar

引脚排列 / Pinning



PIN	DESCRIPTION
1	Cathode
2	Anode

The recommended mounting pad size



印章代码 / Marking

见印章说明。

See Marking Instructions.

极限参数 / Absolute Maximum Ratings(Ta=25°C)

参数 Parameter	符号 Symbol	数值 Rating	单位 Unit
Peak Pulse Power Dissipation on 10/1000 s waveform (Note1,Note2, Fig.1).	P _{PPM}	600	W
Peak Forward Surge Current,8.3ms Single Half Sine-Wave Superimposed on Rated Load, (JEDEC Method) (Note 3, Fig4).	I _{FSM} (UNI)	100	A
Peak Pulse Current on 10/1000 us waveform (Note 1, Fig 3)	I _{PPM}	see Table 1	A
Typical Junction capacitance at VR=4V, f=1MHz	C _J	390	pF
ESD Voltage per IEC6100-4-2	Contact	V _{ESD1}	±30 KV
	Air	V _{ESD2}	±30 KV
Typical Thermal Resistance Junction to Ambient(Note 2)	R _{θJA}	100	°C/W
Operating Junction Temperature and Storage Temperature Range	T _j , T _{stg}	-65 ~ +150	°C

Note:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A = 25°C per Fig. 2.
2. Mounted on 5 mm² (0.13mm thick) land areas.
3. Measured on 8.3ms, single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum
4. Peak pulse power waveform is 10/1000μS.

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DATA SHEET

电性能参数 / Electrical Characteristics(Ta=25°C)

Type		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current	Package	
			V _{BR} @ I _T						SMB	
		V _{RRM}	Min	Max	I _T	I _R @ V _{RRM}	V _C @ I _{PP}	I _{PP}	Device Marking Ccode	
UNI	BI	V	V	V	mA	uA	V	A	UNI	BI
BRSMBJ5.0AQ	BRSMBJ5.0CAQ	5	6.4	7	10	800	9.2	65.3	KEQ	AEQ
BRSMBJ6.0AQ	BRSMBJ6.0CAQ	6	6.67	7.37	10	800	10.3	58.3	KGQ	AGQ
BRSMBJ6.5AQ	BRSMBJ6.5CAQ	6.5	7.22	7.98	10	500	11.2	53.6	KKQ	AKQ
BRSMBJ7.0AQ	BRSMBJ7.0CAQ	7	7.78	8.6	10	200	12.0	50.0	KMQ	AMQ
BRSMBJ7.5AQ	BRSMBJ7.5CAQ	7.5	8.33	9.21	1	100	12.9	46.6	KPQ	APQ
BRSMBJ8.0AQ	BRSMBJ8.0CAQ	8	8.89	9.83	1	50	13.6	44.2	KRQ	ARQ
BRSMBJ8.5AQ	BRSMBJ8.5CAQ	8.5	9.44	10.4	1	20	14.4	41.7	KTQ	ATQ
BRSMBJ9.0AQ	BRSMBJ9.0CAQ	9	10	11.1	1	10	15.4	39.0	KVQ	AVQ
BRSMBJ10AQ	BRSMBJ10CAQ	10	11.1	12.3	1	5	17.0	35.3	KXQ	AXQ
BRSMBJ11AQ	BRSMBJ11CAQ	11	12.2	13.5	1	1	18.2	33.0	KZQ	AZQ
BRSMBJ12AQ	BRSMBJ12CAQ	12	13.3	14.7	1	1	19.9	30.2	LEQ	BEQ
BRSMBJ13AQ	BRSMBJ13CAQ	13	14.4	15.9	1	1	21.5	28.0	LGQ	BGQ
BRSMBJ14AQ	BRSMBJ14CAQ	14	15.6	17.2	1	1	23.2	25.9	LKQ	BKQ
BRSMBJ15AQ	BRSMBJ15CAQ	15	16.7	18.5	1	1	24.4	24.6	LMQ	BMQ
BRSMBJ16AQ	BRSMBJ16CAQ	16	17.8	19.7	1	1	26.0	23.1	LPQ	BPQ
BRSMBJ17AQ	BRSMBJ17CAQ	17	18.9	20.9	1	1	27.6	21.8	LRQ	BRQ
BRSMBJ18AQ	BRSMBJ18CAQ	18	20	22.1	1	1	29.2	20.6	LTV	BTQ
BRSMBJ20AQ	BRSMBJ20CAQ	20	22.2	24.5	1	1	32.4	18.6	LVQ	BVQ
BRSMBJ22AQ	BRSMBJ22CAQ	22	24.4	26.9	1	1	35.5	16.9	LXQ	BXQ
BRSMBJ24AQ	BRSMBJ24CAQ	24	26.7	29.5	1	1	38.9	15.5	LZQ	BZQ
BRSMBJ26AQ	BRSMBJ26CAQ	26	28.9	31.9	1	1	42.1	14.3	MEQ	CEQ
BRSMBJ28AQ	BRSMBJ28CAQ	28	31.1	34.4	1	1	45.4	13.3	MGQ	CGQ
BRSMBJ30AQ	BRSMBJ30CAQ	30	33.3	36.8	1	1	48.4	12.4	MKQ	CKQ
BRSMBJ33AQ	BRSMBJ33CAQ	33	36.7	40.6	1	1	53.3	11.3	MMQ	CMQ
BRSMBJ36AQ	BRSMBJ36CAQ	36	40	44.2	1	1	58.1	10.4	MPQ	CPQ
BRSMBJ40AQ	BRSMBJ40CAQ	40	44.4	49.1	1	1	64.5	9.3	MRQ	CRQ
BRSMBJ43AQ	BRSMBJ43CAQ	43	47.8	52.8	1	1	69.4	8.7	MTQ	CTQ

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			V _{BR} @ I _T						SMB	
		V _{RRM}	Min	Max	I _T	I _R @ V _{RRM}	V _C @ I _{PP}	I _{PP}	Device Marking Ccode	
UNI	BI	V	V	V	mA	uA	V	A	UNI	BI
BRSMBJ45AQ	BRSMBJ45CAQ	45	50	55.3	1	1	72.7	8.3	MVQ	CVQ
BRSMBJ48AQ	BRSMBJ48CAQ	48	53.3	58.9	1	1	77.4	7.8	MXQ	CXQ
BRSMBJ51AQ	BRSMBJ51CAQ	51	56.7	62.7	1	1	82.4	7.3	MZQ	CZQ
BRSMBJ54AQ	BRSMBJ54CAQ	54	60	66.3	1	1	87.1	6.9	NEQ	DEQ
BRSMBJ58AQ	BRSMBJ58CAQ	58	64.4	71.2	1	1	93.6	6.5	NGQ	DGQ
BRSMBJ60AQ	BRSMBJ60CAQ	60	66.7	73.7	1	1	96.8	6.2	NKQ	DKQ
BRSMBJ64AQ	BRSMBJ64CAQ	64	71.1	78.6	1	1	103.0	5.9	NMQ	DMQ
BRSMBJ70AQ	BRSMBJ70CAQ	70	77.8	86	1	1	113.0	5.3	NPQ	DPQ
BRSMBJ75AQ	BRSMBJ75CAQ	75	83.3	92.1	1	1	121.0	5.0	NRQ	DRQ
BRSMBJ78AQ	BRSMBJ78CAQ	78	86.7	95.8	1	1	126.0	4.8	NTQ	DTQ
BRSMBJ85AQ	BRSMBJ85CAQ	85	94.4	104	1	1	137.0	4.4	NVQ	DVQ
BRSMBJ90AQ	BRSMBJ90CAQ	90	100	111	1	1	146.0	4.1	NXQ	DXQ
BRSMBJ100AQ	BRSMBJ100CAQ	100	111	123	1	1	162.0	3.7	NZQ	DZQ
BRSMBJ110AQ	BRSMBJ110CAQ	110	122	135	1	1	177.0	3.4	PEQ	EEQ
BRSMBJ120AQ	BRSMBJ120CAQ	120	133	147	1	1	193.0	3.1	PGQ	EGQ
BRSMBJ130AQ	BRSMBJ130CAQ	130	144	159	1	1	209.0	2.9	PKQ	EKQ
BRSMBJ150AQ	BRSMBJ150CAQ	150	167	185	1	1	243.0	2.5	PMQ	EMQ
BRSMBJ160AQ	BRSMBJ160CAQ	160	178	197	1	1	259.0	2.3	PPQ	EPQ
BRSMBJ170AQ	BRSMBJ170CAQ	170	189	209	1	1	275.0	2.2	PRQ	ERQ
BRSMBJ180AQ	BRSMBJ180CAQ	180	201	222	1	1	292.0	2.1	PTQ	ETQ
BRSMBJ188AQ	BRSMBJ188CAQ	188	209	231	1	1	304.0	2.0	PBQ	EBQ
BRSMBJ200AQ	BRSMBJ200CAQ	200	224	247	1	1	324.0	1.9	PVQ	EVQ
BRSMBJ220AQ	BRSMBJ220CAQ	220	246	272	1	1	356.0	1.7	PXQ	EXQ
BRSMBJ250AQ	BRSMBJ250CAQ	250	279	309	1	1	405.0	1.5	PZQ	EZQ
BRSMBJ300AQ*	BRSMBJ300CAQ*	300	335	371	1	1	486.0	1.3	QEQ	FEQ
BRSMBJ350AQ*	BRSMBJ350CAQ*	350	391	432	1	1	567.0	1.1	QGQ	FGQ
BRSMBJ400AQ*	BRSMBJ400CAQ*	400	447	494	1	1	648.0	0.6	QKQ	FKQ
BRSMBJ440AQ*	BRSMBJ440CAQ*	440	492	543	1	1	713.0	0.9	QMQ	FMQ

电参数曲线图 / Electrical Characteristic Curve

Fig.1 Peak Pulse Power Rating Curve

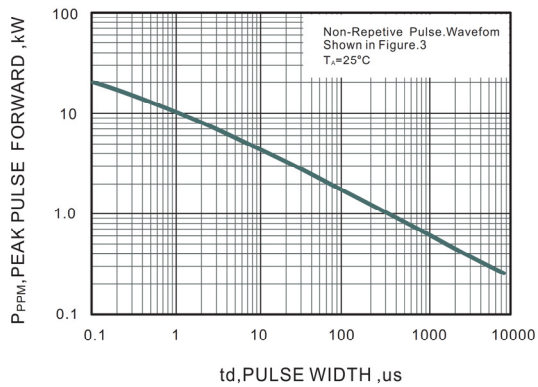


Fig.2 Forward Current Derating Curve

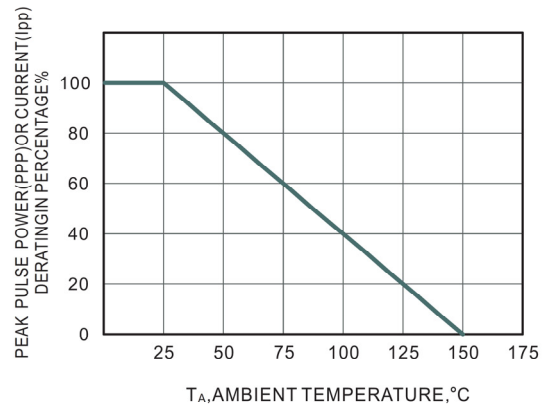


Fig.3 Pulse Waveform

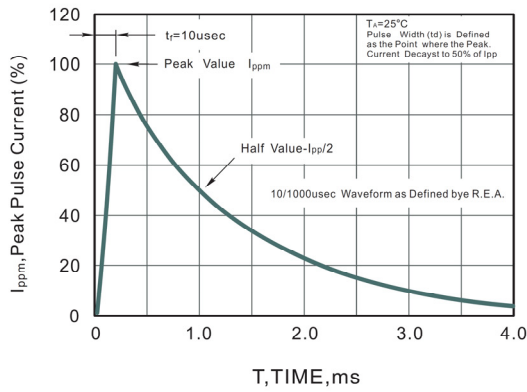
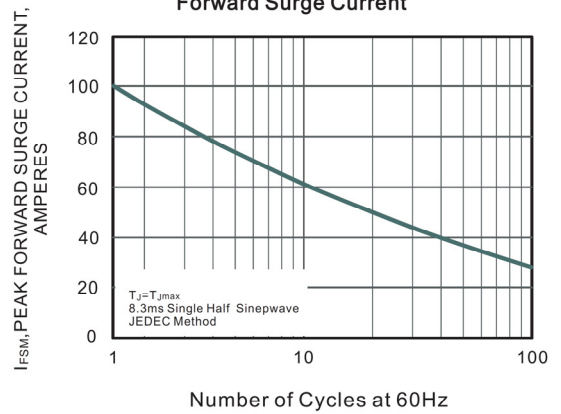
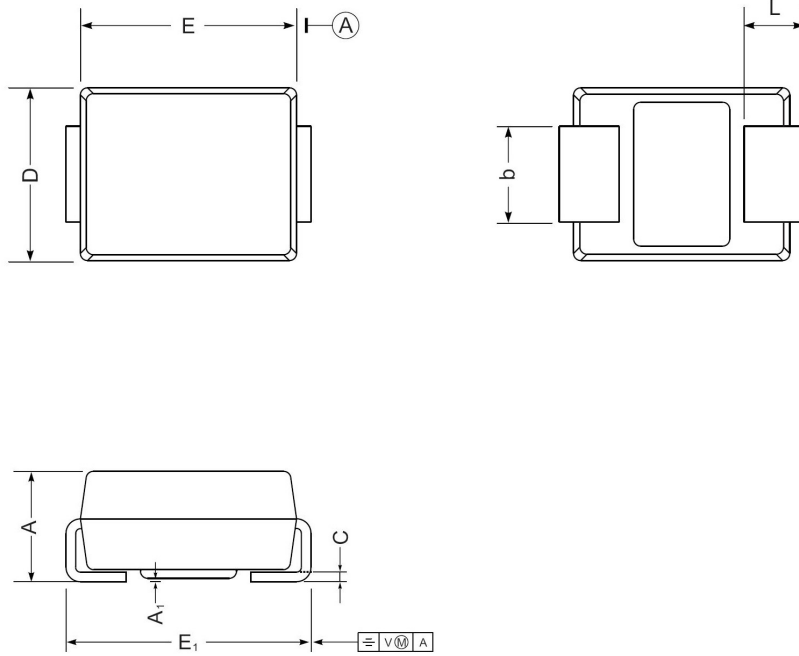


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current



外形尺寸图 / Package Dimensions

SMB



SMB mechanical data

UNIT		A	E	D	E ₁	A ₁	L	C	b
mm	max	2.44	4.70	3.94	5.59	0.20	1.5	0.305	2.2
	min	2.13	4.06	3.3	5.08	0.05	0.8	0.152	1.9
mil	max	96	185	155	220	7.9	59	12	87
	min	84	160	130	200	2.0	32	6	75

印章说明 / Marking Instructions



说明：

KE : 为型号代码

Q : 为汽车无卤产品标识

**** : 为生产批号代码，随生产批号变化

Note:

KE : Product Type Code

Q: Automobile halogen-free product Code

**** : Lot No. Code, code change with Lot No

印章说明 / Marking Instructions



说明：

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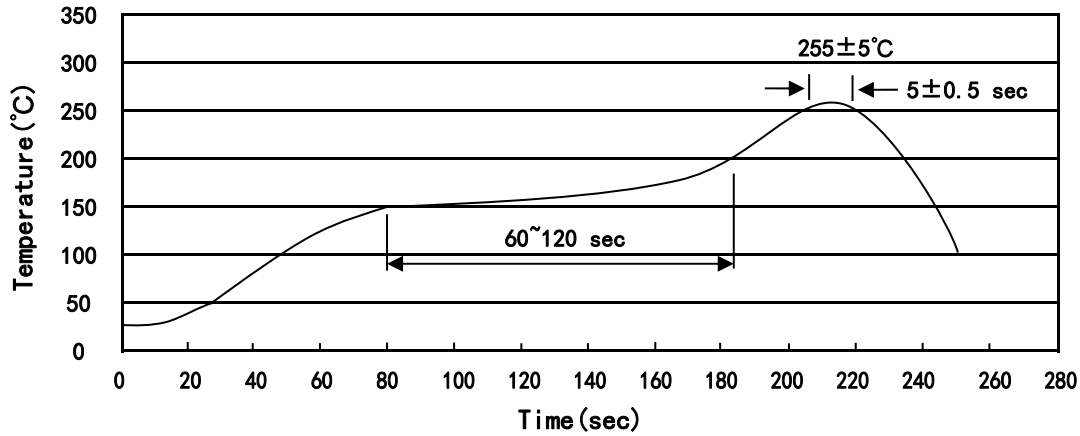
Note:

AE : Product Type Code

Q: Automobile halogen-free product Code

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回流焊温度曲线图(无铅) / Temperature Profile for IR Reflow Soldering(Pb-Free)



说明：

- 1、预热温度 150~200°C，时间 60~120sec;
- 2、峰值温度 255±5°C，时间持续为 5±0.5sec;
- 3、焊接制程冷却速度为 2~10°C/sec.

Note:

- 1.Preheating:150~200°C, Time:60~120sec.
- 2.Peak Temp.:255±5°C, Duration:5±0.5sec.
3. Cooling Speed: 2~10°C/sec.

耐焊接热试验条件 / Resistance to Soldering Heat Test Conditions

温度：260±5°C

时间：10±1 sec.

Temp.:260±5°C

Time:10±1 sec

包装规格 / Packaging SPEC.

卷盘包装 / REEL

Package Type 封装形式	Units 包装数量					Dimension 包装尺寸 (unit: mm ³)		
	Units/Reel 只/卷盘	Reels/Inner Box 卷盘/盒	Units/Inner Box 只/盒	Inner Boxes/Outer Box 盒/箱	Units/Outer Box 只/箱	Reel	Inner Box 盒	Outer Box 箱
SMB	3,000	2	6,000	7	42,000	13" ×12	336X336X40	380X335X366

使用说明 / Notices