ASMA6J SERIES(LS)

SURFACE-MOUNT UNI-DIRECTIONAL AND BI-DIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS

STAND-OFF VOLTAGE - 5.0 to 75 Volts POWER DISSIPATION - 600 Watts

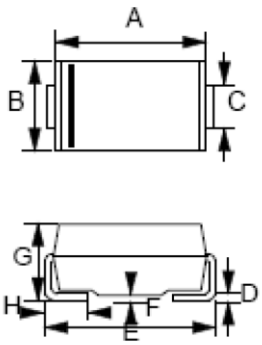
FEATURES

- For surface-mounted applications
- Reliable low-cost construction utilizing molded plastic technique
- Typical IR less than 1μA above 10V
- Fast response time: typically less than 1.0ns
  - For Uni-direction, less than 5.0ns
  - For Bi-direction, form 0 Volt to BV min
- AEC-Q101 qualified
- PPAP capable
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **The ASMA6J SERIES(LS) are suitable for automotive applications requiring specific change control; these parts are AEC-Q101 qualified, PPAP capable, and manufactured in IATF16949 certified facilities.**
  https://www.diodes.com/quality/product-definitions/

MECHANICAL DATA

- Package: Molded plastic
- Package Material: Molding compound, UL Flammability classification 94V-0, (No Br. Sb. Cl.) "Halogen-free".
- Polarity: By cathode band denotes uni-directional device; none cathode band denotes bi-directional device
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals Finish: Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.064 grams (Approximate)

SMA



SMA		
DIM.	MIN.	MAX.
A	4.06	4.57
B	2.29	2.92
C	1.27	1.63
D	0.15	0.31
E	4.83	5.59
F	0.05	0.20
G	2.01	2.40
H	0.76	1.52
All Dimensions in millimeter		

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

ABSOLUTE RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Peak Pulse Power at T_J = 25℃, Tp = 1ms (Note 4)	P_{PK}	600	W
Peak Forward Surge Current 8.3ms Single Half Sine Wave @T_J = 25℃ (Note 5)	I_{FSM}	60	A
Steady State Power Dissipation with PCB	$P_{M(AV)}$	1.5	W
Maximum Instantaneous Forward Voltage at 16A (Notes 5, 6)	V_F	See Note 6	V
Typical Thermal Resistance (Note 7)	R_{thJA} R_{thJL} R_{thJC}	75 25 15	°C/W
Operating Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

Notes:

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See https://www.diodes.com/quality/lead-free/ for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
4. Non-repetitive current pulse, per Fig. 3 and derated above T_J = 25℃ per Fig. 1.
5. Only for uni-directional units.
6. V_F max = 2.5V at I_F = 16A 300μs square wave pulse.
7. Thermal resistance from junction to ambient, lead and case.

ELECTRICAL CHARACTERISTICS

Device Uni-Directional	Device Bi-Directional	Device Marking Code		Reverse Standoff Voltage	Breakdown Voltage VBR Volts			Max. Clamping Voltage @Ipp	Max. Peak Pulse Current	Max. Reverse Leakage @VR
		(UNI)	(BI)	VR (V)	Min.	Max.	@It (mA)	VC (V)	IPP (A)	IR (μA)
ASMA6J5.0A	—	AOE	—	5.0	6.40	7.07	10	9.1	68.0	100.0
ASMA6J6.0A	—	AOG	—	6.0	6.70	7.41	10	9.5	61	100.0
ASMA6J6.5A	—	AOK	—	6.5	7.20	7.96	10	11.2	53.6	100.0
ASMA6J7.0A	—	AOM	—	7.0	7.78	8.60	10	12.0	50.0	20.0
ASMA6J7.5A	—	AOP	—	7.5	8.33	9.21	1.0	12.9	46.5	20.0
ASMA6J8.0A	—	AOR	—	8.0	8.89	9.83	1.0	13.6	44.1	20.0
ASMA6J8.5A	—	AOT	—	8.5	9.4	10.4	1.0	13.3	41.7	20.0
ASMA6J9.0A	—	AOV	—	9.0	10.0	11.1	1.0	15.4	39.0	20.0
ASMA6J10A	ASMA6J10CA	ASX	AJX	10.0	11.1	12.3	1.0	15.7	37	0.2
ASMA6J11A	ASMA6J11CA	ASZ	AJZ	11.0	12.2	13.5	1.0	18.2	33.0	0.2
ASMA6J12A	ASMA6J12CA	ASE	AJE	12.0	13.3	14.7	1.0	18.8	31.0	0.2
ASMA6J13A	ASMA6J13CA	ASG	AJG	13.0	14.4	15.9	1.0	20.4	29.0	0.2
ASMA6J14A	ASMA6J14CA	ASK	AJK	14.0	15.6	17.2	1.0	23.2	25.8	0.2
ASMA6J15A	ASMA6J15CA	ASM	AJM	15.0	16.7	18.5	1.0	23.6	25.1	0.2
ASMA6J16A	ASMA6J16CA	ASD	AJP	16.0	17.8	19.7	1.0	26.0	23.1	0.2
ASMA6J17A	ASMA6J17CA	ASN	AJR	17.0	18.9	20.9	1.0	27.6	21.7	0.2
ASMA6J18A	ASMA6J18CA	ASK	AJT	18.0	20.0	22.1	1.0	28.3	21.5	0.2
ASMA6J20A	ASMA6J20CA	AQV	AKV	20.0	22.2	24.5	1.0	31.4	19.4	0.2
ASMA6J22A	ASMA6J22CA	AQX	AKX	22.0	24.4	27.0	1.0	35.5	16.9	0.2
ASMA6J24A	ASMA6J24CA	AQZ	AKZ	24.0	26.7	29.5	1.0	37.8	16.0	0.2
ASMA6J26A	ASMA6J26CA	AQE	AKE	26.0	28.9	31.9	1.0	40.9	14.9	0.2
ASMA6J28A	ASMA6J28CA	AQG	AKG	28.0	31.1	34.4	1.0	44.0	13.8	0.2
ASMA6J30A	ASMA6J30CA	AQK	AKK	30.0	33.3	36.8	1.0	48.4	12.4	0.2
ASMA6J33A	ASMA6J33CA	AQM	AKM	33.0	36.7	40.6	1.0	51.9	11.8	0.2
ASMA6J36A	ASMA6J36CA	AQP	AKP	36.0	40.0	44.2	1.0	58.1	10.3	0.2
ASMA6J40A	ASMA6J40CA	ASR	ANR	40.0	44.4	49.1	1.0	62.8	9.7	0.2
ASMA6J43A	ASMA6J43CA	AST	ANT	43.0	47.8	52.8	1.0	69.4	8.6	0.2
ASMA6J45A	ASMA6J45CA	ASV	ANV	45.0	50.0	55.3	1.0	72.7	8.3	0.2
ASMA6J48A	ASMA6J48CA	ASX	ANX	48.0	53.3	58.9	1.0	75.4	8.1	0.2
ASMA6J51A	ASMA6J51CA	AFZ	ANZ	51.0	56.7	62.7	1.0	82.4	7.3	0.2
ASMA6J54A	ASMA6J54CA	AFC	ANE	54.0	60.0	66.3	1.0	87.1	6.9	0.2
ASMA6J58A	ASMA6J58CA	ASG	ALG	58.0	64.4	71.2	1.0	91.1	6.7	0.2
ASMA6J60A	ASMA6J60CA	ASK	ALK	60.0	66.7	73.7	1.0	96.8	6.2	0.2
ASMA6J64A	ASMA6J64CA	ASM	ALM	64.0	71.1	78.6	1.0	103	5.8	0.2
ASMA6J70A	ASMA6J70CA	ASP	ALP	70.0	77.8	86.0	1.0	110	5.5	0.2
ASMA6J75A	ASMA6J75CA	ASR	ALR	75.0	83.3	92.1	1.0	121	4.9	0.2

Notes:
8. Suffix 'A' denotes 5% tolerance device, no suffix denotes 10% tolerance device.
9. Add suffix 'C' or 'CA' after part number to specify bi-directional devices.
10. The IR limit is double for bi-directional devices.
11. Only uni-directional type of 10V and less.

RATING AND CHARACTERISTIC CURVES
ASMA6J SERIES

FIG.1 - PULSE DERATING CURVE

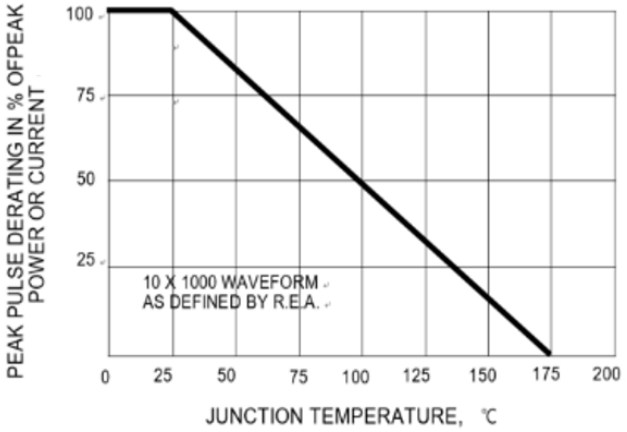


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

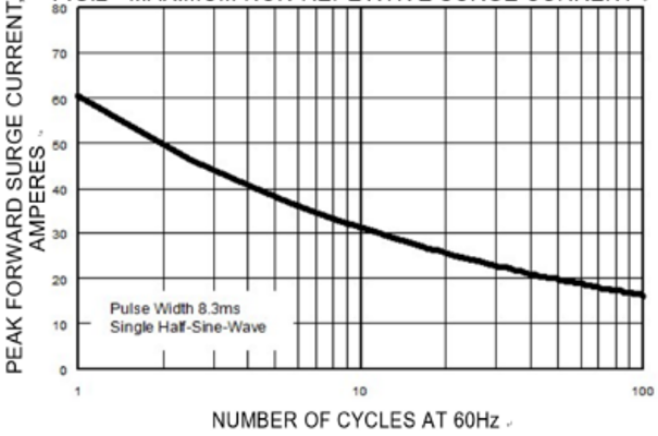


FIG.3 - PULSE WAVEFORM

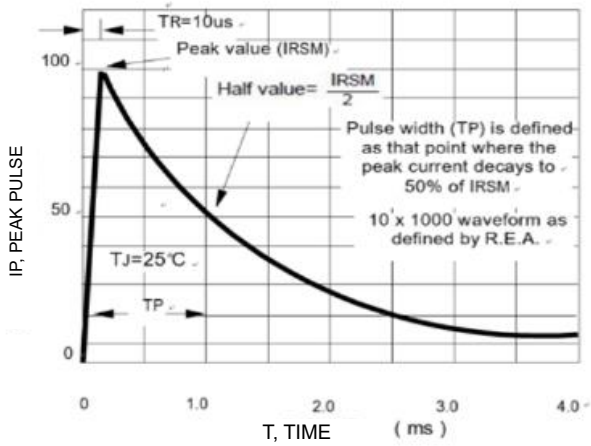


FIG.4 - TYPICAL JUNCTION CAPACITANCE

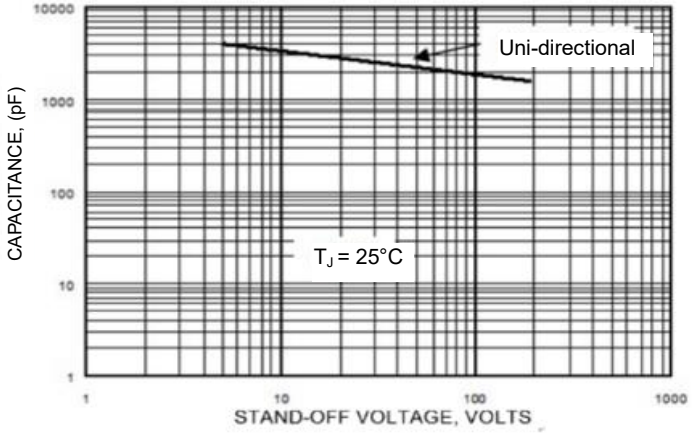


FIG.5 - PULSE RATING CURVE

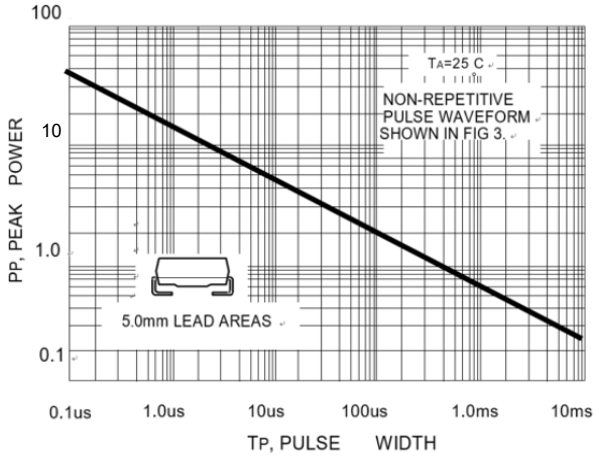
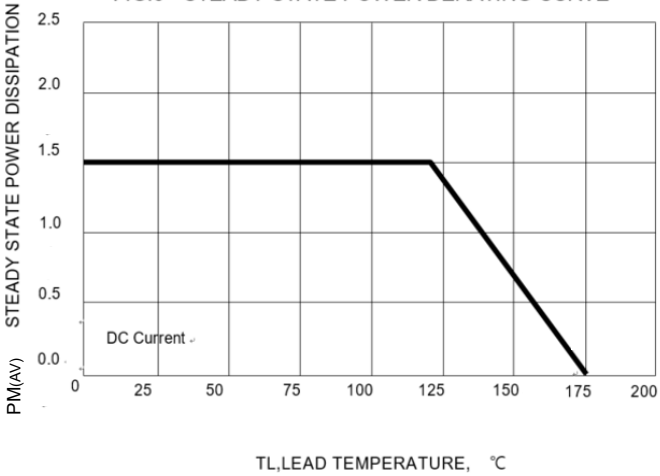


FIG.6 - STEADY STATE POWER DERATING CURVE



Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
ASMA6J SERIES	SMA	5000pcs	Reel

Marking Information :

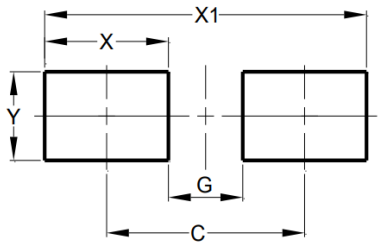
XXXX : Assembly Tracing Code
ZZZ : Product Type Marking Code
Bar Denotes Cathode Side

Packaging Information :

Device	Qty./Reel (Pcs)	Reel Dia. (Inch)	Qty./Box (Pcs)	Qty./Carton (Pcs)
ASMA6JXXA ASMA6JXXCA	5000	13	10k	80k

Suggested Pad Layout :

SMA



Dimensions	Value (in mm)
C	4.00
G	1.50
X	2.50
X1	6.50
Y	1.70

Note: The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application. These dimensions may be modified based on user equipment capability or fabrication criteria. A more robust pattern may be desired for wave soldering and is calculated by adding 0.2 mm to the 'Z' dimension. For further information, please reference document IPC-7351A, Naming Convention for Standard SMT Land Patterns, and for International grid details, please see document IEC, Publication 97.

Note: For high voltage applications, the appropriate industry sector guidelines should be considered with regards to creepage and clearance distances between device Terminals and PCB tracking.

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