APSMCJ SERIES

SURFACE MOUNT UNIDIRECTIONAL AND BIDIRECTIONAL TRANSIENT VOLTAGE SUPPRESSORS

REVERSE VOLTAGE - 6.8 to 82 Volts
POWER DISSIPATION - 1500 Watts

FEATURES

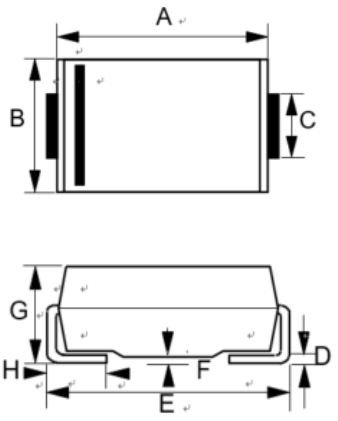
AUTOMOTIVE

- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ns for Uni-direction,less than 5.0ns for Bi-direction,form 0 Volts to BV min
- AEC-Q101 qualified
- PPAP capable
- Automotive grade
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

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, no cathode band denotes bi-directional device
- Moisture Sensitivity: Max Soldering Temperature +260°C for 30 secs as per JEDEC J-STD-020
- Terminals: Finish Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208 e3
- Weight: 0.007 ounces, 0.21 gram (Approximate)

SMC



SMC		
DIM.	MIN.	MAX.
A	6.60	7.11
B	5.59	6.22
C	2.92	3.18
D	0.15	0.31
E	7.75	8.13
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 POWER DISSIPATION AT TA = 25 C, TP = 1ms (Note 4)	P_{PK}	1500	W
Peak Forward Surge Current 8.3ms single half sine-wave @Tj=25℃ (Note 5)	I_{FSM}	200	A
Steady State Power Dissipation with PCB	$P_{M(AV)}$	2.0	W
Maximum Instantaneous forward voltage at 16A (Note 5, 6)	V_F	2.0	V
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. 5 and derated above TA= 25℃ per fig.1.
5. Only for uni-directional units.
6. VF max=2.0V at IF=16 A 300us square wave pulse.

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 (uA)
APSMCJ6.8A	APSMCJ6.8CA	A6V8A	A6V8C	5.8	6.45	7.13	10	10.5	142.9	1000
APSMCJ7.5A	APSMCJ7.5CA	A7V5A	A7V5C	6.4	7.13	7.88	10	11.3	132.7	500
APSMCJ8.2A	APSMCJ8.2CA	A8V2A	A8V2C	7.0	7.79	8.61	10	12.1	124.0	200
APSMCJ9.1A	APSMCJ9.1CA	A9V1A	A9V1C	7.8	8.65	9.56	1.0	13.4	111.9	50
APSMCJ10A	APSMCJ10CA	A10A	A10C	8.6	9.50	10.50	1.0	14.5	103.4	10
APSMCJ11A	APSMCJ11CA	A11A	A11C	9.4	10.5	11.6	1.0	15.6	96.2	5.0
APSMCJ12A	APSMCJ12CA	A12A	A12C	10.2	11.4	12.6	1.0	16.7	89.8	0.5
APSMCJ13A	APSMCJ13CA	A13A	A13C	11.1	12.4	13.7	1.0	18.2	82.4	0.5
APSMCJ15A	APSMCJ15CA	A15A	A15C	12.8	14.3	15.8	1.0	21.2	70.8	0.5
APSMCJ16A	APSMCJ16CA	A16A	A16C	13.6	15.2	16.8	1.0	22.5	66.7	0.5
APSMCJ18A	APSMCJ18CA	A18A	A18C	15.3	17.1	18.9	1.0	25.2	59.5	0.5
APSMCJ20A	APSMCJ20CA	A20A	A20C	17.1	19.0	21.0	1.0	27.7	54.2	0.5
APSMCJ22A	APSMCJ22CA	A22A	A22C	18.8	20.9	23.1	1.0	30.6	49.0	0.5
APSMCJ24A	APSMCJ24CA	A24A	A24C	20.5	22.8	25.2	1.0	33.2	45.2	0.5
APSMCJ27A	APSMCJ27CA	A27A	A27C	23.1	25.7	28.4	1.0	37.5	40.0	0.5
APSMCJ30A	APSMCJ30CA	A30A	A30C	25.6	28.5	31.5	1.0	41.4	36.2	0.5
APSMCJ30A	APSMCJ30CAC	A30A	A30CC	25.6	28.5	31.5	1.0	41.4	36.2	0.5
APSMCJ33A	APSMCJ33CA	A33A	A33C	28.2	31.4	34.7	1.0	45.7	32.8	0.5
APSMCJ36A	APSMCJ36CA	A36A	A36C	30.8	34.2	37.8	1.0	49.9	30.1	0.5
APSMCJ39A	APSMCJ39CA	A39A	A39C	33.3	37.1	41.0	1.0	53.9	27.8	0.5
APSMCJ43A	APSMCJ43CA	A43A	A43C	36.8	40.9	45.2	1.0	59.3	25.3	0.5
APSMCJ47A	APSMCJ47CA	A47A	A47C	40.2	44.7	49.4	1.0	64.8	23.1	0.5
APSMCJ51A	APSMCJ51CA	A51A	A51C	43.6	48.5	53.6	1.0	70.1	21.4	0.5
APSMCJ56A	APSMCJ56CA	A56A	A56C	47.8	53.2	58.8	1.0	77.0	19.5	0.5
APSMCJ62A	APSMCJ62CA	A62A	A62C	53.0	58.9	65.1	1.0	85.0	17.6	0.5
APSMCJ68A	APSMCJ68CA	A68A	A68C	58.1	64.6	71.4	1.0	92.0	16.3	0.5
APSMCJ75A	APSMCJ75CA	A75A	A75C	64.7	71.3	78.8	1.0	103.0	14.6	0.5
APSMCJ82A	APSMCJ82CA	A82A	A82C	70.1	77.9	86.1	1.0	113.0	13.3	0.5

Notes:
Suffix 'A ' denotes 5% tolerance device.
1) Add suffix 'C 'or ' CA ' after part number to specify Bi-directional devices.
2) The IR limit is double for Bi-Directional devices.
3) APSMCJ30A for special customer used.

RATING AND CHARACTERISTIC CURVES
APSMCJ SERIES

FIG.1 - PULSE DERATING CURVE

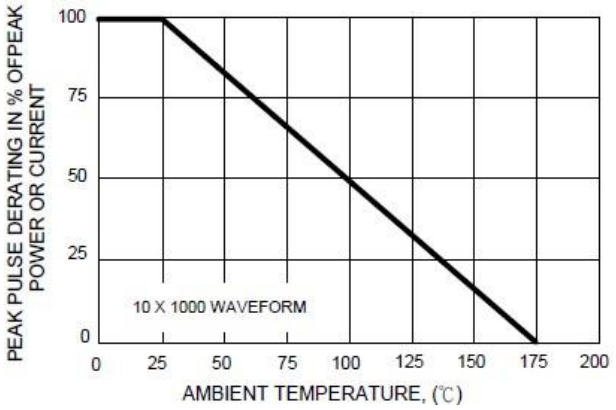


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

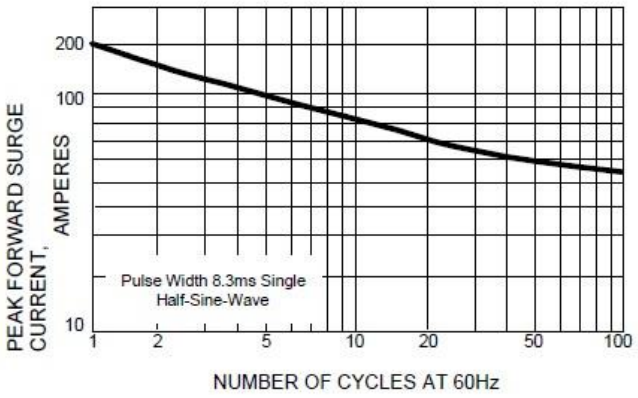


FIG.3 - PULSE WAVEFORM

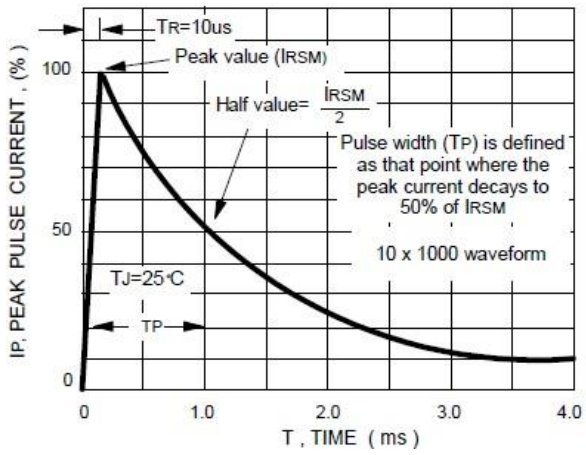


FIG.4 - TYPICAL JUNCTION CAPACITANCE

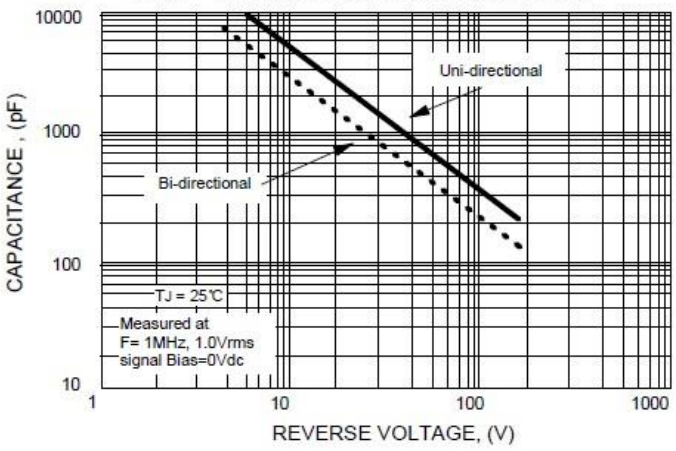


FIG.5 - PULSE RATING CURVE

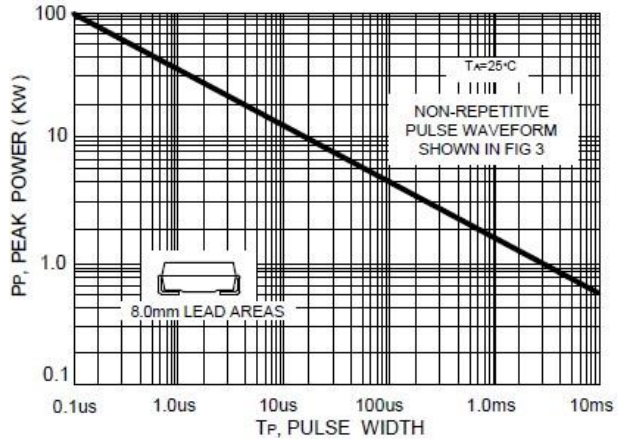
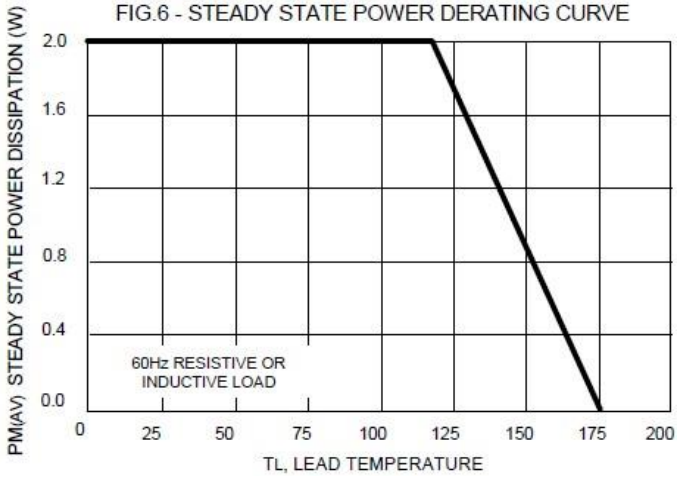


FIG.6 - STEADY STATE POWER DERATING CURVE



Ordering Information :

Part Number	Package	Packing	
		Qty.	Carrier
APSMCJ SERIES	SMC	3000pcs	Reel

Marking Information :

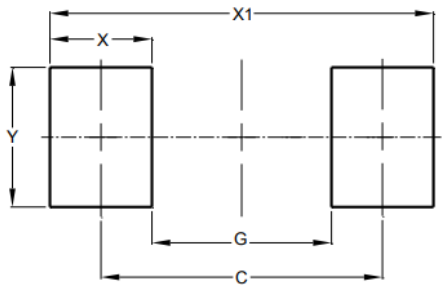
XXXX : Assembly Tracing code
ZZZ : Product Type Marking code
Bar Denotes Cathode Side

Packaging Information :

DEVICE	Q'TY/REEL (PCS)	REEL DIA. (INCH)	Q'TY/BOX (PCS)	Q'TY/CARTON (PCS)
APSMCJXXA APSMCJXXCA	3000	13	6K	36K

Suggested Pad Layout :

SMC



Dimensions	Value (in mm)
C	6.90
G	4.40
X	2.50
X1	9.40
Y	3.30

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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