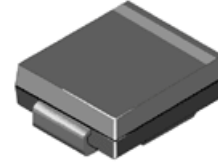


Features

EC76SMCJ5.0 thru 440

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Low profile package with built-in strain relief for surface mounted applications
- Glass passivated junction
- Low incremental surge resistance, excellent clamping capability
- 1500W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%
- Very fast response time
- High temperature soldering guaranteed: 250°C /10 seconds at terminals



DO-214AB(SMC)

Mechanical Data

- Case: JEDEC DO-214AB(SMC J-Bend) molded plastic over passivated junction
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity: For unidirectional types the band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Weight: 0.007oz., 0.21g

Absolute Maximum Ratings

(Ratings at 25°C ambient temperature unless otherwise specified.)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000 us waveform ^(1,2) (see Fig. 1)	PPPM	Minimum 1500	W
Peak pulse current with a 10/1000 us waveform ⁽¹⁾	IPPM	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave uni-directional only ⁽²⁾	IFSM	200	A
Typical thermal resistance, junction to ambient ⁽⁴⁾	R θ JA	75	°C/W
Typical thermal resistance, junction to lead	R θ JL	15	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

- Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above TA=25°C per Fig. 2.
 2. Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal
 3. Mounted on minimum recommended pad layout



Surface Mount Transient Voltage Suppressors

EC76SMCJxx

Peak Pulse Power 1500W

Stand-off Voltage 5.0 to 440V

Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified. VF=3.5V at IF=100A (uni-directional only)

Device type	Device marking code		Breakdown voltage V (BR) (Volts) ⁽¹⁾		Test current at I _T (mA)	Stand-off voltage V _{WM} (Volts)	Maximum reverse leakage at V _{WM} I _D (uA) ⁽³⁾	Maximum peak pulse surge current I _{PPM} (A) ⁽²⁾	Maximum clamping voltage at I _{PPM} V _c (Volts)
	UNI	BI	Min.	Max.					
EC76SMCJ5.0	GDD	BDD	6.40	7.82	10	5.0	1000	156.3	9.6
EC76SMCJ5.0A	GDE	BDE	6.40	7.07	10	5.0	1000	163.0	9.2
EC76SMCJ6.0	GDF	BDF	6.67	8.15	10	6.0	1000	131.6	11.4
EC76SMCJ6.0A	GDG	BDG	6.67	7.37	10	6.0	1000	145.6	10.3
EC76SMCJ6.5	GDH	BDH	7.22	8.82	10	6.5	500	122.0	12.3
EC76SMCJ6.5A	GDK	BDK	7.22	7.98	10	6.5	500	133.9	11.2
EC76SMCJ7.0	GDL	BDL	7.78	9.51	10	7.0	200	112.8	13.3
EC76SMCJ7.0A	GDL	BDM	7.78	8.60	10	7.0	200	125.0	12.0
EC76SMCJ7.5	GDN	BDN	8.33	10.2	1.0	7.5	100	104.9	14.3
EC76SMCJ7.5A	GDP	BDP	8.33	9.21	1.0	7.5	100	116.3	12.9
EC76SMCJ8.0	GDQ	BDQ	8.89	10.9	1.0	8.0	50	100.0	15.0
EC76SMCJ8.0A	GDR	BDR	8.89	9.83	1.0	8.0	50	110.3	13.6
EC76SMCJ8.5	GDS	BDS	9.44	11.5	1.0	8.5	20	94.3	15.9
EC76SMCJ8.5A	GDT	BDT	9.44	10.4	1.0	8.5	20	104.2	14.4
EC76SMCJ9.0	GDU	BDU	10.0	12.2	1.0	9.0	10.0	88.8	16.9
EC76SMCJ9.0A	GDV	BDV	10.0	11.1	1.0	9.0	10.0	97.4	15.4
EC76SMCJ10	GDW	BDW	11.1	13.6	1.0	10	5.0	79.8	18.8
EC76SMCJ10A	GDX	BDX	11.1	12.3	1.0	10	5.0	88.2	17.0
EC76SMCJ11	GDY	BDY	12.2	14.9	1.0	11	5.0	74.6	20.1
EC76SMCJ11A	GDZ	BDZ	12.2	13.5	1.0	11	5.0	82.4	18.2
EC76SMCJ12	GED	BED	13.3	16.3	1.0	12	5.0	68.2	22.0
EC76SMCJ12A	GEE	BEE	13.3	14.7	1.0	12	5.0	75.4	19.9
EC76SMCJ13	GEF	BEF	14.4	17.6	1.0	13	1.0	63.0	23.8
EC76SMCJ13A	GEG	BEG	14.4	15.9	1.0	13	1.0	69.8	21.5
EC76SMCJ14	GEH	BEH	15.6	19.1	1.0	14	1.0	58.1	25.8
EC76SMCJ14A	GEK	BEK	15.6	17.2	1.0	14	1.0	64.7	23.2
EC76SMCJ15	GEL	BEL	16.7	20.4	1.0	15	1.0	55.8	26.9
EC76SMCJ15A	GEM	BEM	16.7	18.5	1.0	15	1.0	61.5	24.4
EC76SMCJ16	GEN	BEN	17.8	21.8	1.0	16	1.0	52.1	28.8
EC76SMCJ16A	GEP	BEP	17.8	19.7	1.0	16	1.0	57.7	26.0
EC76SMCJ17	GEQ	BEQ	18.9	23.1	1.0	17	1.0	49.2	30.5
EC76SMCJ17A	GER	BER	18.9	20.9	1.0	17	1.0	54.3	27.6
EC76SMCJ18	GES	BES	20.0	24.4	1.0	18	1.0	46.6	32.2
EC76SMCJ18A	GET	BET	20.0	22.1	1.0	18	1.0	51.4	29.2
EC76SMCJ20	GEU	BEU	22.2	27.1	1.0	20	1.0	41.9	35.8
EC76SMCJ20A	GEV	BEV	22.2	24.5	1.0	20	1.0	46.3	32.4
EC76SMCJ22	GEW	BEW	24.4	29.8	1.0	22	1.0	38.1	39.4
EC76SMCJ22A	GEX	BEX	24.4	26.9	1.0	22	1.0	42.3	35.5
EC76SMCJ24	GEY	BEY	26.7	32.6	1.0	24	1.0	34.9	43.0
EC76SMCJ24A	GEZ	BEZ	26.7	29.5	1.0	24	1.0	38.6	38.9
EC76SMCJ26	GFD	BFD	28.9	35.3	1.0	26	1.0	32.2	46.6
EC76SMCJ26A	GFE	BFE	28.9	31.9	1.0	26	1.0	35.6	42.1



Surface Mount Transient Voltage Suppressors

EC76SMCJxx

Peak Pulse Power 1500W

Stand-off Voltage 5.0 to 440V

Device type	Device marking code		Breakdown voltage V _(BR) (Volts) ⁽¹⁾		Test current at I _T (mA)	Stand-off voltage V _{WM} (Volts)	Maximum reverse leakage at V _{WM} I _D (µA) ⁽³⁾	Maximum peak pulse surge current I _{PPM} (A) ⁽²⁾	Maximum clamping voltage at I _{PPM} V _C (Volts)
	UNI	BI	Min.	Max.					
EC76SMCJ28	GFF	BFF	31.1	38.0	1.0	28	1.0	30.0	50.0
EC76SMCJ28A	GFG	BFG	31.1	34.4	1.0	28	1.0	33.0	45.4
EC76SMCJ30	GFH	BFH	33.3	40.7	1.0	30	1.0	28.0	53.5
EC76SMCJ33	GFL	BFL	36.7	44.9	1.0	33	1.0	25.4	59.0
EC76SMCJ33A	GFM	BFM	36.7	40.6	1.0	33	1.0	28.1	53.3
EC76SMCJ36	GFN	BFN	40.0	48.9	1.0	36	1.0	23.3	64.3
EC76SMCJ36A	GFP	BFP	40.0	44.2	1.0	36	1.0	25.8	58.1
EC76SMCJ40	BFQ	BFQ	44.4	54.3	1.0	40	1.0	21.0	71.4
EC76SMCJ40A	GFR	BFR	44.4	49.1	1.0	40	1.0	23.3	64.5
EC76SMCJ43	GFS	BFS	47.8	58.4	1.0	43	1.0	19.6	76.7
EC76SMCJ43A	GFT	BFT	47.8	52.8	1.0	43	1.0	21.6	69.4
EC76SMCJ45	GFU	BFU	50.0	61.1	1.0	45	1.0	18.7	80.3
EC76SMCJ45A	GFV	BFV	50.0	55.3	1.0	45	1.0	20.6	72.7
EC76SMCJ48	GFW	BFW	53.3	65.1	1.0	48	1.0	17.5	85.5
EC76SMCJ48A	GFX	BFX	53.3	58.9	1.0	48	1.0	19.4	77.4
EC76SMCJ51	GFY	BFY	56.7	69.3	1.0	51	1.0	16.5	91.1
EC76SMCJ51A	GFZ	BFZ	56.7	62.7	1.0	51	1.0	18.2	82.4
EC76SMCJ54	GGD	BGD	60.0	73.3	1.0	54	1.0	15.6	96.3
EC76SMCJ54A	GGEE	BGE	60.0	66.3	1.0	54	1.0	17.2	87.1
EC76SMCJ58	GGF	BGF	64.4	78.7	1.0	58	1.0	14.6	103
EC76SMCJ58A	GGG	BGG	64.4	71.2	1.0	58	1.0	16.0	93
EC76SMCJ60	GGH	BGH	66.7	81.5	1.0	60	1.0	14.0	107
EC76SMCJ60A	GGK	BGK	66.7	73.7	1.0	60	1.0	15.5	96
EC76SMCJ64	GGL	BGL	71.1	86.9	1.0	64	1.0	13.2	114
EC76SMCJ64A	GGM	BGM	71.1	78.6	1.0	64	1.0	14.6	103
EC76SMCJ70	GGN	BGN	77.8	95.1	1.0	70	1.0	12	125
EC76SMCJ70A	GGP	BGP	77.8	86.0	1.0	70	1.0	13.3	113
EC76SMCJ75	GGQ	BGQ	83.3	102	1.0	75	1.0	11.2	134
EC76SMCJ75A	GGR	BGR	83.3	92.1	1.0	75	1.0	12.4	121
EC76SMCJ78	GGS	BGS	86.7	106	1.0	78	1.0	10.8	139
EC76SMCJ78A	GGT	BGT	86.7	95.8	1.0	78	1.0	11.9	126
EC76SMCJ85	GGU	BGU	94.4	115	1.0	85	1.0	9.9	151
EC76SMCJ85A	GGV	BGV	94.4	104	1.0	85	1.0	10.9	137
EC76SMCJ90	GGW	BGW	100	122	1.0	90	1.0	9.4	160
EC76SMCJ90A	GGX	BGX	100	111	1.0	90	1.0	10.3	146
EC76SMCJ100	GGY	BGY	111	136	1.0	100	1.0	8.4	179
EC76SMCJ100A	GGZ	BGZ	111	123	1.0	100	1.0	9.3	162
EC76SMCJ110	GHD	BHD	122	149	1.0	110	1.0	7.7	196
EC76SMCJ110A	GHE	BHE	122	135	1.0	110	1.0	8.5	177
EC76SMCJ120	GHF	BHF	133	163	1.0	120	1.0	7.0	214
EC76SMCJ120A	GHG	BHG	133	147	1.0	120	1.0	7.8	193
EC76SMCJ130	GHH	BHH	144	176	1.0	130	1.0	6.5	231
EC76SMCJ130A	GHK	BHK	144	159	1.0	130	1.0	7.2	209
EC76SMCJ150	GHL	BHL	167	204	1.0	150	1.0	5.6	268
EC76SMCJ150A	GHM	BHM	167	185	1.0	150	1.0	6.2	243
EC76SMCJ160	GHN	BHN	178	218	1.0	160	1.0	5.2	287
EC76SMCJ160A	GHP	BHP	178	197	1.0	160	1.0	5.8	259



Surface Mount Transient Voltage Suppressors

EC76SMCJxx

Peak Pulse Power 1500W

Stand-off Voltage 5.0 to 440V

Device type	Device marking code		Breakdown voltage $V_{(BR)}$ (Volts) ⁽¹⁾		Test current at I_T (mA)	Stand-off voltage V_{WM} (Volts)	Maximum reverse leakage at V_{WM} I_D (uA) ⁽³⁾	Maximum peak pulse surge current I_{PPM} (A) ⁽²⁾	Maximum clamping voltage at I_{PPM} V_C (Volts)
	UNI	BI	Min.	Max.					
EC76SMCJ170	GHQ	BHQ	189	231	1.0	170	1.0	4.9	304
EC76SMCJ170A	GHR	BHR	189	209	1.0	170	1.0	5.5	275
EC76SMCJ180A	GHT	BHT	201	222	1.0	180	1.0	5.0	292
EC76SMCJ200A	GHV	BHV	224	247	1.0	200	1.0	4.6	324
EC76SMCJ220A	GHX	BHX	246	272	1.0	220	1.0	4.2	356
EC76SMCJ250A	GHZ	BHZ	279	309	1.0	250	1.0	3.7	405
EC76SMCJ300A	GJE	BJE	335	371	1.0	300	1.0	3.1	486
EC76SMCJ350A	GJG	BJG	391	432	1.0	350	1.0	2.6	567
EC76SMCJ400A	GJK	BJK	447	494	1.0	400	1.0	2.3	648
EC76SMCJ440A	GJM	BJM	492	543	1.0	440	1.0	2.1	713

- Notes:
1. $V_{(BR)}$ measured after I_T applied for 300us square wave pulse or equivalent
 2. Surge current waveform per Fig. 3 and derate per Fig. 2
 3. For bi-directional types having V_{WM} of 10 Volts and less, the I_D limit is doubled
 4. All terms and symbols are consistent with ANSI/IEEE C62.35
 5. For parts without A, the V_{BR} is +10%

Typical Performance Curves

Fig.1 Peak Pulse Power Rating Curve

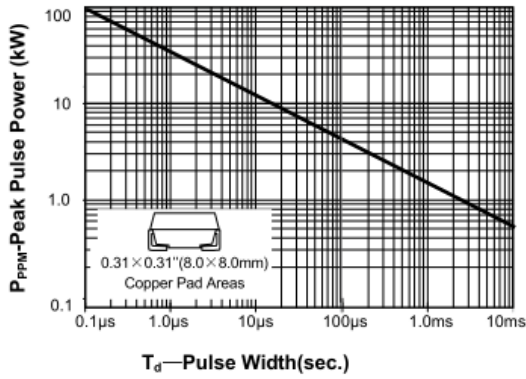


Fig.2 Pulse Derating Curve

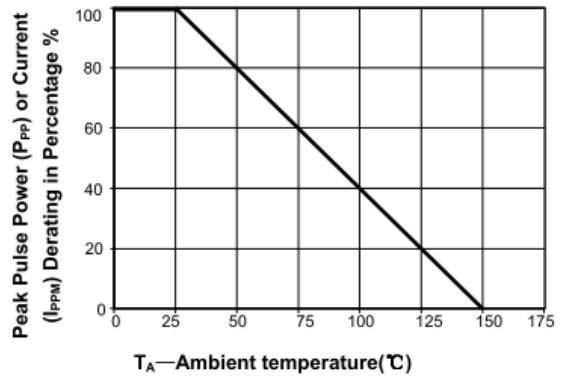


Fig.3 Pulse Waveform

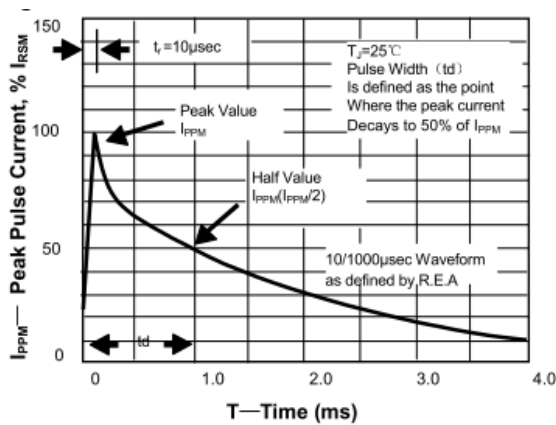


Fig.4 Typical Junction Capacitance Uni-Directional

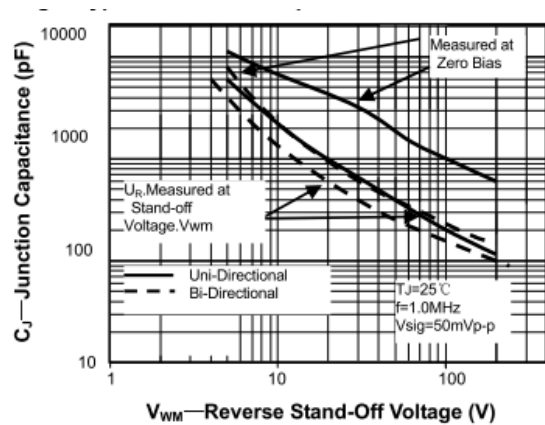


Fig.5 Typical Transient Thermal Impedance

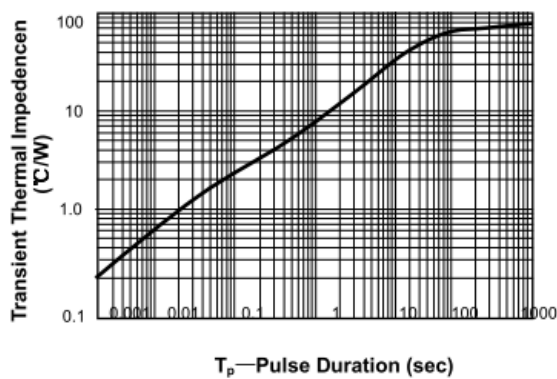
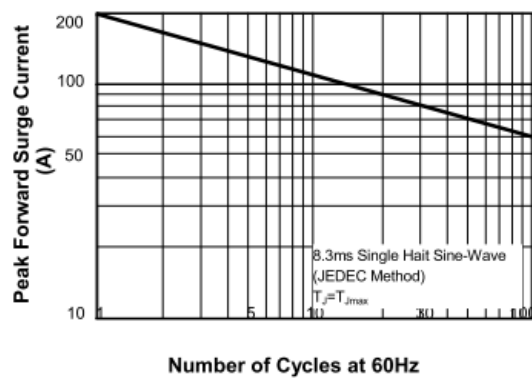


Fig.6 Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only



Order Information

EC76SMCJ xx C A

Stand off Voltage

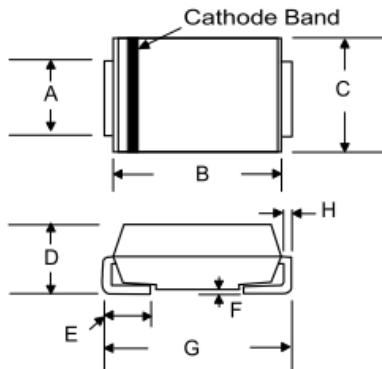
5% Voltage Tolerance

Bi-directional

Device	Package	Net Weight	Carrier	Quantity	HSF Status
EC76SMCJXX	DO-214AB(SMC)	0.21g	Tape & Reel	3000pcs/reel	RoHS compliant

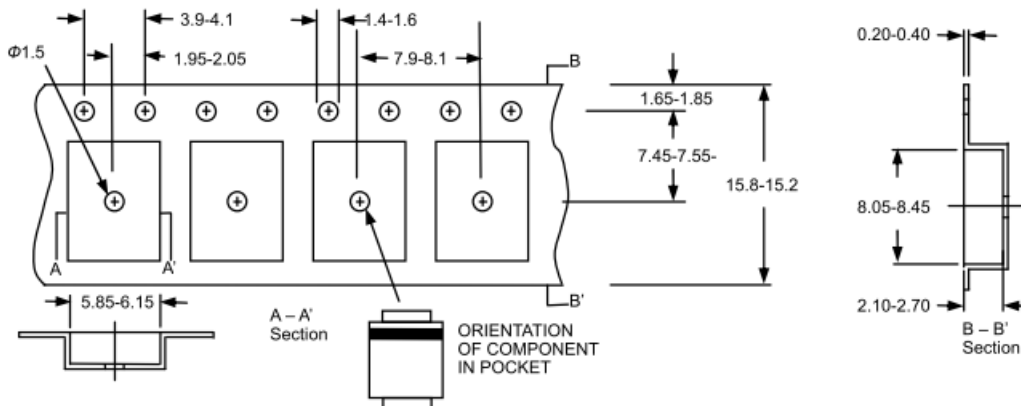
Product Dimension

DO-214AB (SMC)

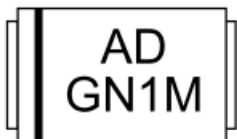


Dimensions	Inches		Milimeters	
	Min	Max	Min	Max
A	0.114	0.126	2.90	3.20
B	0.260	0.280	6.60	7.11
C	0.220	0.246	5.59	6.22
D	0.079	0.109	2.06	2.62
E	0.030	0.060	0.76	1.52
F	0.004	0.008	0.10	0.20
G	0.305	0.320	7.75	8.13
H	0.006	0.012	0.12	0.31

Package Information



Marking



AD: Date
GN1M: Product No.