Microsemi Corp.
The diode experts

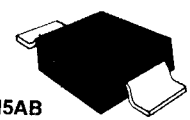
SANTA ANA, CA

SCOTTSDALE, AZ
For more information call:
(602) 941-6300

SMC* SERIES
5.0 thru 170.0 Volts
1500 WATTS

UNIDIRECTIONAL AND BIDIRECTIONAL SURFACE MOUNT

DO-214AB



DO-215AB

See Page 3-45 for Package Dimensions.

FEATURES

- UNIDIRECTIONAL AND BIDIRECTIONAL
- 1500 WATTS PEAK POWER
- VOLTAGE RANGE: 5.0 TO 170 VOLTS
- LOW INDUCTANCE
- LOW PROFILE PACKAGE FOR SURFACE MOUNTING

This series of TAZ (transient absorption zeners), available in small outline surface mountable packages, is designed to optimize board space. Packaged for use with surface mount technology automated assembly equipment, these parts can be placed on printed circuit boards and ceramic substrates to protect sensitive components from transient voltage damage.

The SMC series, rated for 1500 watts during a one millisecond pulse, can be used to protect sensitive circuits against transients induced by lightning and inductive load switching. With a response time of 1 x 10^{-12} seconds (theoretical) they are also effective against electrostatic discharge and NEMP.

MAXIMUM RATINGS

1500 watts of Peak Power dissipation (10 x 1000μs)
$t_{clamping}$ (0 volts to $V_{(BR)}$ min): less than 1 x 10^{-12} seconds (theoretical)
Forward surge rating: 200 Amps, 1/120 sec @ 25°C (Excluding Bidirectional)
Operating and Storage Temperature: -65° to +175°C

NOTE: TAZ is normally selected according to the reverse "Stand Off Voltage" (V_{RM}) which should be equal to or greater than the DC or continuous peak operating voltage level.

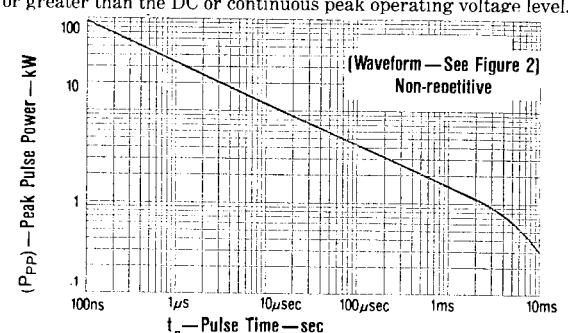
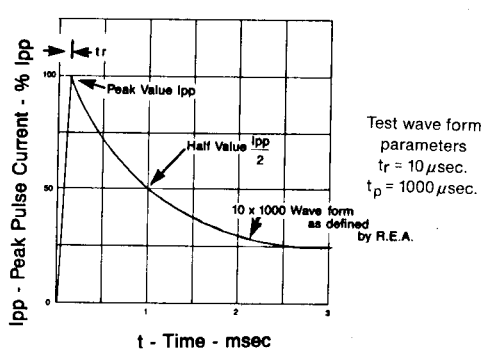


FIGURE 1 PEAK PULSE POWER VS PULSE TIME



Test wave form parameters
t_r = 10μsec.
t_p = 1000μsec.

FIGURE 2 PULSE WAVEFORM

* **NOTE:** All SMC series are equivalent to prior SMM package identifications.

MECHANICAL CHARACTERISTICS

CASE: Molded, surface mountable.

TERMINALS: Gull-wing or C-bend (modified J-bend) leads, tin lead plated.

POLARITY: Cathode indicated by band. No marking on bidirectional devices.

PACKAGING: 16mm tape. (See EIA Std. RS-481.)

THERMAL RESISTANCE: 20°C/W (typical) junction to lead (tab) at mounting plane.

SMC 5.0 thru 170 Volts

ELECTRICAL CHARACTERISTICS @ 25°C

MICROSEMI CORP. PART NUMBER		REVERSE STAND-OFF VOLTAGE (See Note)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS			MAXIMUM CLAMPING VOLTAGE	PEAK PULSE CURRENT (See Fig. 2)	MAXIMUM REVERSE LEAKAGE @ V_{WM}
GULL-WING LEAD	MODIFIED "J" BEND LEAD	V_{WM} VOLTS	MIN.	MAX.	I_T mA	@ I_{PP} VOLTS	I_{PP} AMPS	I_D μA
SMCG5.0	SMCJ5.0	5.0	6.40	7.30	10	9.6	156.2	1000
SMCG5.0A	SMCJ5.0A	5.0	6.40	7.00	10	9.2	163.0	1000
SMCG6.0	SMCJ6.0	6.0	6.67	8.15	10	11.4	131.6	1000
SMCG6.0A	SMCJ6.0A	6.0	6.67	7.37	10	10.3	145.6	1000
SMCG6.5	SMCJ6.5	6.5	7.22	8.82	10	12.3	122.0	500
SMCG6.5A	SMCJ6.5A	6.5	7.22	7.98	10	11.2	133.9	500
SMCG7.0	SMCJ7.0	7.0	7.78	9.51	10	13.3	112.8	200
SMCG7.0A	SMCJ7.0A	7.0	7.78	8.60	10	12.0	125.0	200
SMCG7.5	SMCJ7.5	7.5	8.33	10.2	1	14.3	104.9	100
SMCG7.5A	SMCJ7.5A	7.5	8.33	9.21	1	12.9	116.3	100
SMCG8.0	SMCJ8.0	8.0	8.89	10.9	1	15.0	100.0	50
SMCG8.0A	SMCJ8.0A	8.0	8.89	9.83	1	13.6	110.3	50
SMCG8.5	SMCJ8.5	8.5	9.44	11.5	1	15.9	94.3	25
SMCG8.5A	SMCJ8.5A	8.5	9.44	10.4	1	14.4	104.2	25
SMCG9.0	SMCJ9.0	9.0	10.0	12.2	1	16.9	88.7	10
SMCG9.0A	SMCJ9.0A	9.0	10.0	11.1	1	15.4	97.4	10
SMCG10	SMCJ10	10	11.1	13.6	1	18.8	79.8	5
SMCG10A	SMCJ10A	10	11.1	12.3	1	17.0	88.2	5
SMCG11	SMCJ11	11	12.2	14.9	1	20.1	74.6	5
SMCG11A	SMCJ11A	11	12.2	13.5	1	18.2	82.4	5
SMCG12	SMCJ12	12	13.3	16.3	1	22.0	68.2	5
SMCG12A	SMCJ12A	12	13.3	14.7	1	19.9	75.3	5
SMCG13	SMCJ13	13	14.4	17.6	1	23.8	63.0	5
SMCG13A	SMCJ13A	13	14.4	15.9	1	21.5	69.7	5
SMCG14	SMCJ14	14	15.6	19.1	1	25.8	58.1	5
SMCG14A	SMCJ14A	14	15.6	17.2	1	23.2	64.7	5
SMCG15	SMCJ15	15	16.7	20.4	1	26.9	55.8	5
SMCG15A	SMCJ15A	15	16.7	18.5	1	24.4	61.5	5
SMCG16	SMCJ16	16	17.8	21.8	1	28.8	52.1	5
SMCG16A	SMCJ16A	16	17.8	19.7	1	26.0	57.7	5
SMCG17	SMCJ17	17	18.9	23.1	1	30.5	49.2	5
SMCG17A	SMCJ17A	17	18.9	20.9	1	27.6	53.3	5
SMCG18	SMCJ18	18	20.0	24.4	1	32.2	46.6	5
SMCG18A	SMCJ18A	18	20.0	22.1	1	29.2	51.4	5
SMCG20	SMCJ20	20	22.2	27.1	1	35.8	41.9	5
SMCG20A	SMCJ20A	20	22.2	24.5	1	32.4	46.3	5
SMCG22	SMCJ22	22	24.4	29.8	1	39.4	38.1	5
SMCG22A	SMCJ22A	22	24.4	26.9	1	35.5	42.2	5
SMCG24	SMCJ24	24	26.7	32.6	1	43.0	34.9	5
SMCG24A	SMCJ24A	24	26.7	29.5	1	38.9	38.6	5
SMCG26	SMCJ26	26	28.9	35.3	1	46.6	32.2	5
SMCG26A	SMCJ26A	26	28.9	31.9	1	42.1	35.6	5
SMCG28	SMCJ28	28	31.1	38.0	1	50.0	30.0	5
SMCG28A	SMCJ28A	28	31.1	34.4	1	45.4	33.0	5
SMCG30	SMCJ30	30	33.3	40.7	1	53.5	28.0	5
SMCG30A	SMCJ30A	30	33.3	36.8	1	48.4	31.0	5
SMCG33	SMCJ33	33	36.7	44.9	1	59.0	25.2	5
SMCG33A	SMCJ33A	33	36.7	40.6	1	53.3	28.1	5
SMCG36	SMCJ36	36	40.0	48.9	1	64.3	23.3	5
SMCG36A	SMCJ36A	36	40.0	44.2	1	58.1	25.8	5
SMCG40	SMCJ40	40	44.4	54.3	1	71.4	21.0	5
SMCG40A	SMCJ40A	40	44.4	49.1	1	64.5	23.2	5
SMCG43	SMCJ43	43	47.8	58.4	1	76.7	19.6	5
SMCG43A	SMCJ43A	43	47.8	52.8	1	69.4	21.6	5
SMCG45	SMCJ45	45	50.0	61.1	1	80.3	18.7	5
SMCG45A	SMCJ45A	45	50.0	55.3	1	72.7	20.6	5
SMCG48	SMCJ48	48	53.3	65.1	1	85.5	17.5	5
SMCG48A	SMCJ48A	48	53.3	58.9	1	77.4	19.4	5
SMCG51	SMCJ51	51	56.7	69.3	1	91.1	18.5	5
SMCG51A	SMCJ51A	51	56.7	62.7	1	82.4	18.2	5
SMCG54	SMCJ54	54	60.0	73.3	1	96.3	15.6	5
SMCG54A	SMCJ54A	54	60.0	66.3	1	87.1	17.2	5
SMCG58	SMCJ58	58	64.4	78.7	1	103.0	14.6	5
SMCG58A	SMCJ58A	58	64.4	71.2	1	93.6	16.0	5
SMCG60	SMCJ60	60	66.7	81.5	1	107.0	14.0	5
SMCG60A	SMCJ60A	60	66.7	73.7	1	96.8	15.5	5
SMCG64	SMCJ64	64	71.1	86.9	1	114.0	13.2	5
SMCG64A	SMCJ64A	64	71.1	78.6	1	103.0	14.6	5

SMC 5.0 thru 170 Volts

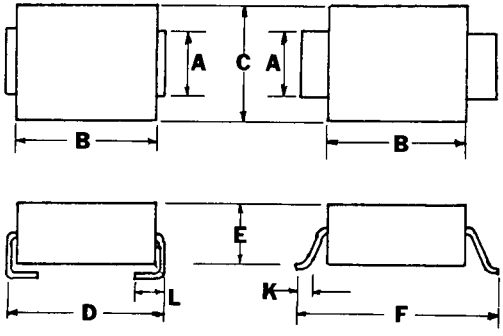
ELECTRICAL CHARACTERISTICS @ 25°C

MICROSEMI CORP. PART NUMBER		REVERSE STAND-OFF VOLTAGE (See Note)	BREAKDOWN VOLTAGE $V_{(BR)}$ @ I_T VOLTS			MAXIMUM CLAMPING VOLTAGE @ I_{PP}	PEAK PULSE CURRENT (See Fig. 2)	MAXIMUM REVERSE LEAKAGE @ V_{WM}
GULL-WING LEAD	MODIFIED "J" BEND LEAD	V_{WM} VOLTS	MIN.	MAX.	I_T mA	VOLTS	I_{PP} AMPS	I_D μA
SMCG70	SMCJ70	70	77.8	95.1	1	125	12.0	5
SMCG70A	SMCJ70A	70	77.8	86.0	1	113	13.3	5
SMCG75	SMCJ75	75	83.3	102.0	1	134	11.2	5
SMCG75A	SMCJ75A	75	83.3	92.1	1	121	12.4	5
SMCG78	SMCJ78	78	86.7	106.0	1	139	10.8	5
SMCG78A	SMCJ78A	78	86.7	95.8	1	126	11.4	5
SMCG85	SMCJ85	85	94.4	115.0	1	151	9.9	5
SMCG85A	SMCJ85A	85	94.4	104.0	1	137	10.4	5
SMCG90	SMCJ90	90	100	122	1	160	9.4	5
SMCG90A	SMCJ90A	90	100	111	1	146	10.3	5
SMCG100	SMCJ100	100	111	136	1	179	8.4	5
SMCG100A	SMCJ100A	100	111	123	1	162	9.3	5
SMCG110	SMCJ110	110	122	149	1	196	7.7	5
SMCG110A	SMCJ110A	110	122	135	1	177	8.4	5
SMCG120	SMCJ120	120	133	163	1	214	7.0	5
SMCG120A	SMCJ120A	120	133	147	1	193	7.8	5
SMCG130	SMCJ130	130	144	176	1	231	6.5	5
SMCG130A	SMCJ130A	130	144	159	1	209	7.2	5
SMCG150	SMCJ150	150	167	204	1	268	5.6	5
SMCG150A	SMCJ150A	150	167	185	1	243	6.2	5
SMCG160	SMCJ160	160	178	218	1	287	5.2	5
SMCG160A	SMCJ160A	160	178	197	1	259	5.8	5
SMCG170	SMCJ170	170	189	231	1	304	4.9	5
SMCG170A	SMCJ170A	170	189	209	1	275	5.5	5

For Bidirectional indicate a C or CA suffix after the part number. (i.e.: SMCG170CA or SMCJ170C)

Microsemi Corp.'s SMC Series (1500W) surface mountable packages are designed specifically for transient voltage suppression. The wide leads assure a large surface contact for good heat dissipation, and a low resistance path for surge current flow to ground. These high speed transient voltage suppressors can be used to effectively protect sensitive components such as integrated circuits and MOS devices.

PACKAGE DIMENSIONS



DO-214AB DO-215AB

DIMENSIONS IN INCHES

	A	B	C	D	E	F	K	L
MIN.	.115	.260	.220	.305	.075	.380	.025	.030
MAX.	.121	.280	.245	.320	.095	.400	.040	.060
DIMENSIONS IN MILLIMETERS								
MIN.	2.92	6.60	5.59	7.75	1.90	9.65	0.635	0.760
MAX.	3.07	7.11	6.22	8.13	2.41	10.16	1.016	1.520

Typical Standoff Height: 0.004"-0.008" (0.1mm-0.2mm)

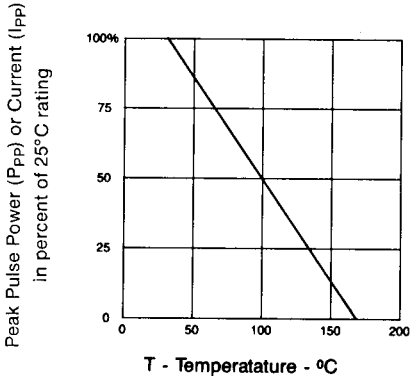


FIGURE 3 DERATING CURVE

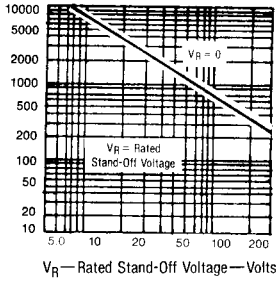


FIGURE 4
TYPICAL CAPACITANCE VS STAND-OFF VOLTAGE