



**THE DATASHEET OF
3.0SMCJ20A T/R**



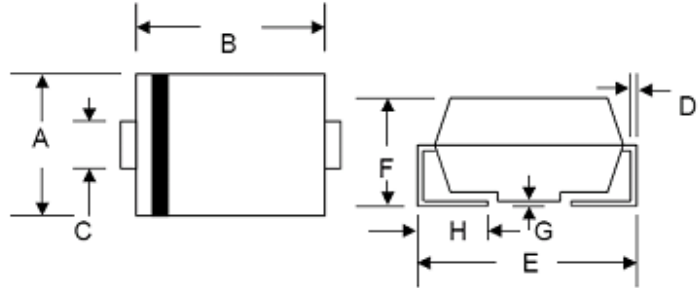


Technical Data

Data Sheet N0001, Rev. A

Features

- Glass Passivated Die Construction
- 3000W Peak Pulse Power Dissipation
- 5.0V – 170V Standoff Voltage
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Case Material has UL Flammability Classification Rating 94V-O
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



SMC/DO-214AB				
Dim	Min	Max	Min	Max
A	5.59	6.22	0.220	0.245
B	6.60	7.11	0.260	0.280
C	2.75	3.25	0.108	0.128
D	0.152	0.305	0.006	0.012
E	7.75	8.13	0.305	0.320
F	2.00	2.62	0.079	0.103
G	0.051	0.203	0.002	0.008
H	0.76	1.27	0.030	0.05
	In mm		In inch	

"C" Suffix Designates Bi-directional Devices
"A" Suffix Designates 5% Tolerance Devices
No Suffix Designates 10% Tolerance Devices

Mechanical Data

- Case: JEDEC DO-214AB Low Profile Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking:
Unidirectional – Device Code and Cathode Band
Bidirectional – Device Code Only
- Weight: 0.21 grams (approx.)

Ordering Information

Device	Package	Shipping
3.0SMCJ SERIES	SMC (Pb-Free)	3000pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

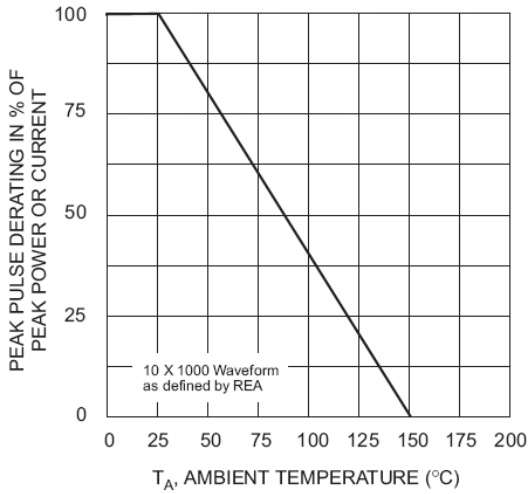
Maximum Ratings and Electrical Characteristics @ $T_A=25^{\circ}\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation 10/1000 μS Waveform (Note 1, 2) Figure 1	PPPM	3000	W
Peak Pulse Current on 10/1000 μS Waveform (Note 1) Figure 3	I _{PPM}	See Table 1	A
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 2, 3)	I _{FSM}	300	A
Operating and Storage Temperature Range	T _j , T _{STG}	-55 to +150	$^{\circ}\text{C}$

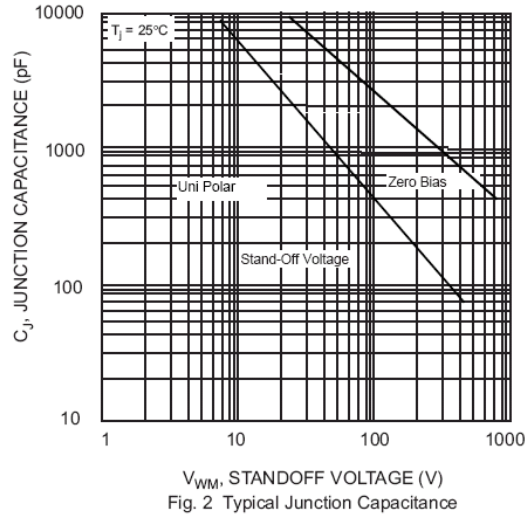
Note: 1. Non-repetitive current pulse, per Figure 3 and derated above $T_A = 25^{\circ}\text{C}$ per Figure 2

2. Mounted on 8.0mm² copper pads to each terminal

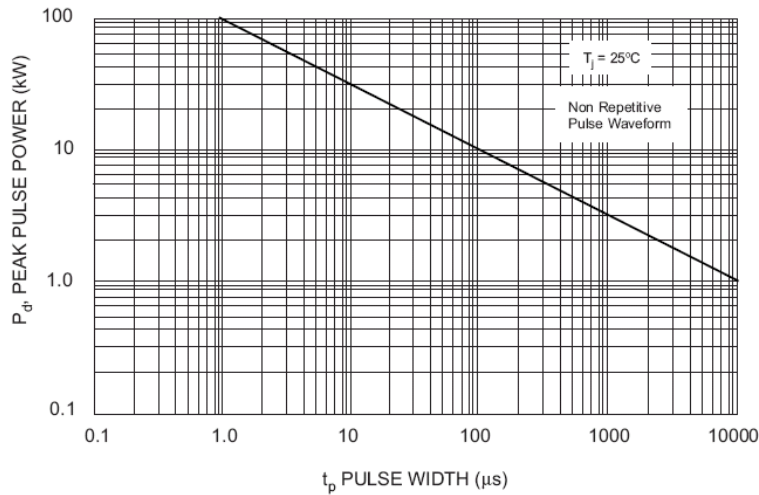
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum



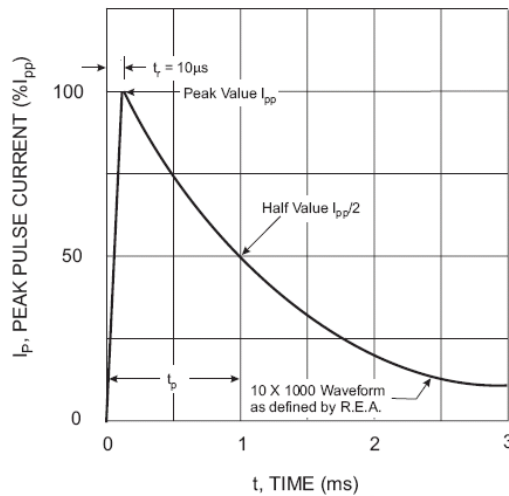
T_A , AMBIENT TEMPERATURE (°C)
Fig. 1 Pulse Derating Curve



V_{WM} , STANDOFF VOLTAGE (V)
Fig. 2 Typical Junction Capacitance



t_p , PULSE WIDTH (μs)
Fig. 3 Pulse Rating Curve



t , TIME (ms)
Fig. 4 Pulse Waveform



Technical Data
Data Sheet N0001, Rev. A

Green Products

UNI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS

UNI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @1T	BREAKDOWN VOLTAGE VBR (V) MAX. @1T	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMCJ5.0	HDD	5	6.4	7.82	10	9.6	312.5	1000
3.0SMCJ5.0A	HDE	5	6.4	7.07	10	9.2	326	1000
3.0SMCJ6.0	HDF	6	6.67	8.15	10	11.4	263.2	1000
3.0SMCJ6.0A	HDF	6	6.67	7.37	10	10.3	291.3	1000
3.0SMCJ6.5	HDH	6.5	7.22	8.82	10	12.3	243.9	500
3.0SMCJ6.5A	HDK	6.5	7.22	7.98	10	11.2	267.9	500
3.0SMCJ7.0	HDL	7	7.78	9.51	10	13.3	225.6	200
3.0SMCJ7.0A	HDM	7	7.78	8.60	10	12	250	200
3.0SMCJ7.5	HDN	7.5	8.33	10.18	1	14.3	209.8	100
3.0SMCJ7.5A	HDP	7.5	8.33	9.21	1	12.9	232.6	100
3.0SMCJ8.0	HDQ	8	8.99	10.99	1	15	220	50
3.0SMCJ8.0A	HDR	8	8.99	9.94	1	13.6	220.6	50
3.0SMCJ8.5	HDS	8.5	9.44	11.54	1	15.9	188.8	25
3.0SMCJ8.5A	HDT	8.5	9.44	10.43	1	14.4	208.4	25
3.0SMCJ9.0	HDU	9	10	12.22	1	16.9	177.4	10
3.0SMCJ9.0A	HDV	9	10	11.05	1	15.4	194.8	10
3.0SMCJ10	HDW	10	11.1	13.57	1	18.8	159.6	5
3.0SMCJ10A	HDX	10	11.1	12.27	1	17	176.4	5
3.0SMCJ11	HDY	11	12.2	14.91	1	20.1	149.2	5
3.0SMCJ11A	HDZ	11	12.2	13.48	1	18.2	184.8	5
3.0SMCJ12	HED	12	13.3	16.26	1	22	136.4	5
3.0SMCJ12A	HEE	12	13.3	14.70	1	19.9	150.6	5
3.0SMCJ13	HEF	13	14.4	17.60	1	23.8	126	5
3.0SMCJ13A	HEG	13	14.4	15.92	1	21.5	139.4	5
3.0SMCJ14	HEH	14	15.6	19.07	1	25.8	116.2	5
3.0SMCJ14A	HEK	14	15.6	17.24	1	23.2	129.4	5
3.0SMCJ15	HEL	15	16.7	20.41	1	26.9	111.6	5
3.0SMCJ15A	HEM	15	16.7	18.46	1	24.4	123	5
3.0SMCJ16	HEN	16	17.8	21.76	1	28.8	104.2	5
3.0SMCJ16A	HEP	16	17.8	19.67	1	26	115.4	5
3.0SMCJ17	HEQ	17	18.9	23.10	1	30.5	98.4	5
3.0SMCJ17A	HER	17	18.9	20.89	1	27.6	106.6	5
3.0SMCJ18	HES	18	20	24.44	1	32.2	93.2	5
3.0SMCJ18A	HET	18	20	22.11	1	29.2	102.8	5
3.0SMCJ20	HEU	20	22.2	27.13	1	35.8	83.8	5
3.0SMCJ20A	HEV	20	22.2	24.54	1	32.4	92.6	5
3.0SMCJ22	HEW	22	24.4	29.82	1	39.4	76.2	5
3.0SMCJ22A	HEX	22	24.4	26.97	1	35.5	84.4	5
3.0SMCJ24	HEY	24	26.7	32.63	1	43	69.8	5
3.0SMCJ24A	HEZ	24	26.7	29.51	1	38.9	77.2	5
3.0SMCJ26	HFD	26	28.9	35.32	1	46.6	64.4	5
3.0SMCJ26A	HFE	26	28.9	31.94	1	42.1	71.2	5
3.0SMCJ28	HFF	28	31.1	38.01	1	50	60	5
3.0SMCJ28A	HFG	28	31.1	34.37	1	45.4	66	5
3.0SMCJ30	HFH	30	33.3	40.70	1	53.5	56	5
3.0SMCJ30A	HFK	30	33.3	36.81	1	48.4	62	5
3.0SMCJ33	HFL	33	36.7	44.86	1	59	50.4	5
3.0SMCJ33A	HFM	33	36.7	40.56	1	53.3	56.2	5
3.0SMCJ36	HFN	36	40	48.89	1	64.3	46.6	5
3.0SMCJ36A	HFP	36	40	44.21	1	58.1	51.6	5
3.0SMCJ40	HFQ	40	44.4	54.27	1	71.4	42	5
3.0SMCJ40A	HFR	40	44.4	49.07	1	64.5	46.4	5
3.0SMCJ43	HFS	43	47.8	58.42	1	76.6	39.2	5
3.0SMCJ43A	HFT	43	47.8	52.83	1	69.4	43.2	5
3.0SMCJ45	HFU	45	50	61.11	1	80.3	37.4	5
3.0SMCJ45A	HFV	45	50	55.26	1	72.7	41.2	5
3.0SMCJ48	HFW	48	53.3	65.14	1	85.5	35	5
3.0SMCJ48A	HFX	48	53.3	58.91	1	77.4	38.8	5
3.0SMCJ51	HFY	51	56.7	69.30	1	91.1	37	5
3.0SMCJ51A	HFZ	51	56.7	62.67	1	82.4	36.4	5
3.0SMCJ54	HGD	54	60	73.33	1	96.3	31.2	5
3.0SMCJ54A	HGE	54	60	66.32	1	87.1	34.4	5
3.0SMCJ58	HGF	58	64.4	78.71	1	103	29.2	5
3.0SMCJ58A	HGG	58	64.4	71.18	1	93.6	32	5
3.0SMCJ60	HGH	60	66.7	81.52	1	107	28	5
3.0SMCJ60A	HGK	60	66.7	73.72	1	96.8	31	5
3.0SMCJ64	HGL	64	71.1	86.90	1	114	26.4	5
3.0SMCJ64A	HGM	64	71.1	78.58	1	103	29.2	5
3.0SMCJ70	HGN	70	77.8	95.09	1	125	24	5
3.0SMCJ70A	HGP	70	77.8	85.99	1	113	26.6	5
3.0SMCJ75	HGQ	75	83.3	101.81	1	134	22.4	5
3.0SMCJ75A	HGR	75	83.3	92.07	1	121	24.8	5
3.0SMCJ78	HGS	78	86.7	105.97	1	139	21.6	5
3.0SMCJ78A	HGT	78	86.7	95.83	1	126	22.8	5
3.0SMCJ85	HGU	85	94.4	115.38	1	151	19.8	5
3.0SMCJ85A	HGV	85	94.4	104.34	1	137	20.8	5
3.0SMCJ90	HGW	90	100	122.22	1	160	18.8	5
3.0SMCJ90A	HGX	90	100	110.53	1	146	20.6	5
3.0SMCJ100	HGY	100	111	135.67	1	179	16.6	5
3.0SMCJ100A	HGZ	100	111	122.68	1	162	18.6	5
3.0SMCJ110	HHD	110	122	149.11	1	196	15.4	5
3.0SMCJ110A	HHE	110	122	134.84	1	177	16.8	5
3.0SMCJ120	HHF	120	133	162.56	1	214	14	5
3.0SMCJ120A	HHG	120	133	147.00	1	193	15.6	5
3.0SMCJ130	HHH	130	144	176.00	1	231	13	5
3.0SMCJ130A	HHK	130	144	159.16	1	209	14.4	5
3.0SMCJ150	HHL	150	167	204.11	1	269	11.2	5
3.0SMCJ150A	HHM	150	167	184.58	1	243	12.4	5
3.0SMCJ160	HHN	160	178	217.56	1	287	10.4	5
3.0SMCJ160A	HHP	160	178	196.74	1	259	11.6	5
3.0SMCJ170	HHQ	170	189	231.00	1	304	9.8	5
3.0SMCJ170A	HHR	170	189	208.89	1	275	11	5



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Green Products

BI-DIRECTIONAL 3000 WATT SURFACE MOUNT TVS

BI-DIRECTIONAL PART NO.	DEVICE MARKING CODE	REVERSE STAND-OFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @IT	BREAKDOWN VOLTAGE VBR (V) MAX. @IT	TEST CURRENT IT (mA)	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @VRWM IR (uA)
3.0SMCJ5.0C	IDD	5	6.4	7.82	10	9.6	312.5	2000
3.0SMCJ5.0CA	IDE	5	6.4	7.07	10	9.2	326	2000
3.0SMCJ6.0C	IDF	6	6.67	8.15	10	11.4	263.2	2000
3.0SMCJ6.0CA	IDG	6	6.67	7.37	10	10.3	291.3	2000
3.0SMCJ6.5C	IDH	6.5	7.22	8.82	10	12.3	243.9	1000
3.0SMCJ6.5CA	IDK	6.5	7.22	7.98	10	11.2	267.9	1000
3.0SMCJ7.0C	IDL	7	7.78	9.51	10	13.3	225.6	400
3.0SMCJ7.0CA	IDM	7	7.78	8.60	10	12	250	400
3.0SMCJ7.5C	IDN	7.5	8.33	10.18	1	14.3	209.8	200
3.0SMCJ7.5CA	IDP	7.5	8.33	9.21	1	12.9	232.6	200
3.0SMCJ8.0C	IDQ	8	8.99	10.99	1	15	220	100
3.0SMCJ8.0CA	IDR	8	8.99	9.94	1	13.6	220.6	100
3.0SMCJ8.5C	IDS	8.5	9.44	11.54	1	15.9	188.8	50
3.0SMCJ8.5CA	IDT	8.5	9.44	10.43	1	14.4	208.4	50
3.0SMCJ9.0C	IDU	9	10	12.22	1	16.9	177.4	20
3.0SMCJ9.0CA	IDV	9	10	11.05	1	15.4	194.8	20
3.0SMCJ10C	IDW	10	11.1	13.57	1	18.8	159.6	5
3.0SMCJ10CA	IDX	10	11.1	12.27	1	17	176.4	5
3.0SMCJ11C	IDY	11	12.2	14.91	1	20.1	149.2	5
3.0SMCJ11CA	IDZ	11	12.2	13.48	1	18.2	184.8	5
3.0SMCJ12C	IED	12	13.3	16.26	1	22	136.4	5
3.0SMCJ12CA	IEE	12	13.3	14.70	1	19.9	150.6	5
3.0SMCJ13C	IEF	13	14.4	17.60	1	23.8	126	5
3.0SMCJ13CA	IEG	13	14.4	15.92	1	21.5	139.4	5
3.0SMCJ14C	IEH	14	15.6	19.07	1	25.8	116.2	5
3.0SMCJ14CA	IEK	14	15.6	17.24	1	23.2	129.4	5
3.0SMCJ15C	IEL	15	16.7	20.41	1	26.9	111.6	5
3.0SMCJ15CA	IEM	15	16.7	18.46	1	24.4	123	5
3.0SMCJ16C	IEN	16	17.8	21.76	1	28.8	104.2	5
3.0SMCJ16CA	IEP	16	17.8	19.67	1	26	115.4	5
3.0SMCJ17C	IEQ	17	18.9	23.10	1	30.5	98.4	5
3.0SMCJ17CA	IER	17	18.9	20.89	1	27.6	106.6	5
3.0SMCJ18C	IES	18	20	24.44	1	32.2	93.2	5
3.0SMCJ18CA	IET	18	20	22.11	1	29.2	102.8	5
3.0SMCJ20C	IEU	20	22.2	27.13	1	35.8	83.8	5
3.0SMCJ20CA	IEV	20	22.2	24.54	1	32.4	92.6	5
3.0SMCJ22C	IEW	22	24.4	29.82	1	39.4	76.2	5
3.0SMCJ22CA	IEX	22	24.4	26.97	1	35.5	84.4	5
3.0SMCJ24C	IEY	24	26.7	32.63	1	43	69.8	5
3.0SMCJ24CA	IEZ	24	26.7	29.51	1	38.9	77.2	5
3.0SMCJ26C	IFD	26	28.9	35.32	1	46.6	64.4	5
3.0SMCJ26CA	IFE	26	28.9	31.94	1	42.1	71.2	5
3.0SMCJ28C	IFF	28	31.1	38.01	1	50	60	5
3.0SMCJ28CA	IFG	28	31.1	34.37	1	45.4	66	5
3.0SMCJ30C	IFH	30	33.3	40.70	1	53.5	56	5
3.0SMCJ30CA	IFK	30	33.3	36.81	1	48.4	62	5
3.0SMCJ33C	IFL	33	36.7	44.86	1	59	50.4	5
3.0SMCJ33CA	IFM	33	36.7	40.56	1	53.3	56.2	5
3.0SMCJ36C	IFN	36	40	48.89	1	64.3	46.6	5
3.0SMCJ36CA	IFP	36	40	44.21	1	58.1	51.6	5
3.0SMCJ40C	IFQ	40	44.4	54.27	1	71.4	42	5
3.0SMCJ40CA	IFR	40	44.4	49.07	1	64.5	46.4	5
3.0SMCJ43C	IFS	43	47.8	58.42	1	76.6	39.2	5
3.0SMCJ43CA	IFT	43	47.8	52.83	1	69.4	43.2	5
3.0SMCJ45C	IFU	45	50	61.11	1	80.3	37.4	5
3.0SMCJ45CA	IFV	45	50	55.26	1	72.7	41.2	5
3.0SMCJ48C	IFW	48	53.3	65.14	1	85.5	35	5
3.0SMCJ48CA	IFX	48	53.3	58.91	1	77.4	38.8	5
3.0SMCJ51C	IFY	51	56.7	69.30	1	91.1	37	5
3.0SMCJ51CA	IFZ	51	56.7	62.67	1	82.4	36.4	5
3.0SMCJ54C	IGD	54	60	73.33	1	96.3	31.2	5
3.0SMCJ54CA	IGE	54	60	66.32	1	87.1	34.4	5
3.0SMCJ58C	IGF	58	64.4	78.71	1	103	29.2	5
3.0SMCJ58CA	IGG	58	64.4	71.18	1	93.6	32	5
3.0SMCJ60C	IGH	60	66.7	81.52	1	107	28	5
3.0SMCJ60CA	IGK	60	66.7	73.72	1	96.8	31	5
3.0SMCJ64C	IGL	64	71.1	86.90	1	114	26.4	5
3.0SMCJ64CA	IGM	64	71.1	78.58	1	103	29.2	5
3.0SMCJ70C	IGN	70	77.8	95.09	1	125	24	5
3.0SMCJ70CA	IGP	70	77.8	85.99	1	113	26.6	5
3.0SMCJ75C	IGQ	75	83.3	101.81	1	134	22.4	5
3.0SMCJ75CA	IGR	75	83.3	92.07	1	121	24.8	5
3.0SMCJ78C	IGS	78	86.7	105.97	1	139	21.6	5
3.0SMCJ78CA	IGT	78	86.7	95.83	1	126	22.8	5
3.0SMCJ85C	IGU	85	94.4	115.38	1	151	19.8	5
3.0SMCJ85CA	IGV	85	94.4	104.34	1	137	20.8	5
3.0SMCJ90C	IGW	90	100	122.22	1	160	18.8	5
3.0SMCJ90CA	IGX	90	100	110.53	1	146	20.6	5
3.0SMCJ100C	IGY	100	111	135.67	1	179	16.6	5
3.0SMCJ100CA	IGZ	100	111	122.88	1	162	18.6	5
3.0SMCJ110C	IHD	110	122	149.11	1	196	15.4	5
3.0SMCJ110CA	IHE	110	122	134.84	1	177	16.8	5
3.0SMCJ120C	IHF	120	133	162.56	1	214	14	5
3.0SMCJ120CA	IHG	120	133	147.00	1	193	15.6	5
3.0SMCJ130C	IHH	130	144	176.00	1	231	13	5
3.0SMCJ130CA	IHK	130	144	159.16	1	209	14.4	5
3.0SMCJ150C	IHL	150	167	204.11	1	269	11.2	5
3.0SMCJ150CA	IHM	150	167	184.58	1	243	12.4	5
3.0SMCJ160C	IHN	160	178	217.56	1	287	10.4	5
3.0SMCJ160CA	IHP	160	178	196.74	1	259	11.6	5
3.0SMCJ170C	IHQ	170	189	231.00	1	304	9.8	5
3.0SMCJ170CA	IHR	170	189	208.89	1	275	11	5



DISCLAIMER:

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