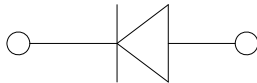
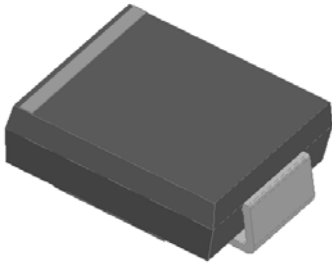
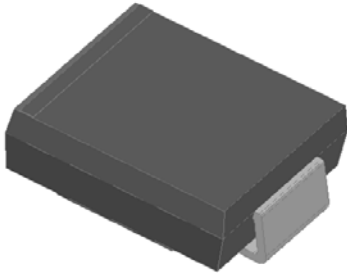


Surface Mount Transient Voltage Suppressor Diodes

Uni-directional



Bi-directional



Features

- For surface mounted applications
- Low-profile package
- Ideal for automated placement
- Available in Unidirectional and Bidirectional
- 3000W peak pulse power capability with a 10/1000 μ s waveform
- Low incremental surge resistance, excellent clamping capability
- Very fast response time
- High temperature soldering guaranteed: 260 °C/10 s at terminals
- Meets MSL level 1
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Typical Applications

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting on ICs, MOSFET, signal lines of sensor units for consumer, computer, industrial, telecommunication.

Mechanical Data

- **Package:** DO-214AB (SMC)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** For uni-directional types the band denotes cathode end, no marking on bi-directional types

■Maximum Ratings ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Max
Peak power dissipation, with a 10/1000us waveform ^{(1) (2)}	P_{PPM}	W	3000
Peak pulse current, with a 10/1000us waveform ⁽¹⁾	I_{PPM}	A	See Next Table
Power dissipation, on infinite heat sink at $T_L=75^\circ\text{C}$ ⁽²⁾	P_D	W	6.5
Peak forward surge current, 8.3 ms single half sine-wave unidirectional only ⁽³⁾	I_{FSM}	A	300
Operating junction and storage temperature range	T_J, T_{STG}	$^\circ\text{C}$	-55 to +150

■Electrical Characteristics ($T_a=25^\circ\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Maximum instantaneous forward voltage at 100A for unidirectional only ⁽⁴⁾	V_{FM}	V	3.5/5.0



SMDJ SERIES

■ Thermal Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	Conditions	VALUE
Thermal Resistance(Typical)	$R_{\theta JA}^{(5)}$	°C/W	junction to ambient	75
	$R_{\theta JL}$	°C/W	junction to lead	15

Notes:

- (1) Non-repetitive current pulse, per Fig. 3 and derated above $T_A = 25^\circ\text{C}$ per Fig.2.
- (2) Mounted on 0.31 x 0.31" (8.0 x 8.0 mm) copper pads to each terminal.
- (3) Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
- (4) $V_F=3.5\text{V}$ Max for devices of $V_{BR}\leq 220\text{V}$, and $V_F=5.0\text{V}$ Max for devices of $V_{BR}> 220\text{V}$.
- (5) Mounted on minimum recommended pad layout.

■ Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(3)}$ @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_c @ I_{PP} (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMDJ5.0	SMDJ5.0C	6.40	7.30	10	1000	5.0	312.50	9.6
SMDJ5.0A	SMDJ5.0CA ⁽⁴⁾	6.40	7.07	10	1000	5.0	326.09	9.2
SMDJ6.0	SMDJ6.0C	6.67	8.15	10	1000	6.0	263.16	11.4
SMDJ6.0A	SMDJ6.0CA	6.67	7.37	10	1000	6.0	291.26	10.3
SMDJ6.5	SMDJ6.5C	7.22	8.82	10	500	6.5	243.90	12.3
SMDJ6.5A	SMDJ6.5CA	7.22	7.98	10	500	6.5	267.86	11.2
SMDJ7.0	SMDJ7.0C	7.78	9.51	10	200	7.0	225.56	13.3
SMDJ7.0A	SMDJ7.0CA	7.78	8.60	10	200	7.0	250.00	12.0
SMDJ7.5	SMDJ7.5C	8.33	10.20	1	100	7.5	209.79	14.3
SMDJ7.5A	SMDJ7.5CA	8.33	9.21	1	100	7.5	232.56	12.9
SMDJ8.0	SMDJ8.0C	8.89	10.90	1	50	8.0	200.00	15.0
SMDJ8.0A	SMDJ8.0CA	8.89	9.83	1	50	8.0	220.59	13.6
SMDJ8.5	SMDJ8.5C	9.44	11.50	1	25	8.5	188.68	15.9
SMDJ8.5A	SMDJ8.5CA	9.44	10.40	1	25	8.5	208.33	14.4
SMDJ9.0	SMDJ9.0C	10.00	12.20	1	10	9.0	177.51	16.9
SMDJ9.0A	SMDJ9.0CA	10.00	11.10	1	10	9.0	194.81	15.4
SMDJ10	SMDJ10C	11.10	13.60	1	5	10.0	159.57	18.8
SMDJ10A	SMDJ10CA	11.10	12.30	1	5	10.0	176.47	17.0
SMDJ11	SMDJ11C	12.20	14.90	1	5	11.0	149.25	20.1
SMDJ11A	SMDJ11CA	12.20	13.50	1	5	11.0	164.84	18.2
SMDJ12	SMDJ12C	13.30	16.30	1	5	12.0	136.36	22.0
SMDJ12A	SMDJ12CA	13.30	14.70	1	5	12.0	150.75	19.9
SMDJ13	SMDJ13C	14.40	17.60	1	5	13.0	126.05	23.8
SMDJ13A	SMDJ13CA	14.40	15.90	1	5	13.0	139.53	21.5
SMDJ14	SMDJ14C	15.60	19.10	1	5	14.0	116.28	25.8
SMDJ14A	SMDJ14CA	15.60	17.20	1	5	14.0	129.31	23.2
SMDJ15	SMDJ15C	16.70	20.40	1	5	15.0	111.52	26.9
SMDJ15A	SMDJ15CA	16.70	18.50	1	5	15.0	122.95	24.4
SMDJ16	SMDJ16C	17.80	21.80	1	5	16.0	104.17	28.8
SMDJ16A	SMDJ16CA	17.80	19.70	1	5	16.0	115.38	26.0



SMDJ SERIES

■Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR@I_T}$			Maximum Reverse Leakage $I_R^{(3)}$ @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_c @ I_{PP} (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMDJ17	SMDJ17C	18.90	23.10	1	5	17.0	98.36	30.5
SMDJ17A	SMDJ17CA	18.90	20.90	1	5	17.0	108.70	27.6
SMDJ18	SMDJ18C	20.00	24.40	1	5	18.0	93.17	32.2
SMDJ18A	SMDJ18CA	20.00	22.10	1	5	18.0	102.74	29.2
SMDJ19	SMDJ19C	21.10	25.70	1	5	19.0	88.21	34.0
SMDJ19A	SMDJ19CA	21.10	23.30	1	5	19.0	97.47	30.8
SMDJ20	SMDJ20C	22.20	27.10	1	5	20.0	83.80	35.8
SMDJ20A	SMDJ20CA	22.20	24.50	1	5	20.0	92.59	32.4
SMDJ22	SMDJ22C	24.40	29.80	1	5	22.0	76.14	39.4
SMDJ22A	SMDJ22CA	24.40	26.90	1	5	22.0	84.51	35.5
SMDJ24	SMDJ24C	26.70	32.60	1	5	24.0	69.77	43.0
SMDJ24A	SMDJ24CA	26.70	29.50	1	5	24.0	77.12	38.9
SMDJ26	SMDJ26C	28.90	35.30	1	5	26.0	64.38	46.6
SMDJ26A	SMDJ26CA	28.90	31.90	1	5	26.0	71.26	42.1
SMDJ28	SMDJ28C	31.10	38.00	1	5	28.0	60.00	50.0
SMDJ28A	SMDJ28CA	31.10	34.40	1	5	28.0	66.08	45.4
SMDJ30	SMDJ30C	33.30	40.70	1	5	30.0	56.07	53.5
SMDJ30A	SMDJ30CA	33.30	36.80	1	5	30.0	61.98	48.4
SMDJ33	SMDJ33C	36.70	44.90	1	5	33.0	50.85	59.0
SMDJ33A	SMDJ33CA	36.70	40.60	1	5	33.0	56.29	53.3
SMDJ36	SMDJ36C	40.00	48.90	1	5	36.0	46.66	64.3
SMDJ36A	SMDJ36CA	40.00	44.20	1	5	36.0	51.64	58.1
SMDJ40	SMDJ40C	44.40	54.30	1	5	40.0	42.02	71.4
SMDJ40A	SMDJ40CA	44.40	49.10	1	5	40.0	46.51	64.5
SMDJ43	SMDJ43C	47.80	58.40	1	5	43.0	39.11	76.7
SMDJ43A	SMDJ43CA	47.80	52.80	1	5	43.0	43.23	69.4
SMDJ45	SMDJ45C	50.00	61.10	1	5	45.0	37.36	80.3
SMDJ45A	SMDJ45CA	50.00	55.30	1	5	45.0	41.27	72.7
SMDJ48	SMDJ48C	53.30	65.10	1	5	48.0	35.09	85.5
SMDJ48A	SMDJ48CA	53.30	58.90	1	5	48.0	38.76	77.4
SMDJ51	SMDJ51C	56.70	69.30	1	5	51.0	32.93	91.1
SMDJ51A	SMDJ51CA	56.70	62.70	1	5	51.0	36.41	82.4
SMDJ54	SMDJ54C	60.00	73.30	1	5	54.0	31.15	96.3
SMDJ54A	SMDJ54CA	60.00	66.30	1	5	54.0	34.44	87.1
SMDJ58	SMDJ58C	64.40	78.70	1	5	58.0	29.13	103.0
SMDJ58A	SMDJ58CA	64.40	71.20	1	5	58.0	32.05	93.6
SMDJ60	SMDJ60C	66.70	81.50	1	5	60.0	28.04	107.0
SMDJ60A	SMDJ60CA	66.70	73.70	1	5	60.0	30.99	96.8
SMDJ64	SMDJ64C	71.10	86.90	1	5	64.0	26.32	114.0
SMDJ64A	SMDJ64CA	71.10	78.60	1	5	64.0	29.13	103.0
SMDJ70	SMDJ70C	77.80	95.10	1	5	70.0	24.00	125.0



SMDJ SERIES

■Electrical Characteristics (TA=25°C unless otherwise noted)

Part Number (Uni)	Part Number (Bi)	Breakdown Voltage $V_{BR}@I_T$			Maximum Reverse Leakage $I_R^{(3)}$ @ V_{RWM} (μA)	Working Peak Reverse Voltage V_{RWM} (V)	Maximum Reverse Surge Current $I_{PP}^{(2)}$ (A)	Maximum Clamping Voltage V_c @ I_{PP} (V)
		Min(V)	Max (V)	$I_T^{(1)}$ (mA)				
SMDJ70A	SMDJ70CA	77.80	86.00	1	5	70.0	26.55	113.0
SMDJ75	SMDJ75C	83.30	102.00	1	5	75.0	22.39	134.0
SMDJ75A	SMDJ75CA	83.30	92.10	1	5	75.0	24.79	121.0
SMDJ78	SMDJ78C	86.70	106.00	1	5	78.0	21.58	139.0
SMDJ78A	SMDJ78CA	86.70	95.80	1	5	78.0	23.81	126.0
SMDJ80	SMDJ80C	88.96	108.80	1	5	80.0	20.95	143.2
SMDJ80A	SMDJ80CA	88.80	97.60	1	5	80.0	23.15	129.6
SMDJ85	SMDJ85C	94.40	115.00	1	5	85.0	19.87	151.0
SMDJ85A	SMDJ85CA	94.40	104.00	1	5	85.0	21.90	137.0
SMDJ90	SMDJ90C	100.00	122.00	1	5	90.0	18.75	160.0
SMDJ90A	SMDJ90CA	100.00	111.00	1	5	90.0	20.55	146.0
SMDJ100	SMDJ100C	111.00	136.00	1	5	100.0	16.76	179.0
SMDJ100A	SMDJ100CA	111.00	123.00	1	5	100.0	18.52	162.0
SMDJ110	SMDJ110C	122.00	149.00	1	5	110.0	15.31	196.0
SMDJ110A	SMDJ110CA	122.00	135.00	1	5	110.0	16.95	177.0
SMDJ120	SMDJ120C	133.00	163.00	1	5	120.0	14.02	214.0
SMDJ120A	SMDJ120CA	133.00	147.00	1	5	120.0	15.54	193.0
SMDJ130	SMDJ130C	144.00	176.00	1	5	130.0	12.99	231.0
SMDJ130A	SMDJ130CA	144.00	159.00	1	5	130.0	14.35	209.0
SMDJ140	SMDJ140C	155.70	190.40	1	5	140.0	11.97	250.6
SMDJ140A	SMDJ140CA	155.00	171.00	1	5	140.0	13.23	226.8
SMDJ150	SMDJ150C	167.00	204.00	1	5	150.0	11.19	268.0
SMDJ150A	SMDJ150CA	167.00	185.00	1	5	150.0	12.35	243.0
SMDJ160	SMDJ160C	178.00	218.00	1	5	160.0	10.45	287.0
SMDJ160A	SMDJ160CA	178.00	197.00	1	5	160.0	11.58	259.0
SMDJ170	SMDJ170C	189.00	231.00	1	5	170.0	9.87	304.0
SMDJ170A	SMDJ170CA	189.00	209.00	1	5	170.0	10.91	275.0
SMDJ180	SMDJ180C	200.20	244.80	1	5	180.0	9.31	322.2
SMDJ180A	SMDJ180CA	200.00	220.00	1	5	180.0	10.29	291.6
SMDJ190	SMDJ190C	211.30	258.40	1	5	190.0	8.82	340.1
SMDJ190A	SMDJ190CA	211.00	232.00	1	5	190.0	9.75	307.8
SMDJ200A	SMDJ200CA	224.00	247.00	1	5	200.0	9.26	324.0
SMDJ220A	SMDJ220CA	246.00	272.00	1	5	220.0	8.43	356.0
SMDJ250A	SMDJ250CA	279.00	309.00	1	5	250.0	7.41	405.0
SMDJ300A	SMDJ300CA	335.00	371.00	1	5	300.0	6.17	486.0
SMDJ350A	SMDJ350CA	391.00	432.00	1	5	350.0	5.29	567.0
SMDJ400A	SMDJ400CA	447.00	494.00	1	5	400.0	4.63	648.0
SMDJ440A	SMDJ440CA	492.00	543.00	1	5	440.0	4.21	713.0

Notes:

- (1) Pulse Test: $t_p \leq 50ms$ Pulse test: $t_p \leq 50ms$.
- (2) Surge current waveform per Fig. 3 and derated per Fig.2.
- (3) For bi-directional types having V_{RWM} of 10 V and less, the IR limit is doubled.
- (4) For the bi-directional SMDJ5.0CA, the maximum V_{BR} is 7.25 V.



SMDJ SERIES

Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SMDJ SERIES	F1	Approximate 0.257	3000	6000	42000	13" reel

Characteristics(Typical)

FIG1: Peak Pulse Power Rating Curve

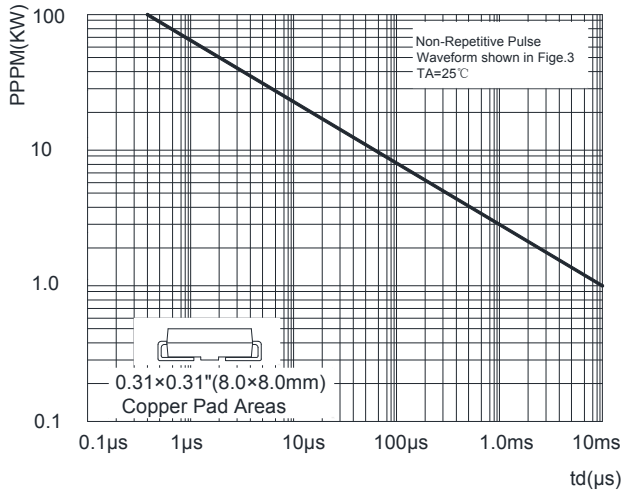


FIG2: Pulse Power or Current vs. Initial Junction Temperature

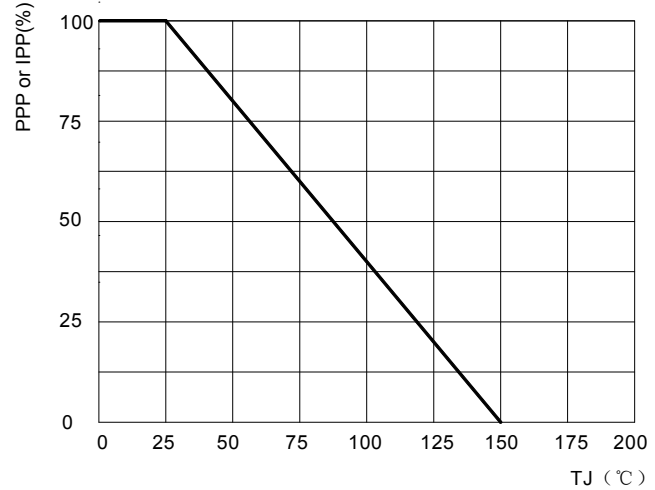


FIG3: Pulse Waveform

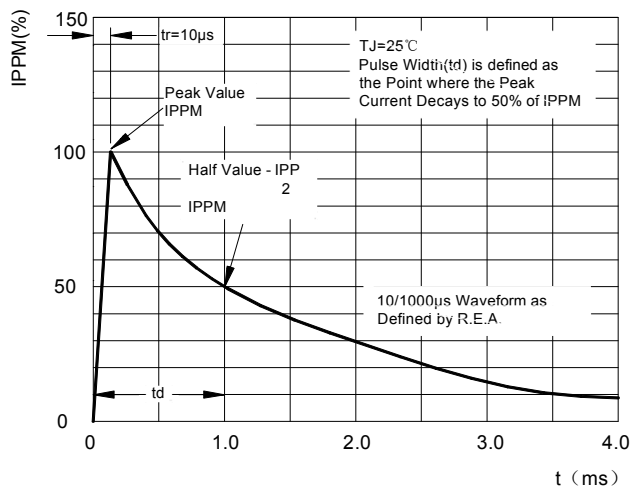


FIG4: Typical Transient Thermal Impedance

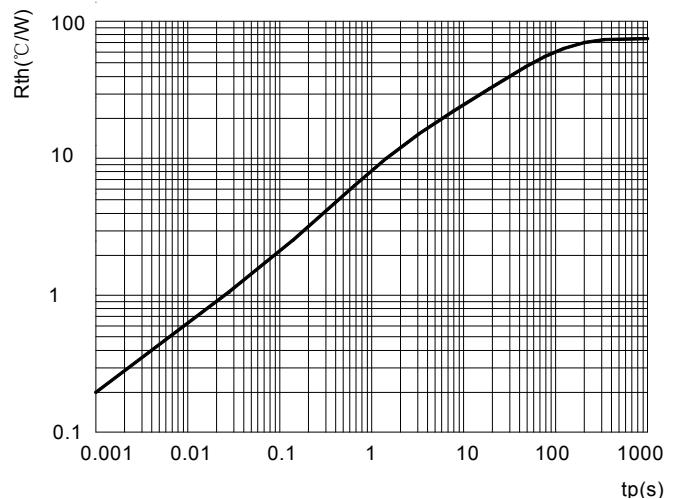


FIG5: Maximum Non-Repetitive Surge Current

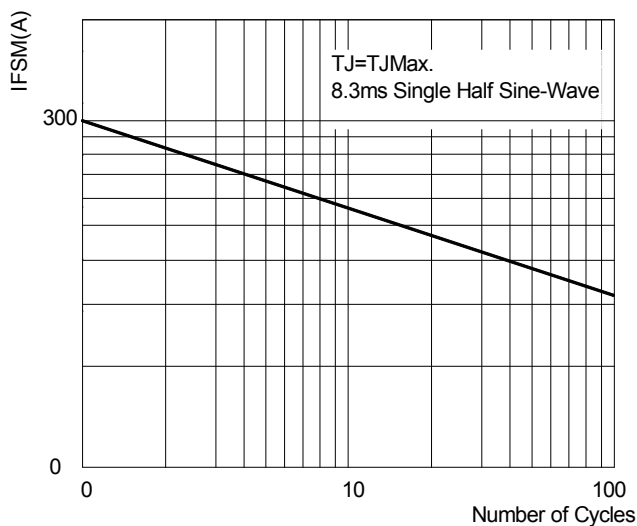
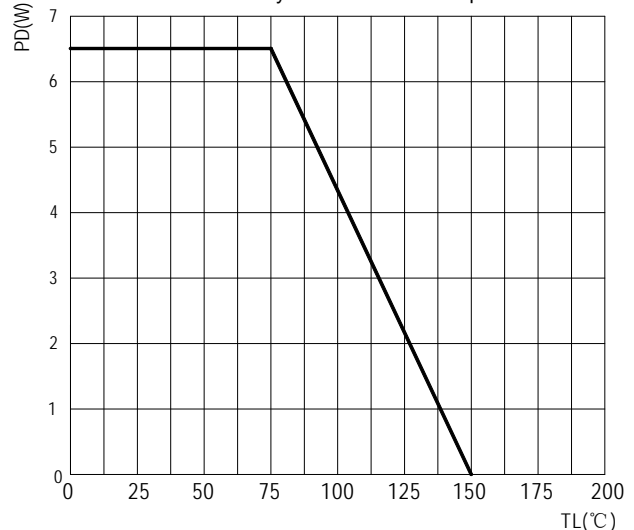


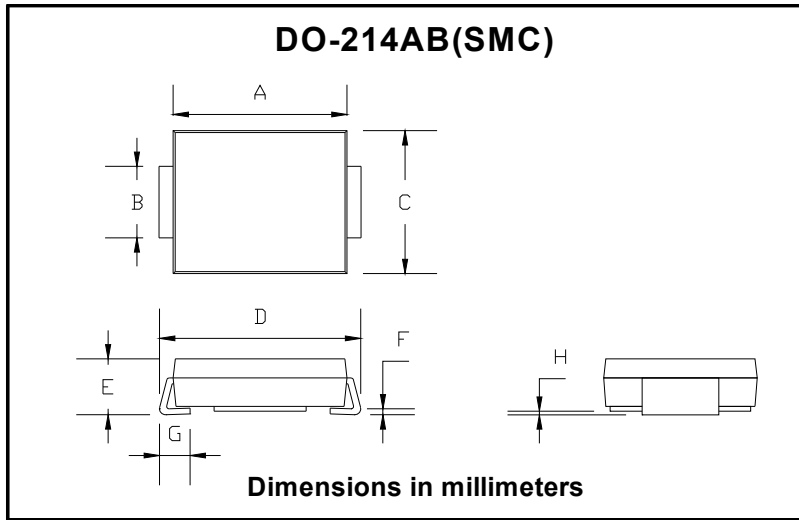
FIG6: Steady State Power Dissipation





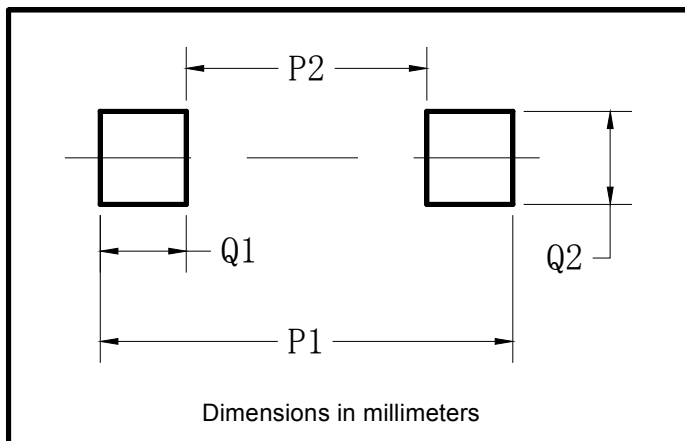
SMDJ SERIES

■ Outline Dimensions



DO-214AB (SMC)		
Dim	Min	Max
A	6.60	7.11
B	2.85	3.27
C	5.59	6.22
D	7.75	8.13
E	1.99	2.61
F	0.15	0.31
G	0.76	1.52
H	0.10	0.20

■ Suggested pad layout



Dim	Typ
P1	9.9
P2	3.84
Q1	3.03
Q2	3.82



SMDJ SERIES

Disclaimer

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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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