

Features

- Glass passivated chip
- 600W peak pulse power(10/1000us)
- High accuracy, 5% tolerance
- Uni and Bidirectional unit
- Low clamping voltage
- Low Leakage current
- Very fast response time
- Meet MSL level1, per J-STD-020, LF maximum peak of 260°C
- JESD22-A114-B ESD Voltage:HBM 15KV
- JEDEC EIA/JESD22-C101F ESD Voltage:CDM 500V
- JEDEC EIA/JESD22-A115 ESD Voltage:MM 400V
- ESD-immunity acc. IEC 61000-4-2 ±30KV contact ±30KV air
- Base P/N-HM AEC-Q101 qualified

Mechanical Data

- **Case:** DO-214AC/SMA (plastic package).
RoHS compliant
- **Molding Compound Flammability Rating:**
UL 94 V-0
- **Terminals:** High temperature soldering guaranteed:
260 °C/10 sec. at terminals

Applications

- Computers
- Telecom system
- Industrial equipments
- Consumer electronic applications
- Other VCC bus and I/O interfaces

Absolute Maximum Ratings

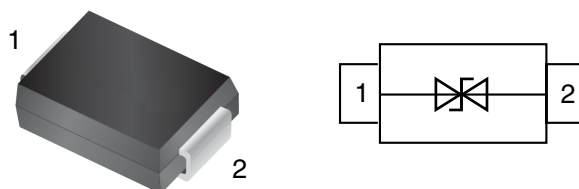
Ratings at 25 °C, ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak pulse power dissipation with a 10/1000us waveform ⁽¹⁾	P _{PP}	600	W
Maximum peak reverse pulse current a 10/1000us waveform ⁽¹⁾	I _{PP}	See Next Table	A
Peak forward surge current 8.3ms single half sine-wave ⁽²⁾	I _{FSM}	60	A
Maximum instantaneous forward voltage at 25A for unidirectional only ⁽³⁾	V _F	3.5/5.0	V
Thermal resistance	R _{θJL}	30	°C/W
	R _{θJA}	120	°C/W
Operating junction and storage temperature range	T _J , T _{STG}	-55 to +150	°C

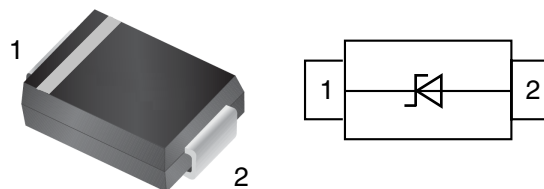
Notes:

- 1.Non-repetitive current pulse,per Fig.5 and detated above TA=25°C per Fig.1
- 2.Measured on 8.3ms single half sine-wave,or equivalent square wave,duty cycle=4 pulses per minute maximum
- 3.V_F<3.5V for devices of VBR<200V and V_F<5.0V for devices of VBR>201V

Bidirectional



Unidirectional



Electrical Characteristics

(T_A = 25 °C unless otherwise specified)

Part Number	Marking	Direction	Maximum Working Voltage V _{RWM} (V)	Maximum Reverse Current@V _{RWM} I _R max(uA)	Breakdown Voltage@I _T			Peak Surge Current I _{PP} (A)	Maximum Clamping Voltage@I _{PP} V _C (V)
					V _{BR} min(V)	V _{BR} max(V)	I _T (mA)		
SMA6J5.0A	KE	Uni-Dir	5.0	800	6.4	7.07	10	65.22	9.2
SMA6J5.0CA	AE	Bi-Dir	5.0	1600	6.4	7.07	10	65.22	9.2
SMA6J6.0A	KG	Uni-Dir	6.0	800	6.67	7.37	10	58.25	10.3
SMA6J6.0CA	AG	Bi-Dir	6.0	1600	6.67	7.37	10	58.25	10.3
SMA6J6.5A	KK	Uni-Dir	6.5	500	7.22	7.98	10	53.57	11.2
SMA6J6.5CA	AK	Bi-Dir	6.5	1000	7.22	7.98	10	53.57	11.2
SMA6J7.0A	KM	Uni-Dir	7.0	200	7.78	8.60	10	50.00	12.0
SMA6J7.0CA	AM	Bi-Dir	7.0	400	7.78	8.60	10	50.00	12.0
SMA6J7.5A	KP	Uni-Dir	7.5	100	8.33	9.21	1	46.51	12.9
SMA6J7.5CA	AP	Bi-Dir	7.5	200	8.33	9.21	1	46.51	12.9
SMA6J8.0A	KR	Uni-Dir	8.0	50	8.89	9.83	1	44.12	13.6
SMA6J8.0CA	AR	Bi-Dir	8.0	100	8.89	9.83	1	44.12	13.6
SMA6J8.5A	KT	Uni-Dir	8.5	10	9.44	10.40	1	41.67	14.4
SMA6J8.5CA	AT	Bi-Dir	8.5	20	9.44	10.40	1	41.67	14.4
SMA6J9.0A	KV	Uni-Dir	9.0	5	10.00	11.10	1	38.96	15.4
SMA6J9.0CA	AV	Bi-Dir	9.0	10	10.00	11.10	1	38.96	15.4
SMA6J10A	KX	Uni-Dir	10.0	5	11.10	12.30	1	35.29	17.0
SMA6J10CA	AX	Bi-Dir	10.0	10	11.10	12.30	1	35.29	17.0
SMA6J11A	KZ	Uni-Dir	11.0	1	12.20	13.50	1	32.97	18.2
SMA6J11CA	AZ	Bi-Dir	11.0	1	12.20	13.50	1	32.97	18.2
SMA6J12A	LE	Uni-Dir	12.0	1	13.30	14.70	1	30.15	19.9
SMA6J12CA	BE	Bi-Dir	12.0	1	13.30	14.70	1	30.15	19.9
SMA6J13A	LG	Uni-Dir	13.0	1	14.40	15.90	1	27.91	21.5
SMA6J13CA	BG	Bi-Dir	13.0	1	14.40	15.90	1	27.91	21.5
SMA6J14A	LK	Uni-Dir	14.0	1	15.60	17.20	1	25.86	23.2
SMA6J14CA	BK	Bi-Dir	14.0	1	15.60	17.20	1	25.86	23.2
SMA6J15A	LM	Uni-Dir	15.0	1	16.70	18.50	1	24.59	24.4
SMA6J15CA	BM	Bi-Dir	15.0	1	16.70	18.50	1	24.59	24.4
SMA6J16A	LP	Uni-Dir	16.0	1	17.80	19.70	1	23.08	26.0
SMA6J16CA	BP	Bi-Dir	16.0	1	17.80	19.70	1	23.08	26.0
SMA6J17A	LR	Uni-Dir	17.0	1	18.90	20.90	1	21.74	27.6
SMA6J17CA	BR	Bi-Dir	17.0	1	18.90	20.90	1	21.74	27.6
SMA6J18A	LT	Uni-Dir	18.0	1	20.00	22.10	1	20.55	29.2
SMA6J18CA	BT	Bi-Dir	18.0	1	20.00	22.10	1	20.55	29.2
SMA6J19A	LW	Uni-Dir	19.0	1	21.10	23.30	1	19.49	30.8
SMA6J19CA	BW	Bi-Dir	19.0	1	21.10	23.30	1	19.49	30.8
SMA6J20A	LV	Uni-Dir	20.0	1	22.20	24.50	1	18.52	32.4
SMA6J20CA	BV	Bi-Dir	20.0	1	22.20	24.50	1	18.52	32.4

Part Number	Marking	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(uA)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
					V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
SMA6J22A	LX	Uni-Dir	22.0	1	24.40	26.90	1	16.90	35.5
SMA6J22CA	BX	Bi-Dir	22.0	1	24.40	26.90	1	16.90	35.5
SMA6J24A	LZ	Uni-Dir	24.0	1	26.70	29.50	1	15.42	38.9
SMA6J24CA	BZ	Bi-Dir	24.0	1	26.70	29.50	1	15.42	38.9
SMA6J26A	ME	Uni-Dir	26.0	1	28.90	31.90	1	14.25	42.1
SMA6J26CA	CE	Bi-Dir	26.0	1	28.90	31.90	1	14.25	42.1
SMA6J28A	MG	Uni-Dir	28.0	1	31.10	34.40	1	13.22	45.4
SMA6J28CA	CG	Bi-Dir	28.0	1	31.10	34.40	1	13.22	45.4
SMA6J30A	MK	Uni-Dir	30.0	1	33.30	36.80	1	12.40	48.4
SMA6J30CA	CK	Bi-Dir	30.0	1	33.30	36.80	1	12.40	48.4
SMA6J33A	MM	Uni-Dir	33.0	1	36.70	40.60	1	11.26	53.3
SMA6J33CA	CM	Bi-Dir	33.0	1	36.70	40.60	1	11.26	53.3
SMA6J36A	MP	Uni-Dir	36.0	1	40.00	44.20	1	10.33	58.1
SMA6J36CA	CP	Bi-Dir	36.0	1	40.00	44.20	1	10.33	58.1
SMA6J40A	MR	Uni-Dir	40.0	1	44.40	49.10	1	9.30	64.5
SMA6J40CA	CR	Bi-Dir	40.0	1	44.40	49.10	1	9.30	64.5
SMA6J43A	MT	Uni-Dir	43.0	1	47.80	52.80	1	8.65	69.4
SMA6J43CA	CT	Bi-Dir	43.0	1	47.80	52.80	1	8.65	69.4
SMA6J45A	MV	Uni-Dir	45.0	1	50.00	55.30	1	8.25	72.7
SMA6J45CA	CV	Bi-Dir	45.0	1	50.00	55.30	1	8.25	72.7
SMA6J48A	MX	Uni-Dir	48.0	1	53.30	58.90	1	7.75	77.4
SMA6J48CA	CX	Bi-Dir	48.0	1	53.30	58.90	1	7.75	77.4
SMA6J51A	MZ	Uni-Dir	51.0	1	56.70	62.70	1	7.28	82.4
SMA6J51CA	CZ	Bi-Dir	51.0	1	56.70	62.70	1	7.28	82.4
SMA6J54A	NE	Uni-Dir	54.0	1	60.00	66.30	1	6.89	87.1
SMA6J54CA	DE	Bi-Dir	54.0	1	60.00	66.30	1	6.89	87.1
SMA6J58A	NG	Uni-Dir	58.0	1	64.40	71.20	1	6.41	93.6
SMA6J58CA	DG	Bi-Dir	58.0	1	64.40	71.20	1	6.41	93.6
SMA6J60A	NK	Uni-Dir	60.0	1	66.70	73.70	1	6.20	96.8
SMA6J60CA	DK	Bi-Dir	60.0	1	66.70	73.70	1	6.20	96.8
SMA6J64A	NM	Uni-Dir	64.0	1	71.10	78.60	1	5.83	103.0
SMA6J64CA	DM	Bi-Dir	64.0	1	71.10	78.60	1	5.83	103.0
SMA6J70A	NP	Uni-Dir	70.0	1	77.80	86.00	1	5.31	113.0
SMA6J70CA	DP	Bi-Dir	70.0	1	77.80	86.00	1	5.31	113.0
SMA6J75A	NR	Uni-Dir	75.0	1	83.30	92.10	1	4.96	121.0
SMA6J75CA	DR	Bi-Dir	75.0	1	83.30	92.10	1	4.96	121.0
SMA6J78A	NT	Uni-Dir	78.0	1	86.70	95.80	1	4.76	126.0
SMA6J78CA	DT	Bi-Dir	78.0	1	86.70	95.80	1	4.76	126.0

Part Number	Marking	Direction	Maximum Working Voltage V_{RWM} (V)	Maximum Reverse Current@ V_{RWM} I_R max(μ A)	Breakdown Voltage@ I_T			Peak Surge Current I_{PP} (A)	Maximum Clamping Voltage@ I_{PP} V_C (V)
					V_{BR} min(V)	V_{BR} max(V)	I_T (mA)		
SMA6J80A	NW	Uni-Dir	80.0	1	88.80	97.60	1	4.63	129.6
SMA6J80CA	DW	Bi-Dir	80.0	1	88.80	97.60	1	4.63	129.6
SMA6J85A	NV	Uni-Dir	85.0	1	94.40	104.00	1	4.38	137.0
SMA6J85CA	DV	Bi-Dir	85.0	1	94.40	104.00	1	4.38	137.0
SMA6J90A	NX	Uni-Dir	90.0	1	100.00	111.00	1	4.11	146.0
SMA6J90CA	DX	Bi-Dir	90.0	1	100.00	111.00	1	4.11	146.0
SMA6J100A	NZ	Uni-Dir	100.0	1	111.00	123.00	1	3.70	162.0
SMA6J100CA	DZ	Bi-Dir	100.0	1	111.00	123.00	1	3.70	162.0
SMA6J110A	PE	Uni-Dir	110.0	1	122.00	135.00	1	3.39	177.0
SMA6J110CA	FE	Bi-Dir	110.0	1	122.00	135.00	1	3.39	177.0
SMA6J120A	PG	Uni-Dir	120.0	1	133.00	147.00	1	3.11	193.0
SMA6J120CA	FG	Bi-Dir	120.0	1	133.00	147.00	1	3.11	193.0
SMA6J130A	PK	Uni-Dir	130.0	1	144.00	159.00	1	2.87	209.0
SMA6J130CA	FK	Bi-Dir	130.0	1	144.00	159.00	1	2.87	209.0
SMA6J140A	PL	Uni-Dir	140.0	1	155.00	171.00	1	2.65	226.8
SMA6J140CA	FL	Bi-Dir	140.0	1	155.00	171.00	1	2.65	226.8
SMA6J150A	PM	Uni-Dir	150.0	1	167.00	185.00	1	2.47	243.0
SMA6J150CA	FM	Bi-Dir	150.0	1	167.00	185.00	1	2.47	243.0
SMA6J160A	PP	Uni-Dir	160.0	1	178.00	197.00	1	2.32	259.0
SMA6J160CA	FP	Bi-Dir	160.0	1	178.00	197.00	1	2.32	259.0
SMA6J170A	PR	Uni-Dir	170.0	1	189.00	209.00	1	2.18	275.0
SMA6J170CA	FR	Bi-Dir	170.0	1	189.00	209.00	1	2.18	275.0
SMA6J180A	PT	Uni-Dir	180.0	1	200.00	220.00	1	2.06	291.6
SMA6J180CA	FT	Bi-Dir	180.0	1	200.00	220.00	1	2.06	291.6
SMA6J190A	PJ	Uni-Dir	190.0	1	211.00	232.00	1	1.95	307.8
SMA6J190CA	FU	Bi-Dir	190.0	1	211.00	232.00	1	1.95	307.8
SMA6J200A	PV	Uni-Dir	200.0	1	224.00	247.00	1	1.85	324.0
SMA6J200CA	FV	Bi-Dir	200.0	1	224.00	247.00	1	1.85	324.0

Typical Characteristics ($T_{amb} = 25\text{ }^{\circ}\text{C}$ unless otherwise specified)

Fig. 1 - Pulse Derating Curve

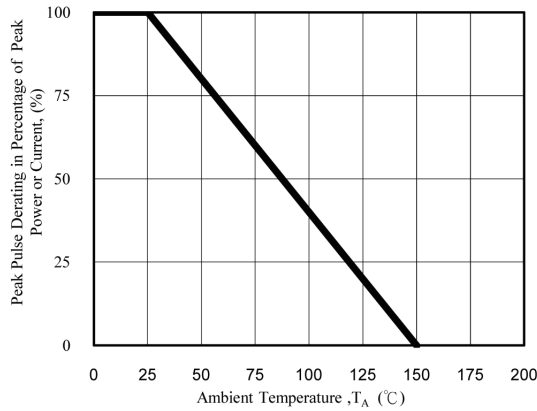


Fig. 2 - Maximum Non-Repetitive Surge Current

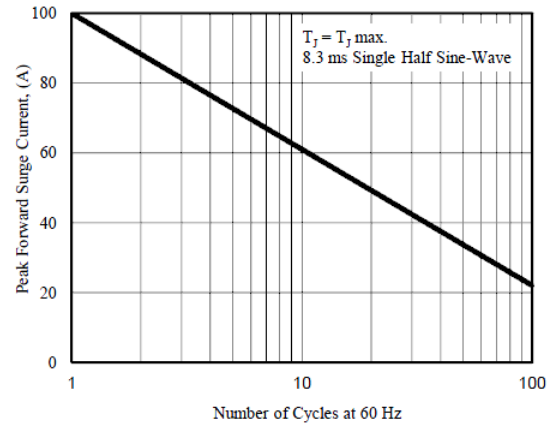


Fig. 3 - Steady State Power Derating Curve

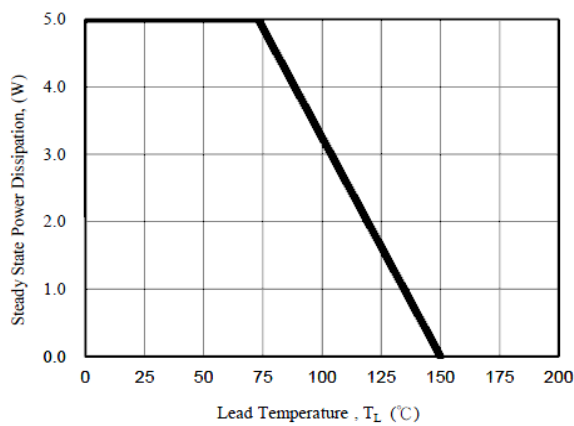


Fig. 4 - Peak Pulse Power Rating Curve

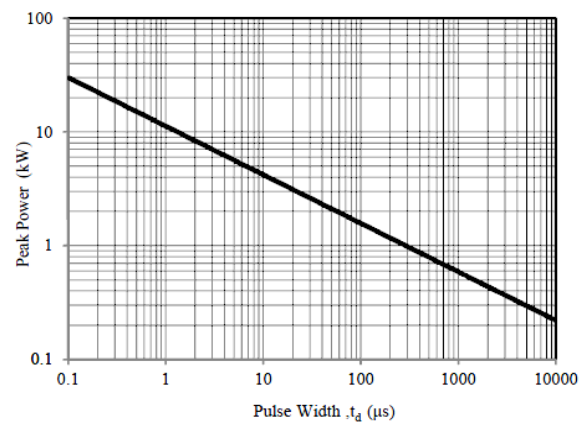


Fig. 5 - Pulse Waveform

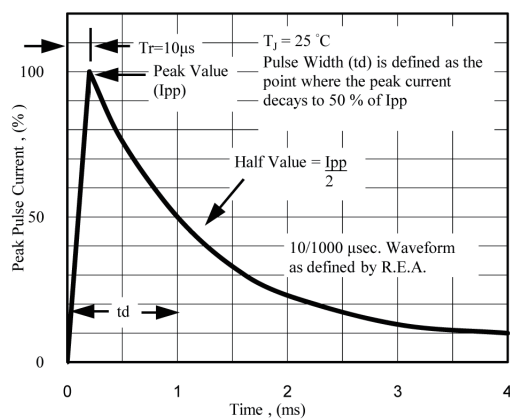
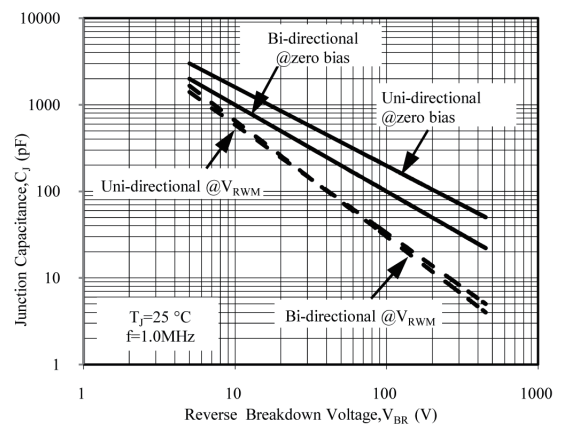
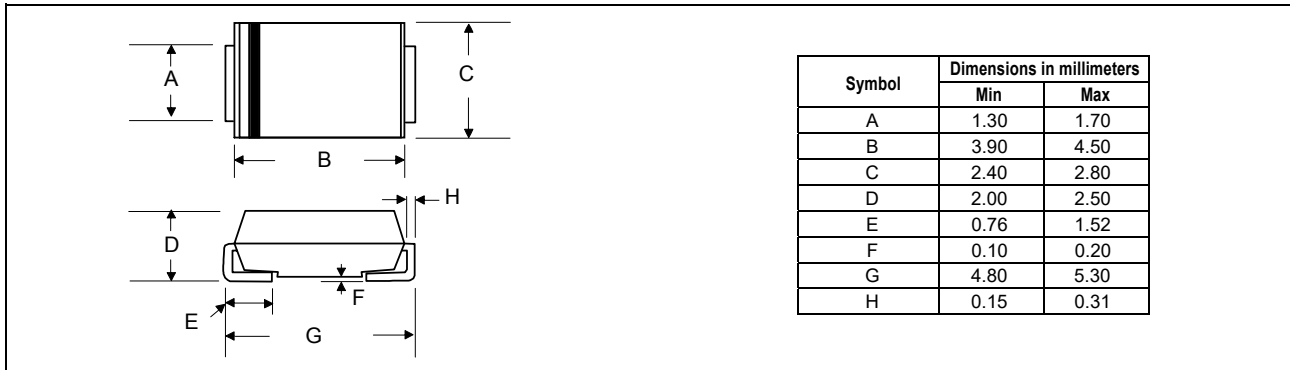


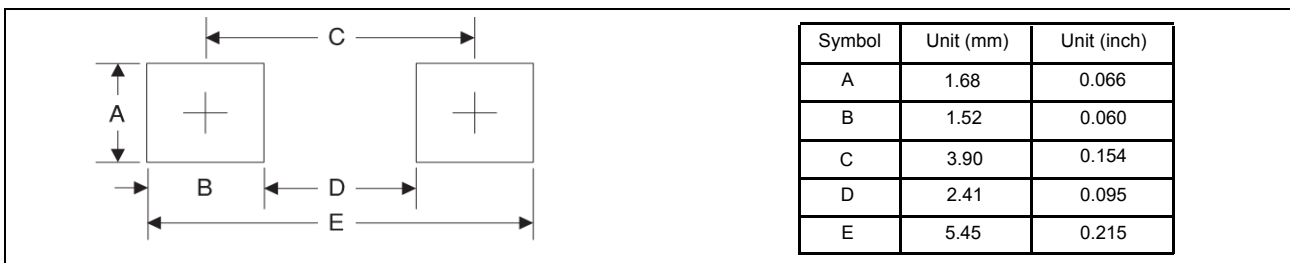
Fig. 6 - Typical Junction Capacitance



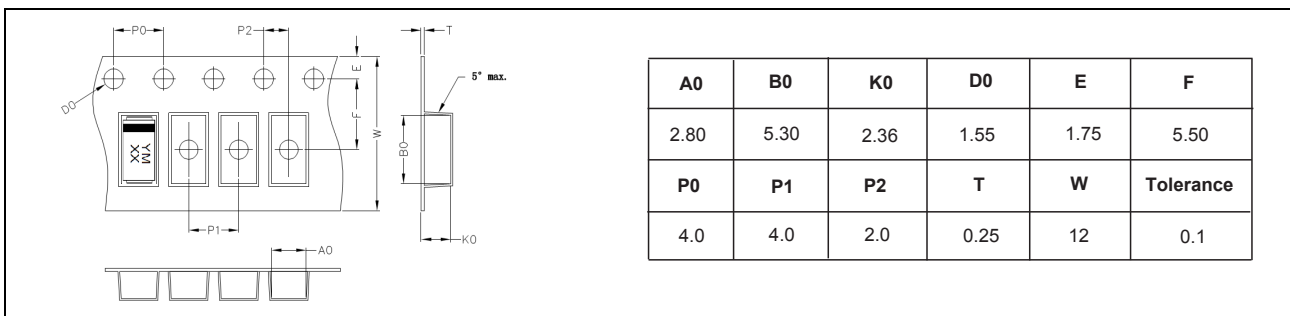
Package Dimensions



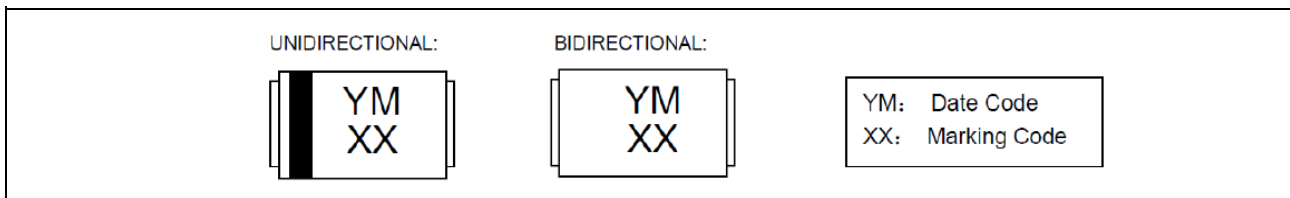
PAD Dimensions



Packing Information



Marking



Ordering information

Order code	Package	Packaging option	Base quantity	Packaging specification
SMA6J Series	DO-214AC/SMA	Tape and reel	7500pcs / reel	EIA STD RS-481

Revision history

Date	Revision	Changes
7-Dec.-2023	4.0	Update