Silicon Avalanche Diodes

600W Surface Mount Transient Voltage Supressors

RoHS P6SMBJ Series

FEATURES

- RoHS compliant
- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low lead inductance
- Excellent clamping capability
- Repetition Rate (duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0 Volts to BV for unidirectional types
- Typical IR less than 1 µmA above 10V
- High Temperature soldering: 250˚C/10 seconds at terminals

Agency Approvals: Recognized under the Components Program of Underwriters Laboratories.

Agency File Number: E128662

MAXIMUM RATINGS AND CHARACTERISTICS @25˚C AMBIENT TEMPERATURE (unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power Dissipation on 10\1000µs waveform (note 1,2, FIG.1)	P_{PPM}	Min 600	Watts
Peak pulse current of on 10\1000µs waveform (note 1, FIG.3)	I_{PPM}	SEE TABLE 1	Amps
Peak forward Surge Current, 8.3ms Single Half SIne Wave Superimposed on Rated Load, (JEDEC Method) (note 2.3)	I_{PSM}	100	Amps
Operating junction and Storage Temperature Range	T_j, T_{STG}	-55 to +150	°C

Note 1. Non-repetitive current pulse, per Fig.3 and derated above T_A= 25˚C per Fig.2
Note 2. Mounted on 5.0mm^2(0.03mm thick) Copper Pads to each terminal
Note 3. 8.3 ms single half sine-wave, or equivalent square wave, Duty cycle= 4 pulses per minute

ORDERING INFORMATION

P6SMBJ | | | | C | A |

Voltage

Bi-Directional

5% Voltage Tolerance

Tape and reeled (3000 pcs)

Mechanical Specifications:

Weight: 0.003ounce, 0.093 gram
Case: JEDEC DO-214AA Molded Plastic over glass passivated junction
Mounting Position: Any
Polarity: Color band denotes cathode except Bidirectional
Terminal: Solder Plated solderable per MIL-STD-750, Method 2026
Standard Packaging: 12mm tape (EIA STF RS-481)

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ELECTRICAL SPECIFICATION @ Tamb 25°C

Part Number (Uni)	Part Number (Bi)	Device Marking Code		Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts) @ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (Volts)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_R (µA)
		UNI	BI		MIN	MAX				
P6SMBJ6.8A	P6SMBJ6.8CA	6V8A	6V8CA	5.80	6.45	7.14	10	10.5	58.1	1000
P6SMBJ7.5A	P6SMBJ7.5CA	7V5A	7V5CA	6.40	7.13	7.88	10	11.3	54.0	500
P6SMBJ8.2A	P6SMBJ8.2CA	8V2A	8V2CA	7.02	7.79	8.61	10	12.1	50.4	200
P6SMBJ9.1A	P6SMBJ9.1CA	9V1A	9V1CA	7.78	8.65	9.55	1	13.4	45.5	50
P6SMBJ10A	P6SMBJ10CA	10A	10CA	8.55	9.50	10.50	1	14.5	42.1	10
P6SMBJ11A	P6SMBJ11CA	11A	11CA	9.40	10.50	11.60	1	15.6	39.1	5
P6SMBJ12A	P6SMBJ12CA	12A	12CA	10.20	11.40	12.60	1	1	36.5	5
P6SMBJ13A	P6SMBJ13CA	13A	13CA	11.10	12.40	13.70	1	18.2	3	5
P6SMBJ15A	P6SMBJ15CA	15A	15CA	12.80	14.30	15.80	1	21.2	.8	5
P6SMBJ16A	P6SMBJ16CA	16A	16CA	13.60	15.20	16.80	1	22.5	27.1	5
P6SMBJ18A	P6SMBJ18CA	18A	18CA	15.30	17.10	18.90	1	.5	24.2	5
P6SMBJ20A	P6SMBJ20CA	20A	20CA	17.10	19.00	21.00		2	22.0	5
P6SMBJ22A	P6SMBJ22CA	22A	22CA	18.80	20.90	23.10	1	30.6	19.9	5
P6SMBJ24A	P6SMBJ24CA	24A	24CA	20.50	22.80	25.20	1	33.2	18.4	5
P6SMBJ27A	P6SMBJ27CA	27A	27CA	23.10	25.70	28.40		37.5	16.3	5
P6SMBJ30A	P6SMBJ30CA	30A	30CA	25.60	28.50	31.50	1	41.4	14.7	5
P6SMBJ33A	P6SMBJ33CA	33A	33CA	28.20	31.40	4.70	1	45.7	13.3	5
P6SMBJ36A	P6SMBJ36CA	36A	36CA	30.80	34.20	0	1	49.9	12.2	5
P6SMBJ39A	P6SMBJ39CA	39A	39CA	33.30	3	41.	1	53.9	11.3	5
P6SMBJ43A	P6SMBJ43CA	43A	43CA	36.80	0.90	5.20	1	59.3	10.3	5
P6SMBJ47A	P6SMBJ47CA	47A	47CA	40.20	44.70	.40	1	64.8	9.4	5
P6SMBJ51A	P6SMBJ51CA	51A	51CA	43.60	48.50	60	1	70.1	8.7	5
P6SMBJ56A	P6SMBJ56CA	56A	56CA	4	0	3.80	1	77.0	7.9	5
P6SMBJ62A	P6SMBJ62CA	62A	62CA	.00	58.	65.10	1	85.0	7.2	5
P6SMBJ68A	P6SMBJ68CA	68A	68CA	8.1	4.60	71.40	1	92.0	6.6	5
P6SMBJ75A	P6SMBJ75CA	75A	75CA		1.30	78.80	1	103.0	5.9	5
P6SMBJ82A	P6SMBJ82CA	82A	8	70.1	7.90	86.10	1	113.0	5.4	5
P6SMBJ91A	P6SMBJ91CA	91A	1CA	77.8	86.50	95.50	1	125.0	4.9	5
P6SMBJ100A	P6SMBJ100CA	100A	0C	5	95.00	105.00	1	137.0	4.5	5
P6SMBJ110A	P6SMBJ110CA	110A	R	0	105.00	116.00	1	152.0	4.0	5
P6SMBJ120A	P6SMBJ120CA		120	02.00	114.00	126.00	1	165.0	3.7	5
P6SMBJ130A	P6SMBJ130CA	130A	0CA	111.00	124.00	137.00	1	179.0	3.4	5
P6SMBJ150A	P6SMBJ150CA	150A	CA	128.00	143.00	158.00	1	207.0	2.9	5
P6SMBJ160A	P6SMBJ160CA	60A	0CA	136.00	152.00	168.00	1	219.0	2.8	5
P6SMBJ170A	P6SMBJ170CA		70CA	145.00	162.00	179.00	1	234.0	2.6	5
P6SMBJ180A	P6SMBJ180CA	180A	180CA	154.00	171.00	189.00	1	246.0	2.5	5
P6SMBJ200A	P6SMBJ200CA	200A	200CA	171.00	190.00	210.00	1	274.0	2.2	5
P6SMBJ220A	P6SMBJ220CA	220A	220CA	185.00	209.00	231.00	1	328.0	1.9	5
P6SMBJ250A	P6SMBJ250CA	250A	250CA	214.00	237.00	263.00	1	344.0	1.8	5
P6SMBJ300A	P6SMBJ300CA	300A	300CA	256.00	285.00	315.00	1	414.0	1.5	5
P6SMBJ350A	P6SMBJ350CA	350A	350CA	300.00	332.00	368.00	1	482.0	1.3	5
P6SMBJ400A	P6SMBJ400CA	400A	400CA	342.00	380.00	420.00	1	548.0	1.1	5
P6SMBJ440A	P6SMBJ440CA	440A	440CA	376.00	418.00	462.00	1	602.0	1.0	5
P6SMBJ480A	P6SMBJ480CA	480A	480CA	408.00	456.00	504.00	1	658.0	0.9	5
P6SMBJ510A	P6SMBJ510CA	510A	510CA	434.00	485.00	535.00	1	698.0	0.9	5
P6SMBJ530A	P6SMBJ530CA	530A	530CA	477.00	503.50	556.50	1	725.0	0.8	5
P6SMBJ540A	P6SMBJ540CA	540A	540CA	459.00	513.00	567.00	1	740.0	0.8	5
P6SMBJ550A	P6SMBJ550CA	550A	550CA	495.00	522.50	577.50	1	760.0	0.8	5

OBSOLETE

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.
For parts without A (VBR is ± 10%).

RoHS P6SMBJ Series

Ratings and Characteristic Curves T_A=25˚C unless otherwise noted

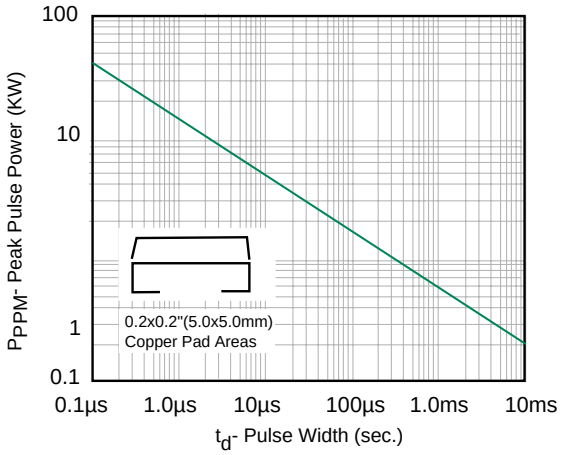

Fig. 1 Peak Pulse Power Rating

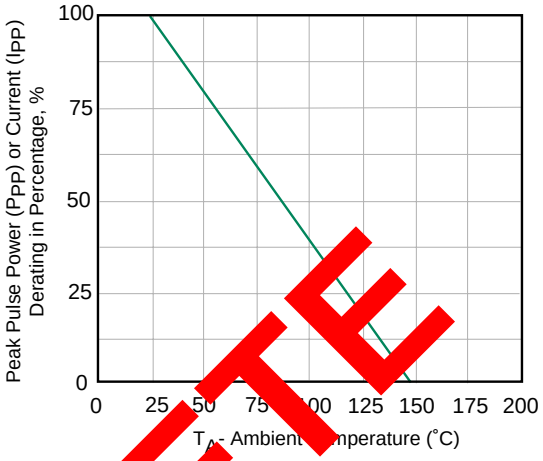

Fig. 2 Pulse Derating Curve

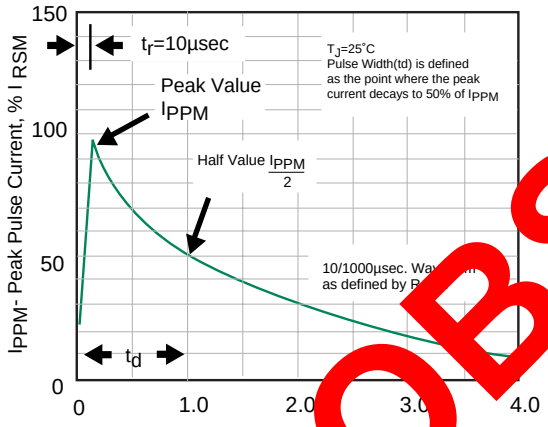

Fig. 3 Pulse Wa[illegible]

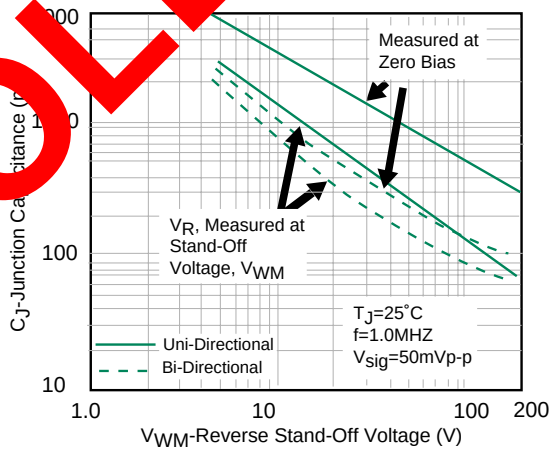

Fig. 4- Typical Junction Capacitance

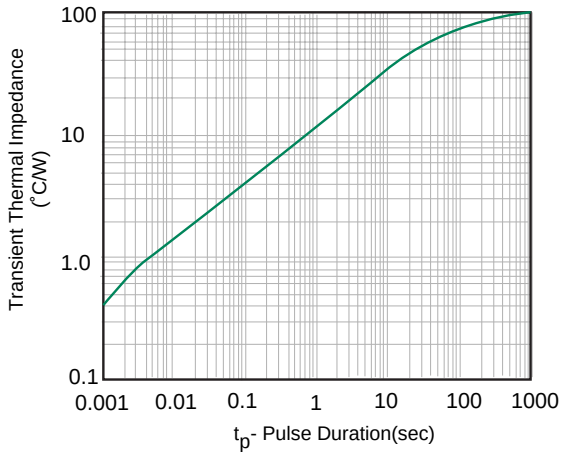

Fig. 5- Typ. Transient Thermal Impedance

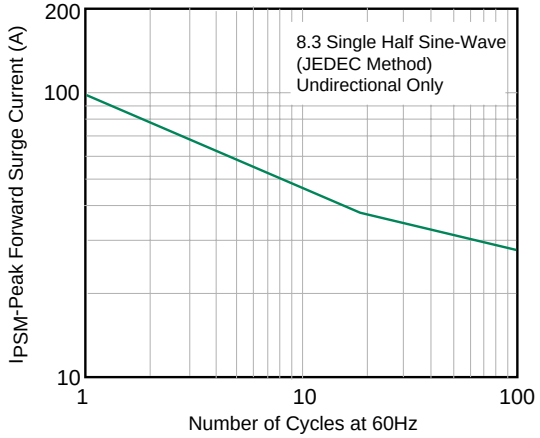

Fig. 6- Maximum Non-Repetitive Peak Forward Surge Current

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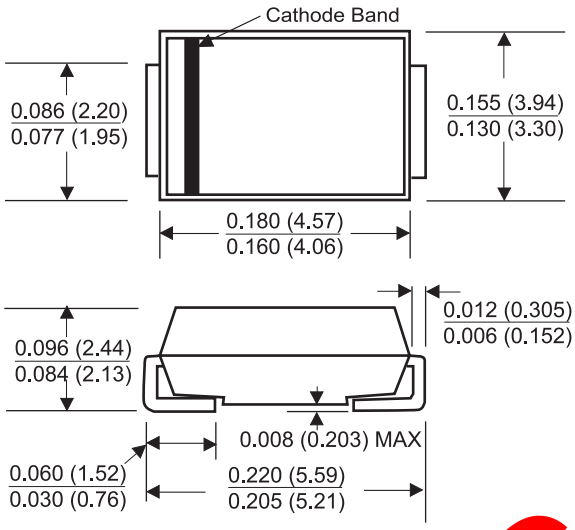
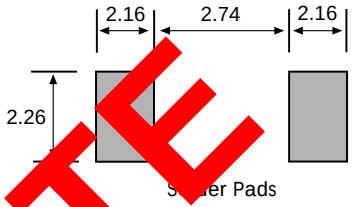
Package Outline Dimensions and Pad Layout

DO-214AA (SMB J-Bend)



Dimensions in inches and (millimeters



dimensions in mm