

HIGH CURRENT DISCRETE TVS

APPLICATIONS

- General Power Bus Protection
- UPS Power Switches
- DC Board Level Protection
- Industrial & Commercial Power Circuits

FEATURES

- 3,000 Watts Peak Pulse Power Dissipation (10/1000 μ s)
- Available in Numerous Voltage Types Ranging from 5.0V to 170V
- Unidirectional & Bidirectional Device Types
- Low Inductance
- UL 94V-0 Flammability Classification

3,000 WATTS



DO-214AB PACKAGE

MAXIMUM RATINGS

- 3,000 Watts Peak Pulse Dissipation @25°C (See Figure 1)
- Operating & Storage Temperature: -55°C to 150°C
- Forward Surge Rating: 200A, 1/20 seconds @25°C, Unidirectional Only
- Steady State Power Dissipation: 5.0W $T_L = 75^\circ\text{C}$
- Repetition Rate (Duty Cycle): 0.01%
- t_{Clamping} (0 Volts to V_{BR}) min: Unidirectional $< 1 \times 10^{-12}$ seconds Bidirectional $< 10 \times 10^{-9}$ seconds

Discrete TVS Components

MECHANICAL CHARACTERISTICS

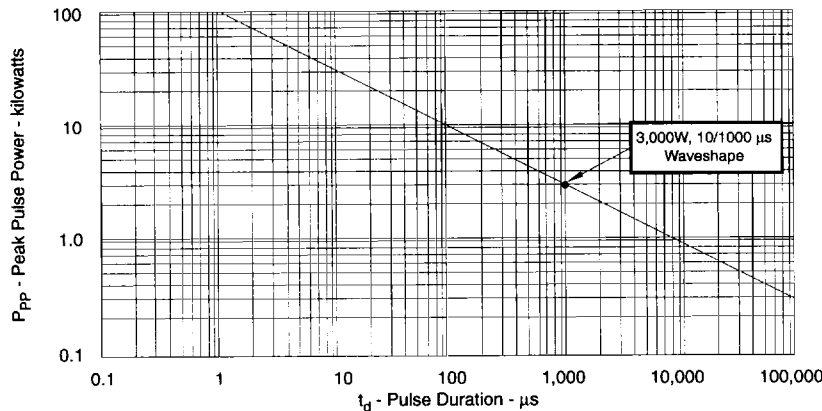
- Package: Molded Surface Mount
- Packaging: 16mm Tape per EIA Std.
- Approximate Weight: 4 grams
- Positive Terminal Marked with Polarity Band (except Bidirectional) or notch (Top Surface)
- Body Marked with Logo & Type Code

DESCRIPTION

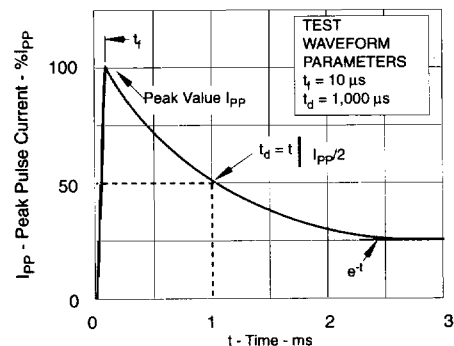
The SMDJ family is a series of transient voltage suppressors (TVS) designed for use in applications where large voltage transients can permanently damage sensitive components.

The SMDJ series has a peak pulse power rating of 3,000 Watts for an 10/1000 μ s waveshape. This series is available in voltages ranging from 5.0 Volts to 170 Volts.

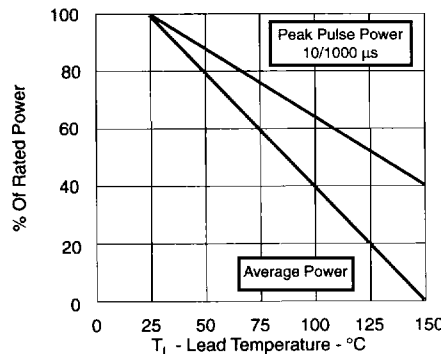
**FIGURE 1
 PEAK PULSE POWER VS PULSE TIME**



**FIGURE 2
 PULSE WAVE FORM**



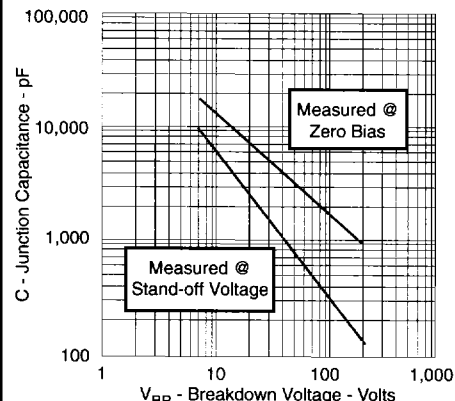
**FIGURE 3
 POWER DERATING CURVE**



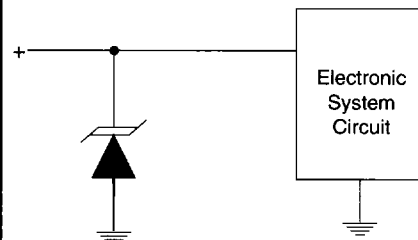
ELECTRICAL CHARACTERISTICS @ 25° C Ambient Temperature

PROTEK PART NUMBER (See Note 1 & Note 2)	DEVICE MARKING CODE		RATED STAND-OFF VOLTAGE V_{WM} VOLTS	BREAKDOWN VOLTAGE		MAXIMUM LEAKAGE CURRENT @ V_{WM} I_D μA	MAXIMUM CLAMPING VOLTAGE @ $I_P = 1 A$ V_C VOLTS	MAXIMUM PEAK PULSE CURRENT @ I_{PP} I_{PPM} AMPS	MAXIMUM TEMPERATURE COEFFICIENT OF $V_{(BR)}$ $\Theta V_{(BR)}$ mV/°C
	See Note 3	See Note 4		MIN $V_{(BR)}$ VOLTS	@ I_T mA				
	P SMDJ5.0	RDD		DDD	5.0				
P SMDJ5.0A	RDE	DDE	5.0	6.40	10	1000	9.2	326.0	5.0
P SMDJ6.0	RDF	DDF	6.0	6.67	10	1000	11.4	263.2	5.0
P SMDJ6.0A	RDG	DDG	6.0	6.67	10	1000	10.3	291.3	5.0
SMDJ6.5	RDH	DDH	6.5	7.22	10	500	12.3	243.9	5.0
SMDJ6.5A	RDK	DDK	6.5	7.22	10	500	11.2	267.9	5.0
SMDJ7.0	PDL	DDL	7.0	7.78	10	200	13.3	225.6	6.0
SMDJ7.0A	PDM	DDM	7.0	7.78	10	200	12.0	250.0	6.0
SMDJ7.5	PDN	DDN	7.5	8.33	1	100	14.3	209.8	7.0
SMDJ7.5A	PDP	DDP	7.5	8.33	1	100	12.9	232.6	7.0
P SMDJ8.0	PDQ	DDQ	8.0	8.89	1	50	15.0	200.0	7.0
P SMDJ8.0A	PDR	DDR	8.0	8.89	1	50	13.6	220.6	7.0
SMDJ8.5	PDS	DDS	8.5	9.44	1	25	15.9	188.6	8.0
SMDJ8.5A	PDT	DDT	8.5	9.44	1	25	14.4	208.4	8.0
SMDJ9.0	PDU	DDU	9.0	10.0	1	10	16.9	177.4	9.0
SMDJ9.0A	PDV	DDV	9.0	10.0	1	10	15.4	194.8	9.0
P SMDJ10	PDW	DDW	10	11.1	1	5	18.8	159.6	10
P SMDJ10A	PDX	DDX	10	11.1	1	5	17.0	176.4	10
SMDJ11	PDY	DDY	11	12.2	1	5	20.1	149.2	11
SMDJ11A	PDZ	DDZ	11	12.2	1	5	18.2	164.8	11
P SMDJ12	PED	DED	12	13.3	1	5	22.0	136.4	12
P SMDJ12A	PEE	DEE	12	13.3	1	5	19.9	150.6	12
SMDJ13	PEF	DEF	13	14.4	1	5	23.8	126.0	13
SMDJ13A	PEG	DEG	13	14.4	1	5	21.5	139.4	13
SMDJ14	PEH	DEH	14	15.6	1	5	25.8	116.2	14
SMDJ14A	PEK	DEK	14	15.6	1	5	23.2	129.4	14
P SMDJ15	PEL	DEL	15	16.7	1	5	26.9	111.6	16
P SMDJ15A	PEM	DEM	15	16.7	1	5	24.4	123.0	16
SMDJ16	PEN	DEN	16	17.8	1	5	28.8	104.2	19
SMDJ16A	PEP	DEP	16	17.8	1	5	26.0	115.4	17
SMDJ18	PES	DES	18	20.0	1	5	32.2	93.2	21
SMDJ18A	PET	DET	18	20.0	1	5	29.9	102.8	20
P SMDJ20	PEU	DEU	20	22.2	1	5	35.8	83.8	25
P SMDJ20A	PEV	DEV	20	22.2	1	5	32.4	92.6	23
P SMDJ24	PEY	DEY	24	26.7	1	5	43.0	69.8	31
P SMDJ24A	PEZ	DEZ	24	26.7	1	5	38.9	77.2	28
P SMDJ26	PFD	DFD	26	28.9	1	5	46.6	64.4	31
P SMDJ26A	PFE	DFE	26	28.9	1	5	42.1	71.2	30
P SMDJ28	PFF	DFE	28	31.1	1	5	50.0	60.0	35
P SMDJ28A	PFG	DFG	28	31.1	1	5	45.4	66.0	31
SMDJ30	PFH	DFH	30	33.3	1	5	53.5	56.0	39
SMDJ30A	PFK	DFK	30	33.3	1	5	48.4	62.0	36
SMDJ33	PFL	DFL	33	36.7	1	5	59.0	50.4	42
SMDJ33A	PFM	DFM	33	36.7	1	5	53.3	56.2	39
P SMDJ36	PFN	DFN	36	40.0	1	5	64.3	46.6	46
P SMDJ36A	PFQ	DFQ	36	40.0	1	5	58.1	51.6	41
SMDJ40	PFQ	DFQ	40	44.4	1	5	71.4	42.0	51
SMDJ40A	PFR	DFR	40	44.4	1	5	64.5	46.4	46
SMDJ43	PFS	DFS	43	47.8	1	5	76.7	39.2	55
SMDJ43A	PFT	DFS	43	47.8	1	5	69.4	43.2	50
SMDJ45	PFU	DFU	45	50.0	1	5	80.3	37.4	58
SMDJ45A	PFV	DFV	45	50.0	1	5	72.7	41.2	52
SMDJ48	PFW	DFW	48	53.3	1	5	85.5	35.0	63
SMDJ48A	PFX	DFX	48	53.3	1	5	77.4	38.8	56
SMDJ54	RGC	DGD	54	60.0	1	5	96.3	31.2	71
SMDJ54A	RGE	DGE	54	60.0	1	5	87.1	34.4	65
P SMDJ58	PGF	DGF	58	64.4	1	5	103.0	29.2	78
P SMDJ58A	PGG	DGG	58	64.4	1	5	93.6	32.0	70
SMDJ60	PGH	DGH	60	66.7	1	5	107.0	28.0	80
SMDJ60A	PGK	DGK	60	66.7	1	5	96.8	31.0	71
SMDJ64	PGL	DGL	64	71.1	1	5	114.0	26.4	86
SMDJ64A	PGM	DGM	64	71.1	1	5	103.0	29.2	78
SMDJ70	PGN	DGN	70	77.8	1	5	125.0	24.0	94
SMDJ70A	PGP	DGP	70	77.8	1	5	113.0	26.6	85
SMDJ78	PGS	DGS	78	86.7	1	5	139	21.6	105
SMDJ78A	PGT	DGT	78	86.7	1	5	126	22.8	95
SMDJ85	PGU	DGU	85	94.4	1	5	151	19.8	114
SMDJ85A	PGV	DGV	85	94.4	1	5	137	20.8	103
P SMDJ90	PGW	DGW	90	100	1	5	160	18.8	121
P SMDJ90A	PGX	DGX	90	100	1	5	146	20.6	110
SMDJ100	PGY	DGY	100	111	1	5	179	16.8	135
SMDJ100A	PGZ	DGZ	100	111	1	5	162	18.6	123
SMDJ110	PHD	DHD	110	122	1	5	196	15.4	148
SMDJ110A	PHE	DHE	110	122	1	5	177	16.8	133
SMDJ120	PHF	DHF	120	133	1	5	214	14.0	162
SMDJ120A	PHG	DHG	120	133	1	5	193	15.6	146
P SMDJ130	PHH	DHH	130	144	1	5	231	13.0	175
P SMDJ130A	PHK	DHK	130	144	1	5	209	14.4	158
SMDJ150	PHL	DHL	150	167	1	5	268	11.2	203
SMDJ150A	PHM	DHM	150	167	1	5	243	12.4	184
P SMDJ160	PHN	DHN	160	178	1	5	287	10.4	217
P SMDJ160A	PHP	DHP	160	178	1	5	259	11.6	196
P SMDJ170	PHQ	DHQ	170	189	1	5	304	9.8	230
P SMDJ170A	PHR	DHR	170	189	1	5	275	11.0	208

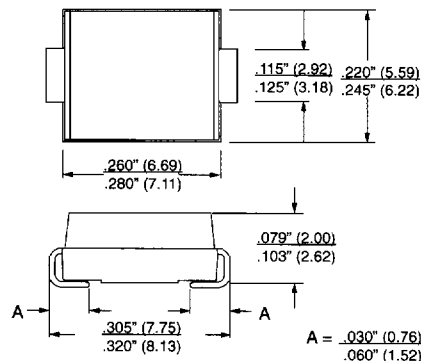
FIGURE 4
TYPICAL CAPACITANCE Vs
BREAKDOWN VOLTAGE
(Unidirectional Only)



DC POWER SUPPLY APPLICATION



DO-214AB PACKAGE DIMENSIONS



Measurements are in inches, (mm) denotes millimeters

NOTES

Note 1: P = Preferred part. For preferred parts and bidirectional devices, consult factory for minimum order quantity and delivery. Part numbers shown are unidirectional devices. Add "C" or "CA" suffix to specify bidirectional devices, such as SMDJ5.0C or SMDJ5.0CA.

Note 2: $V_F = 3.5V @ 100A, 8.3 ms$ sine wave (Unidirectional)

Note 3: Unidirectional Marking Code.

Note 4: Bidirectional Marking Code.

Note 5: For bidirectional types 10 Volts and under, the I_D limits is doubled.