Description

The SDP series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

DO214AB

Features

- 6000W peak pulsepower capability at 10 x 1000μs waveform, repetition rate (duty cycle): 0.01%
- Glass Passivated chip junction
- For surface mounted applications to optimize board space
- AEC-Q101 qualified
- Low profile package
- Built-in strain relief
- Low incremental surge resistance
- Excellent clamping capability
- Plastic package has UL flammability classification 94V-O
- Fast response time: typically less than 1.0ps from 0 Volts to BV min
- Typical IR less than 5uA above 22V
- High temperature soldering: 260°C/40 seconds at terminals
- IEC-61000-4-2 ESD 15KV(Air),8KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2(IEC801-2)
- EFT protection of data lines in accordance with IEC61000-4-4(IEC801-4)

IEC Compatibility

- ISO 16750-2 Test A 12v System (87V 2Ω 150ms 10c)

Applications

- Auto powers system

Maximum Ratings and Electrical Characteristics

(TA=25℃ unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25℃ by 10x1000μs waveform (Fig.2) (Note 1) (Note 2)	P_{PPM}	6000	W
Power Dissipation on infinite heat sink at TA=50℃	P_D	6.5	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only(Note 3)	I_{FSM}	500	A
Maximum Instantaneous Forward Voltage at 100A for Unidirectional only	V_F	3.5V/5.0	V
Operating Junction and Storage Temperature Range	T_J, T_{STG}	-55 to ＋150	℃
Typical Thermal Resistance Junction to Lead	R_{uJL}	15	℃/W
Typical Thermal Resistance Junction to Ambient	R_{uJA}	75	℃/W

Notes:

1. Non-repetitive current pulse, per Fig.3and derated above TA=25℃ per Fig. 2.

2. Mounted on copper pad area of 0.31x0.31” (8.0 x 8.0mm) to each terminal.

3. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum.

Electrical Characteristics

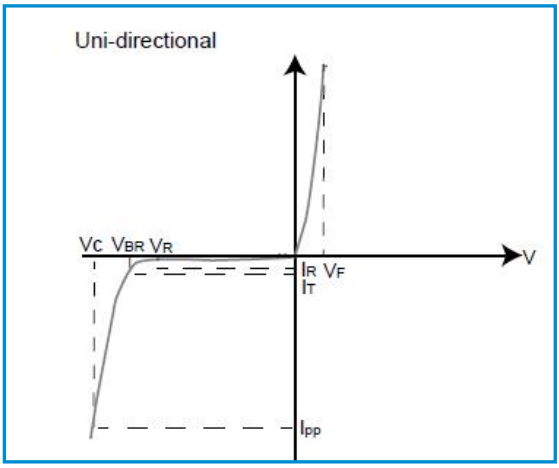
Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage V_{BR} @I_T		Test Current	Reverse Leakage @V_{RWM}	Peak Pulse Current	Maximum Clamping Voltage@I_{PP}
Uni-polar	Bi-Polar	Uni	Bi	V_{RWM} (V)	V_{BR} Min(V)	V_{BR} Max(V)	I_T (mA)	I_R (μA)	I_{PP} (A)	V_C (V)
SDP17A	SDP17CA	6SAT	6DAT	17.0	18.90	20.90	5	5	217.4	27.6
SDP18A	SDP18CA	6SAV	6DAV	18.0	20.00	22.10	5	5	205.5	29.2
SDP20A	SDP20CA	6SAZ	6DAZ	20.0	22.20	24.50	5	5	185.2	32.4
SDP22A	SDP22CA	6SBE	6DBE	22.0	24.40	26.90	5	5	169.0	35.5
SDP24A	SDP24CA	6SBF	6DBF	24.0	26.70	29.50	5	5	154.2	38.9
SDP26A	SDP26CA	6SBG	6DBG	26.0	28.90	31.90	5	5	142.5	42.1
SDP28A	SDP28CA	6SBK	6DBK	28.0	31.10	34.40	5	5	132.2	45.4
SDP30A	SDP30CA	6SBM	6DBM	30.0	33.30	36.80	5	5	124.0	48.4
SDP33A	SDP33CA	6SBP	6DBP	33.0	36.70	40.60	5	5	112.6	53.3
SDP36A	SDP36CA	6SBR	6DBR	36.0	40.00	44.20	5	5	103.3	58.1
SDP40A	SDP40CA	6SBT	6DBT	40.0	44.40	49.10	5	5	93.0	64.5
SDP43A	SDP43CA	6SBV	6DBV	43.0	47.80	52.80	5	5	86.5	69.4
SDP45A	SDP45CA	6SBX	6DBX	45.0	50.00	55.30	5	5	82.5	72.7
SDP48A	SDP48CA	6SBZ	6DBZ	48.0	53.30	58.90	5	5	77.5	77.4
SDP51A	SDP51CA	6SCE	6DCE	51.0	56.70	62.70	5	5	72.8	82.4
SDP54A	SDP54CA	6SCF	6DCF	54.0	60.00	66.30	5	5	68.9	87.1
SDP58A	SDP58CA	6SCG	6DCG	58.0	64.40	71.20	5	5	64.1	93.6
SDP60A	SDP60CA	6SCK	6DCK	60.0	66.70	73.70	5	5	62.0	96.8
SDP64A	SDP64CA	6SCM	6DCM	64.0	71.10	78.60	5	5	58.3	103.0
SDP70A	SDP70CA	6SCP	6DCP	70.0	77.80	86.00	5	5	53.1	113.0
SDP75A	SDP75CA	6SCR	6DCR	75.0	83.30	92.10	5	5	49.6	121.0
SDP78A	SDP78CA	6SCT	6DCT	78.0	86.70	95.80	5	5	47.6	126.0
SDP80A	SDP80CA	6SCV	6DCV	80.0	88.80	97.60	5	5	46.3	129.6
SDP85A	SDP85CA	6SCX	6DCX	85.0	94.40	104.00	5	5	43.8	137.0

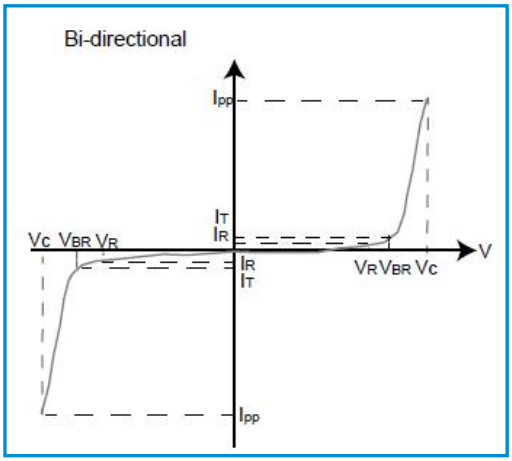
Notes:

For bidirectional type having VRWM of 20 volts and less, the IR limit is double.

For parts without A (VBR is ± 10% and VC is 5% higher than A parts

I-V Curve Characteristics





Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

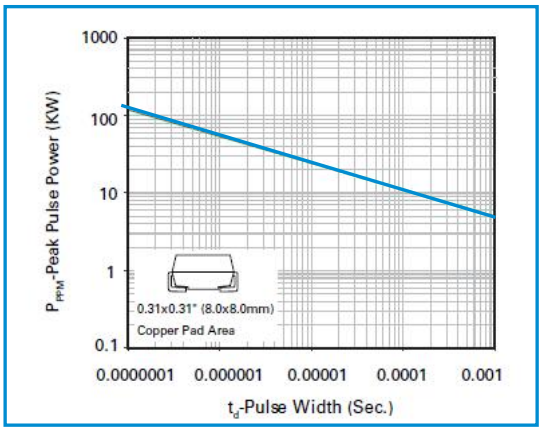
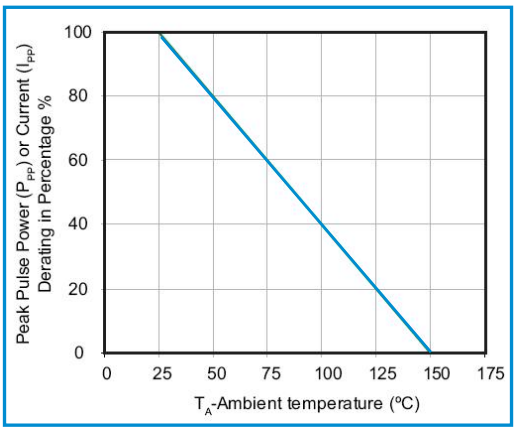


Figure 2 - Pulse Derating Curve



Figu re 3 - Pulse Waveform

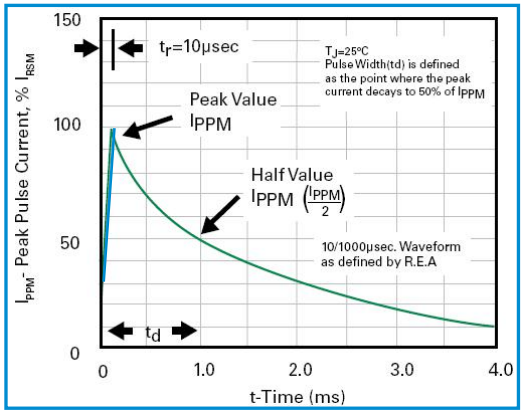
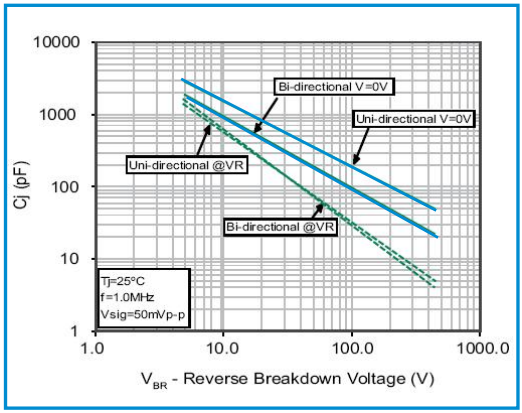


Figure 4 - Typical Junction Capacitance



Ratings and Characteristic Curves (TA=25°C unless otherwise noted)

Figure 5 - Steady State Power Dissipation Derating Curve

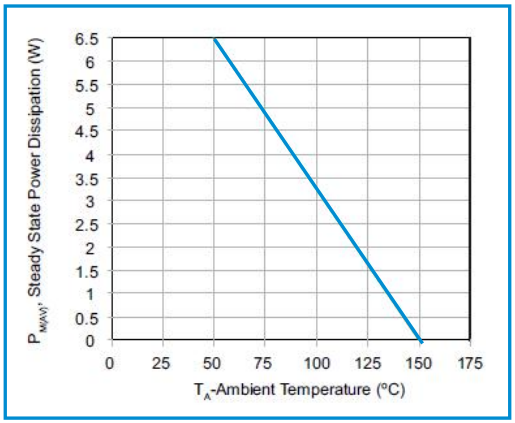
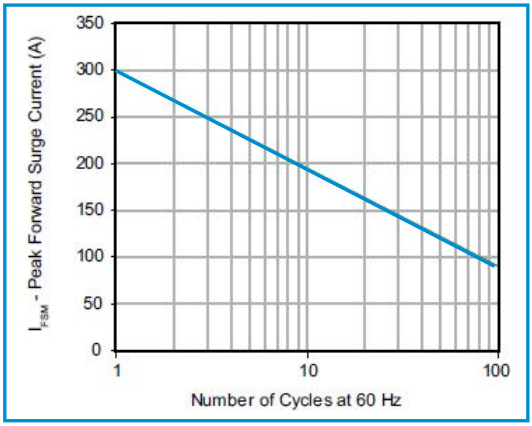


Figure 6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

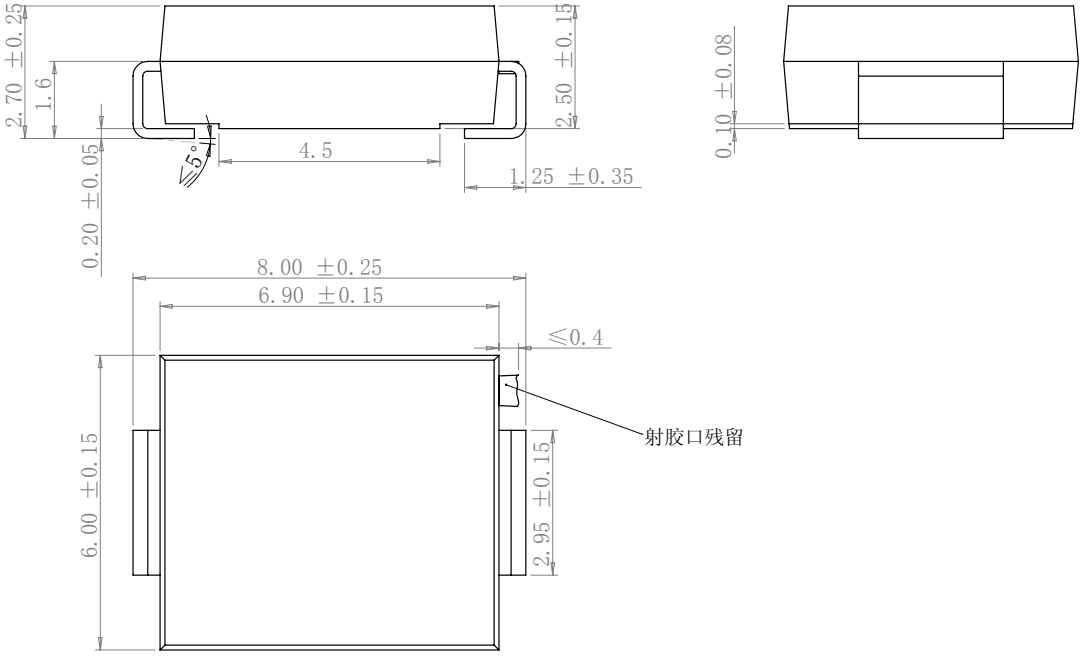


Part Numbering System

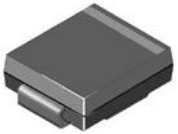
SDP	XXX	C	A
(1)	(2)	(3)	(4)

(1) SERIES.
(2) V_R VOLTAGE.
(3) BI-DIRECTIONAL.
(4) 5% VOLTAGE TOLERANCE.

Product Dimensions



Summary of Packing Options

Package Type	Packaging Option	Packing Quantity	Industry Standard
DO-214AB(SMC) 	Tape&Reel-16mm/13”tape	3000PCS	EIA STD RS-481