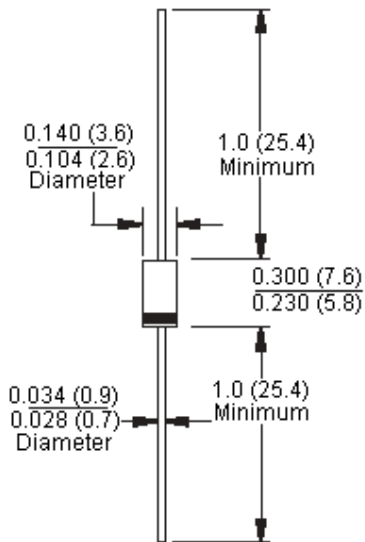




## Features:

- Plastic package.
- 500W surge capability at 10 x 1000 $\mu$ s waveform, duty cycle: 0.01%.
- Excellent clamping capability.
- Low zener impedance.
- Fast response time: typically less than 1.0ps from 0 volts to VBR for unidirectional and 5.0 ns for bidirectional.
- Typical  $I_R$  less than 1 $\mu$ A above 10V.
- High temperature soldering guaranteed: 260°C/10 seconds/0.375 Inch (9.5mm) lead length/5lbs. (2.3kg) tension.

## DO-15



Dimensions : Inches (Millimetres)

## Mechanical Data

Case : Molded plastic.  
 Lead : Pure tin plated lead free, solderable per MIL-STD-202, Method 208.  
 Polarity : Color band denotes cathode except bipolar.  
 Weight : 0.34 gram.

## Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Type Number	Symbol	Value	Units
Peak Power Dissipation at $T_A = 25^\circ\text{C}$ , $T_p = 1\text{ms}$ (Note 1)	$P_{PK}$	Minimum 500	Watts
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$ Lead Lengths 0.375 Inch 9.5mm (Note 2)	$P_D$	3.0	
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (Note 3)	$I_{FSM}$	70	Amps
Maximum Instantaneous Forward Voltage at 35.0A for Unidirectional Only	$V_F$	3.5	Volts
Operating and Storage Temperature Range	$T_J, T_{STG}$	-55 to + 175	$^\circ\text{C}$

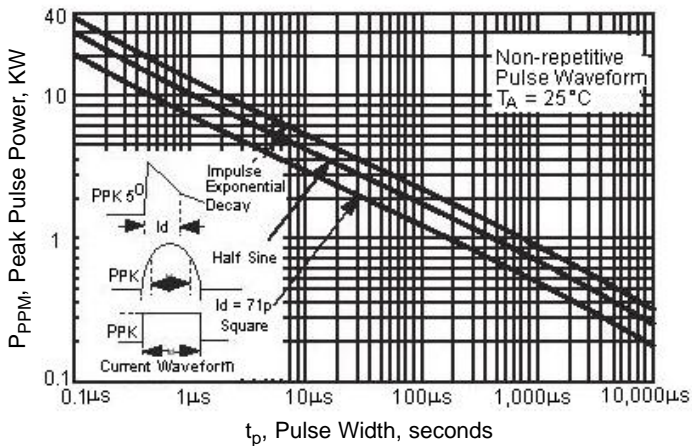
- Notes:
1. Non-repetitive current pulse and derated above  $T_A = 25^\circ\text{C}$ .
  2. Mounted on copper pad area of 1.6 x 1.6 Inch (40 x 40 mm).
  3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minutes maximum.

Devices for bipolar applications

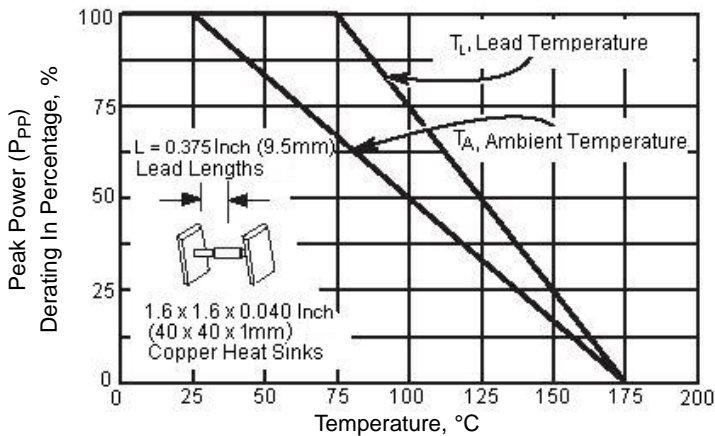
1. For bidirectional use C or CA suffix for types SA5.0 through types SA170.
2. Electrical characteristics apply in both directions.

## Ratings and Characteristic Curves

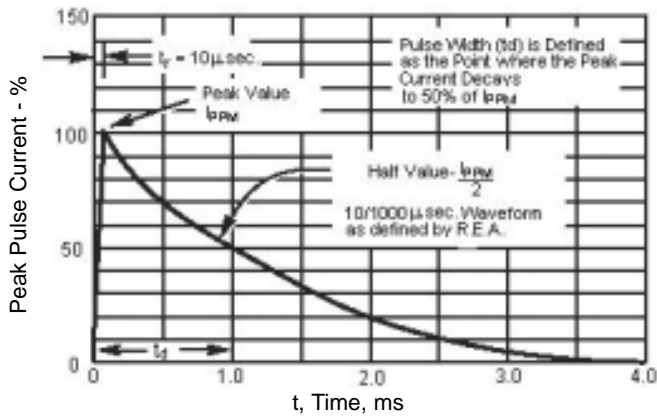
Peak Pulse Power Rating Curve



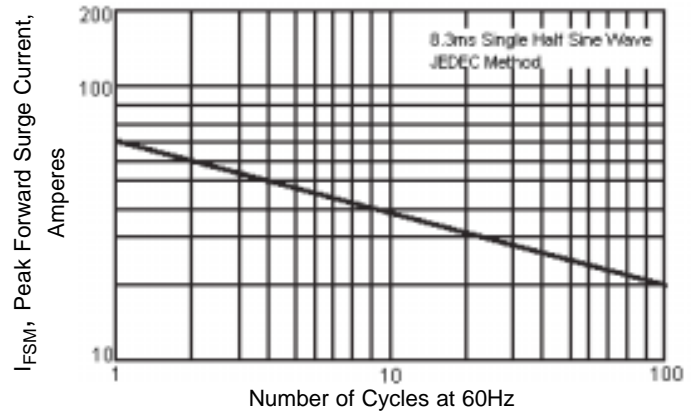
Power Derating Curve



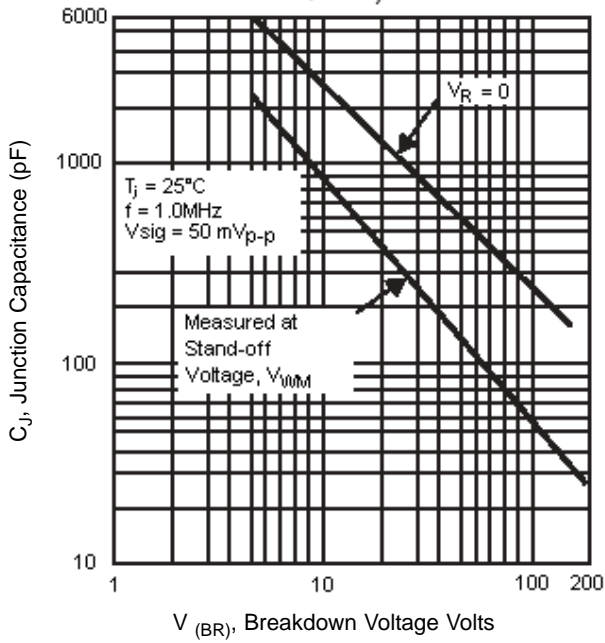
Clamping Power Pulse Waveform



Maximum Non-Repetitive Forward Surge Current Unidirectional Only



Typical Junction Capacitance (Unidirectional)



## Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Device		Breakdown Voltage		Test Current at $I_T$ (mA)	Stand-Off Voltage $V_{WM}$ (Volts)	Maximum Reverse Leakage at $V_{WM}$ $I_D$ ( $\mu\text{A}$ )	Maximum Peak Pulse Current $I_{PPM}$ (Note 2) (Amps)	Maximum Clamping Voltage at $I_{PPM}$ $V_C$ (Volts)	Maximum Temperature Coefficient of $V_{BR}$ (mV/ $^\circ\text{C}$ )	
		$V_{BR}$ (Volts) (Note 1)								
Unidirectional	Bidirectional	Minimum	Maximum							
SA100A	SA100CA	111.0	123.0	1.0	100.0	1.0	3.2	162.0	123.0	
SA10A	SA10CA	11.1	12.3		10.0		30.0	17.0	10.0	
SA120A	SA120CA	133.0	147.0		120.0		2.7	193.0	146.0	
SA13A	SA13CA	14.4	15.9		13.0		24.0	21.5	13.0	
SA150A	SA150CA	167.0	185.0		150.0		2.1	243.0	184.0	
SA16A	SA16CA	17.8	19.7		16.0		20.0	26.0	17.0	
SA18A	SA18CA	20.0	22.1		18.0		17.9	29.2	20.0	
SA20A	SA20CA	22.2	24.5		20.0		16.0	32.4	23.0	
SA22A	SA22CA	24.4	26.9		22.0		14.7	35.5	25.0	
SA28A	SA28CA	31.1	34.4		28.0		11.5	45.4	31.0	
SA33A	SA33CA	36.7	40.6		33.0		9.8	53.3	39.0	
SA36A	SA36CA	40.0	44.2		36.0		9.0	58.1	41.0	
SA48A	SA48CA	53.3	58.9		48.0		6.7	77.4	56.0	
SA51A	SA51CA	56.7	62.7		51.0		6.3	82.4	61.0	
SA6.5A	SA6.5CA	7.22	7.98		6.5		400.0	46.0	11.2	5.0
SA7.0A	SA7.0CA	7.78	8.60		7.0		150.0	43.0	12.0	6.0
SA7.5A	SA7.5CA	8.33	9.21		7.5		50.0	40.0	12.9	7.0
SA75A	SA75CA	88.3	92.1		75.0		1.0	4.3	121.0	91
SA8.0A	SA8.0CA	8.89	9.83		8.0		25.0	38.0	13.6	7.0
SA9.0A	SA9.0CA	10.0	11.1		9.0	5.0	34.0	15.4	9.0	

### Notes:

- $V_{BR}$  measured after  $I_T$  applied for  $300\mu\text{s}$ ,  $I_T$  = square wave pulse or equivalent.
- Surge current waveform per Figure 3 and derate per Figure 2.
- For bipolar types with  $V_{WM}$  of 10 Volts and under, the  $I_D$  limit is doubled.
- All terms and symbols are consistent ANSI/IEEE C62.35.

## Notes:

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