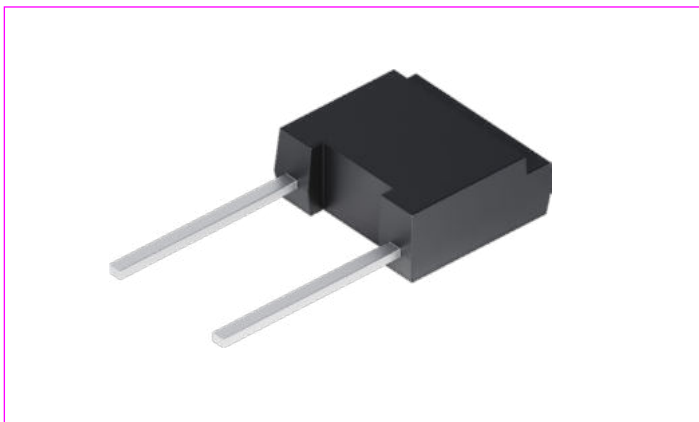


# DSA1

## Avalanche Diode

IEC60747



### Preliminary Data

Type	$V_{RSM}$ (V)	$V_{(BR)min}$ (V)	$V_{RRM}$ (V)
DSA1-12D	1300	1300	1200
DSA1-16D	1700	1750	1600
DSA1-18D	1900	1950	1800

### Features:

- Plastic standard package
- Planar passivated chips

### Advantages:

- Space and weight savings
- Simple PCB mounting
- Reduced protection circuits
- Improved temperature and power cycling

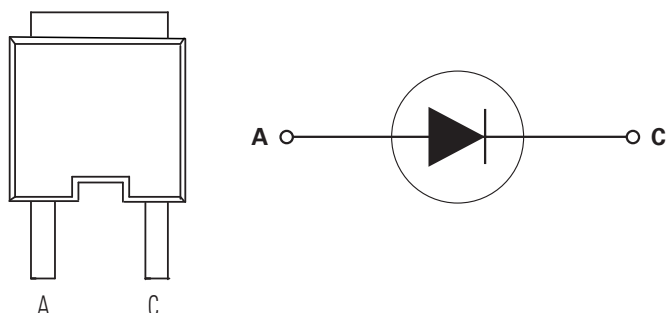
### Applications:

- Low power rectifiers
- Field supply for DC motors
- Power supplies
- High voltage rectifiers

### Product Summary

Characteristic	Value	Unit
$V_{RRM}$	1200–1800	V
$I_{F(RMS)}$	7	A
$I_{FAVM}$	2.3	A

### Pinout Diagram



**A:** Anode; **C:** Cathode

## Maximum Ratings

Symbol	Characteristics	Conditions	Value	Units
$I_{F(RMS)}$	RMS Forward Current	$T_{VJ} = T_{VJM}$	7	A
$I_{F(AVJM)}$	Maximum Average Forward Current	$T_{amb} = 45^{\circ}C; R_{thJA} = 38 \text{ K/W}; 180^{\circ} \text{ sine}$	2.3	A
		$T_{amb} = 45^{\circ}C; R_{thJA} = 80 \text{ K/W}; 180^{\circ} \text{ sine}$	1.3	A
$P_{RSM}$	Maximum Surge Reverse Power Dissipation	$T_{VJM}; t_p = 10 \text{ ms}$	1.6	kW
$I_{FSM}$	Maximum Surge Forward Current	$T_{VJ} = 45^{\circ}C; t = 10 \text{ ms (50 Hz), sine}$	110	A
		$T_{VJ} = 45^{\circ}C; t = 8.3 \text{ ms (60 Hz), sine}$	118	
		$T_{VJ} = 150^{\circ}C; t = 10 \text{ ms (50 Hz), sine}$	100	A
		$T_{VJ} = 150^{\circ}C; t = 8.3 \text{ ms (60 Hz), sine}$	104	
$I^2t$	$I^2t$ Value for Fusing	$T_{VJ} = 45^{\circ}C; t = 10 \text{ ms (50 Hz), sine}$	60	A <sup>2</sup> s
		$T_{VJ} = 45^{\circ}C; t = 8.3 \text{ ms (60 Hz), sine}$	58	
		$T_{VJ} = 150^{\circ}C; t = 10 \text{ ms (50 Hz), sine}$	50	A <sup>2</sup> s
		$T_{VJ} = 150^{\circ}C; t = 8.3 \text{ ms (60 Hz), sine}$	45	
$T_{VJ}$	Virtual Junction Temperature	–	–40 to +150	°C
$T_{VJM}$	Maximum Virtual Junction Temperature	–	150	°C
$T_{stg}$	Storage Temperature	–	–40 to +150	°C

## Static Characteristics

Symbol	Characteristics	Conditions		Value		Units
				Typ.	Max.	
$I_R$	Reverse Current	$T_{VJ} = T_{VJM}$	$V_R = V_{RRM}$	–	0.7	mA
$V_F$	Forward Voltage	$I_F = 7 \text{ A}$	$T_{VJ} = 25^{\circ}C$	–	1.34	V
$V_{TO}$	Threshold Voltage	For power-loss calculation only		–	0.8	V
$r_T$	Slope Resistance	$T_{VJ} = T_{VJM}$		–	67	mΩ

## Thermal Specifications

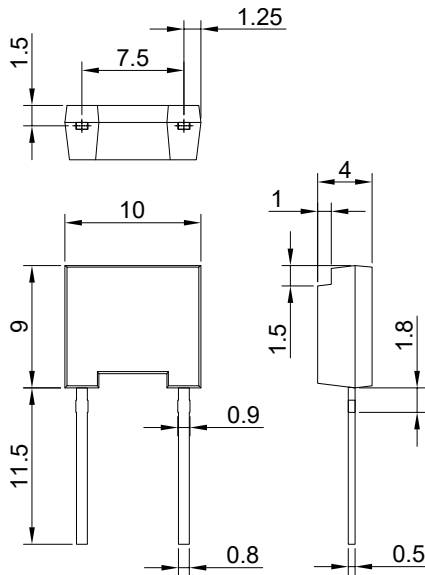
Symbol	Characteristics	Conditions	Value		Unit
			Typ.	Max.	
$R_{thJA}$	Maximum Thermal Resistance, Junction to Ambient	Forced Air Cooling with 1.5 m/s; $T_{amb} = 45^{\circ}C$	–	38	K/W
		Soldered on to PC board; $T_{amb} = 45^{\circ}C$	–	80	K/W

## Physical Specifications

Symbol	Characteristics	Conditions	Value		Unit
			Typ.	Max.	
wt	Weight	–	0.8	–	g
$d_s$	Creep distance on surface	–	–	8.5	mm
$d_A$	Strike distance through air	–	–	6.7	mm
a	Acceleration	–	–	100	m/s <sup>2</sup>

### Part Outline Drawing

Dimension in mm (1 mm = 0.0394")



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Part of:

