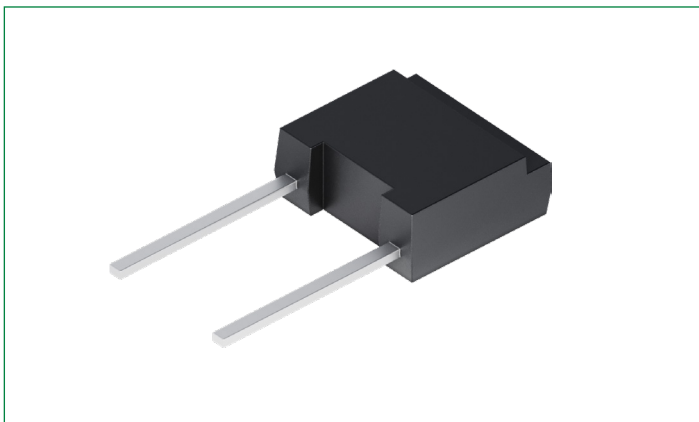


# DSA1

## 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

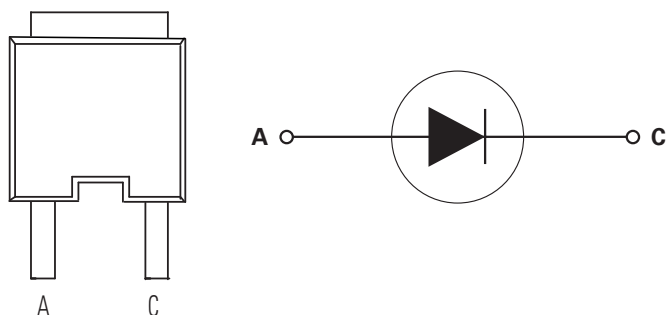
### Applications:

- 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

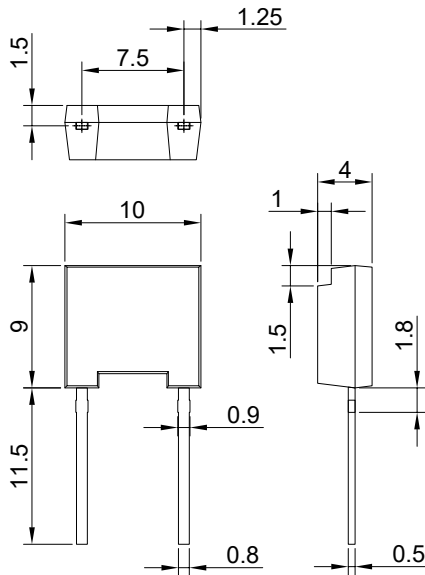
Symbol	Characteristics	Conditions	Value		Unit
			Typ.	Max.	
$R_{thJA}$	Maximum Thermal Resistance, Junction to Ambient	Forced Air Cooling with 1.5 m/s; $T_{amb} = 45^{\circ}C$	–	38	K/W
		Soldered on to PC board; $T_{amb} = 45^{\circ}C$	–	80	K/W

## 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")



### Disclaimer Notice

Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.



Part of:

