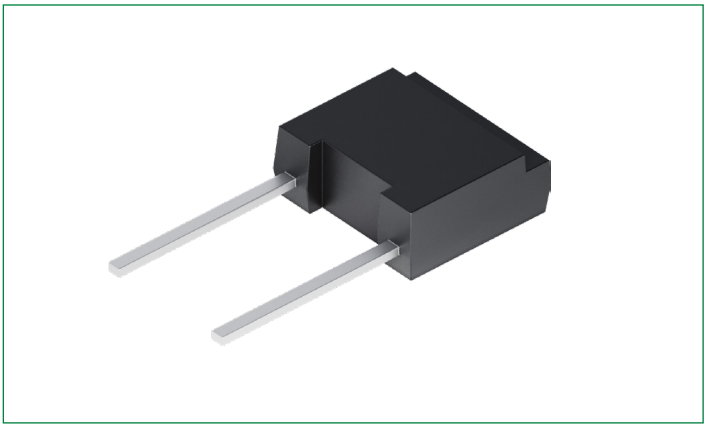
DSA1
Avalanche Diode

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

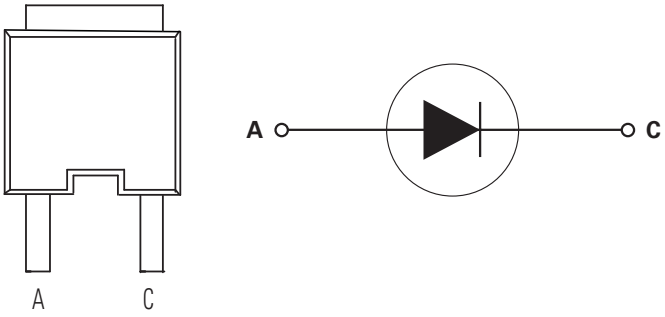
Advantages:

- 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

Pinout Diagram



A: Anode; **C:** Cathode

Product Summary

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

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Maximum Ratings

Symbol	Characteristics	Conditions	Value	Units
$I_{F(RMS)}$	RMS Forward Current	$T_{VJ} = T_{VJM}$	7	A
$I_{F(AV)M}$	Maximum Average Forward Current	T_{amb} = 45°C; R_{thJA} = 38 K/W; 180° sine	2.3	A
		T_{amb} = 45°C; R_{thJA} = 80 K/W; 180° sine	1.3	A
P_{RSM}	Maximum Surge Reverse Power Dissipation	T_{VJM} ; t_p = 10 ms	1.6	kW
I_{FSM}	Maximum Surge Forward Current	T_{VJ} = 45°C; t = 10 ms (50 Hz), sine	110	A
		T_{VJ} = 45°C; t = 8.3 ms (60 Hz), sine	118	
		T_{VJ} = 150°C; t = 10 ms (50 Hz), sine	100	A
		T_{VJ} = 150°C; t = 8.3 ms (60 Hz), sine	104	
I^2t	I^2t Value for Fusing	T_{VJ} = 45°C; t = 10 ms (50 Hz), sine	60	A^2s
		T_{VJ} = 45°C; t = 8.3 ms (60 Hz), sine	58	
		T_{VJ} = 150°C; t = 10 ms (50 Hz), sine	50	A^2s
		T_{VJ} = 150°C; t = 8.3 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		Typ.	Max.	Units
I_R	Reverse Current	$T_{VJ} = T_{VJM}$	$V_R = V_{RRM}$	–	0.7	mA
V_F	Forward Voltage	I_F = 7 A	T_{VJ} = 25°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°C	–	38	K/W
		Soldered on to PC board; T_{amb} = 45°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^2

Part Outline Drawing

Dimension in mm (1 mm = 0.0394")