advanced

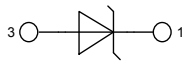
Schottky Diode Gen ²

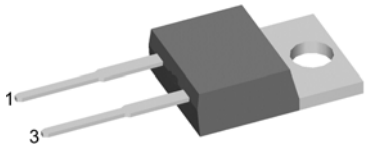
V_{RRM} = 100 V
I_{FAV} = 30 A
V_F = 0.78 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSA 30 I 100 PA





Backside: cathode

Features / Advantages:

- Very low Vf
- Extremely low switching losses
- low Irm values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Package:

- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Ratings

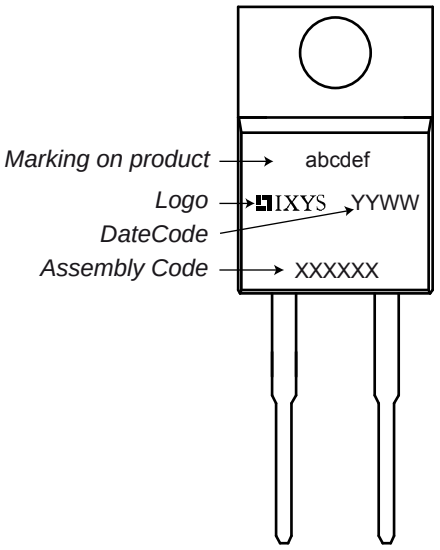
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25°C			100	V
I_R	*reverse current*	V_R = 100 V	T_{VJ} = 25°C			0.9	mA
		V_R = 100 V	T_{VJ} = 125°C			5	mA
V_F	*forward voltage*	I_F = 30 A	T_{VJ} = 25°C			0.95	V
		I_F = 60 A				1.15	V
		I_F = 30 A	T_{VJ} = 125°C			0.78	V
		I_F = 60 A				1.01	V
I_{FAV}	*average forward current*	rectangular d = 0.5	T_C = 150°C			30	A
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 175°C			0.46	V
r_F	*slope resistance* }					7.8	mΩ
R_{thJC}	*thermal resistance junction to case*					0.85	K/W
T_{VJ}	*virtual junction temperature*			-55		175	°C
P_{tot}	*total power dissipation*		T_C = 25°C			175	W
I_{FSM}	*max. forward surge current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			230	A
C_J	*junction capacitance*	V_R = 12 V; f = 1 MHz	T_{VJ} = 25°C		289		pF
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = 10 A; L = 100 µH	T_{VJ} = 25°C			5	mJ
I_{AR}	*repetitive avalanche current*	$V_A = 1.5 \cdot V_R$ typ.: f = 10 kHz				1	A

advanced

Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per pin [1]			35	A
R_{thCH}	*thermal resistance case to heatsink*			0.50		K/W
T_{stg}	*storage temperature*		-55		150	°C
Weight				2		g
M_D	*mounting torque*		0.4		0.8	Nm
F_C	*mounting force with clip*		20		60	N

[1] I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Product Marking

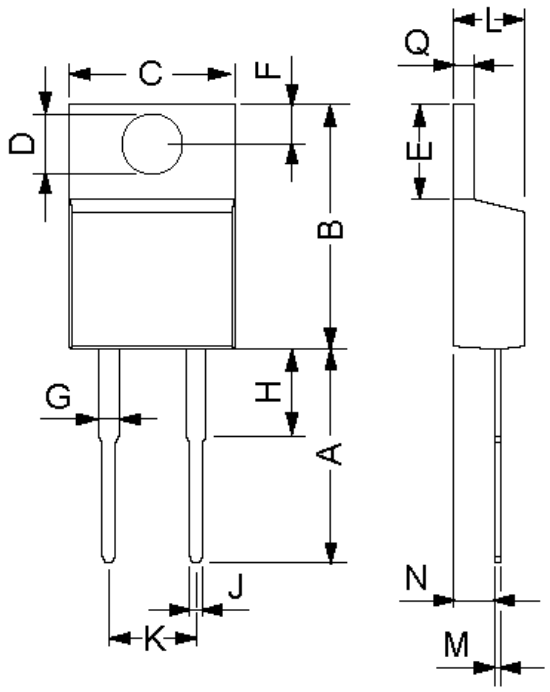


Part number

D = Diode
S = Schottky Diode
A = low VF
30 = Current Rating [A]
I = Single Diode
100 = Reverse Voltage [V]
PA = TO-220AC (2)

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 30 I 100 PA	DSA30I100PA	Tube	50	504162

Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.7	14.73	0.5	0.58
B	14.23	16.51	0.56	0.65
C	9.66	10.66	0.38	0.42
D	3.54	4.08	0.139	0.161
E	5.85	6.85	2.3	0.42
F	2.54	3.42	0.1	0.135
G	1.15	1.77	0.045	0.07
H	-	6.35	-	0.25
J	0.64	0.89	0.025	0.035
K	4.83	5.33	0.19	0.21
L	3.56	4.82	0.14	0.19
M	0.51	0.76	0.02	0.03
N	2.04	2.49	0.08	0.115
Q	0.64	1.39	0.025	0.055