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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# Schottky Diode Gen <sup>2</sup>

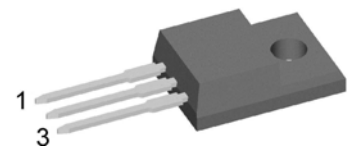
preliminary

$$\begin{aligned} V_{RRM} &= 100V \\ I_{FAV} &= 2 \times 10A \\ V_F &= 0.71V \end{aligned}$$


High Performance Schottky Diode  
Low Loss and Soft Recovery  
Common Cathode

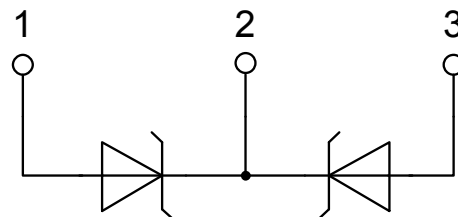
Part number

**DSA20C100PN**



Backside: isolated

 E72873



## Features / Advantages:

- Very low  $V_f$
- Extremely low switching losses
- Low  $I_{rm}$  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: TO-220FP

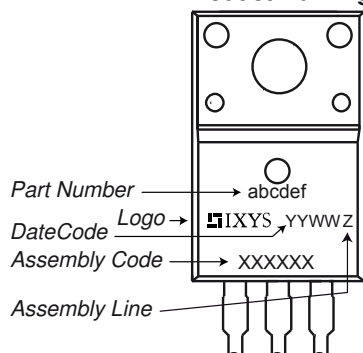
- Isolation Voltage: 2500 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Base plate: Plastic overmolded tab
- Reduced weight

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V <sub>RSM</sub>	max. non-repetitive reverse blocking voltage	T <sub>VJ</sub> = 25°C				100	V
V <sub>RRM</sub>	max. repetitive reverse blocking voltage	T <sub>VJ</sub> = 25°C				100	V
I <sub>R</sub>	reverse current, drain current	V <sub>R</sub> = 100 V	T <sub>VJ</sub> = 25°C			200	μA
		V <sub>R</sub> = 100 V	T <sub>VJ</sub> = 125°C			2	mA
V <sub>F</sub>	forward voltage drop	I <sub>F</sub> = 10 A	T <sub>VJ</sub> = 25°C			0.89	V
		I <sub>F</sub> = 20 A				1.04	V
		I <sub>F</sub> = 10 A	T <sub>VJ</sub> = 125°C			0.71	V
		I <sub>F</sub> = 20 A				0.87	V
I <sub>FAV</sub>	average forward current	T <sub>C</sub> = 140°C rectangular      d = 0.5	T <sub>VJ</sub> = 175°C			10	A
V <sub>F0</sub>	threshold voltage	} for power loss calculation only				0.45	V
r <sub>F</sub>	slope resistance					16.1	mΩ
R <sub>thJC</sub>	thermal resistance junction to case					4.5	K/W
R <sub>thCH</sub>	thermal resistance case to heatsink				0.50		K/W
P <sub>tot</sub>	total power dissipation	T <sub>C</sub> = 25°C				35	W
I <sub>FSM</sub>	max. forward surge current	t = 10 ms; (50 Hz), sine; V <sub>R</sub> = 0 V				240	A
C <sub>J</sub>	junction capacitance	V <sub>R</sub> = 12 V    f = 1 MHz			96		pF

preliminary

Package TO-220FP				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
$I_{RMS}$	RMS current	per terminal				35	A
$T_{VJ}$	virtual junction temperature			-55		175	°C
$T_{op}$	operation temperature			-55		150	°C
$T_{stg}$	storage temperature			-55		150	°C
Weight					2		g
$M_D$	mounting torque			0.4		0.6	Nm
$F_C$	mounting force with clip			20		60	N
$d_{Spp/App}$	creepage distance on surface / striking distance through air	terminal to terminal	1.6	1.0			mm
$d_{Spb/Apb}$		terminal to backside	2.5	2.5			mm
$V_{ISOL}$	isolation voltage	t = 1 second	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	2500			V
		t = 1 minute		2080			V

## Product Marking



## Part number

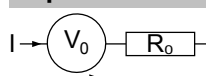
D = Diode  
 S = Schottky Diode  
 A = low VF  
 20 = Current Rating [A]  
 C = Common Cathode  
 100 = Reverse Voltage [V]  
 PN = TO-220ABFP (3)

Ordering	Part Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA20C100PN	DSA20C100PN	Tube	50	503516

Similar Part	Package	Voltage class
DSA20C100PB	TO-220AB (3)	100

## Equivalent Circuits for Simulation

\* on die level

 $T_{VJ} = 175^\circ\text{C}$ 

Schottky

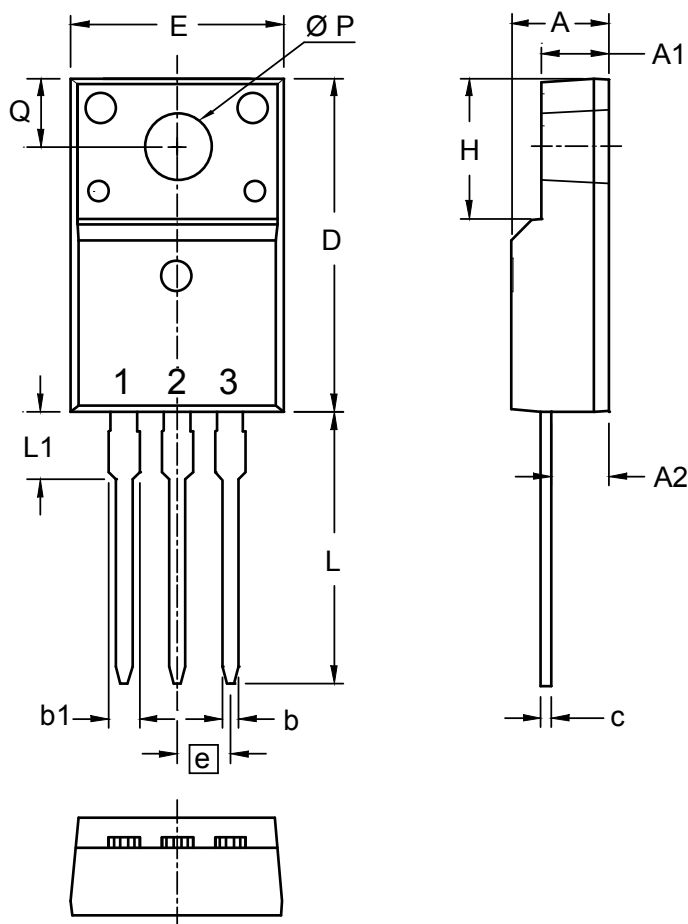
 $V_{0\max}$  threshold voltage 0.45

V

 $R_{0\max}$  slope resistance \* 12.9

mΩ

### Outlines TO-220FP



Dim.	Millimeters		Inches	
	min	max	min	max
A	4.50	4.90	0.177	0.193
A1	2.34	2.74	0.092	0.108
A2	2.56	2.96	0.101	0.117
b	0.70	0.90	0.028	0.035
c	0.45	0.60	0.018	0.024
D	15.67	16.07	0.617	0.633
E	9.96	10.36	0.392	0.408
e	2.54 BSC		0.100 BSC	
H	6.48	6.88	0.255	0.271
L	12.68	13.28	0.499	0.523
L1	3.03	3.43	0.119	0.135
Ø P	3.08	3.28	0.121	0.129
Q	3.20	3.40	0.126	0.134

