

Schottky Diode

$$V_{RRM} = 100 \text{ V}$$

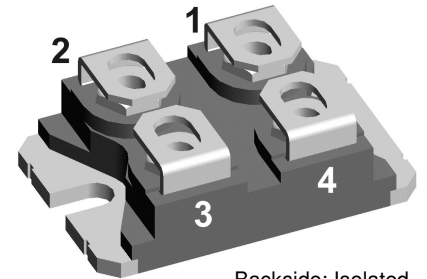
$$I_{FAV} = 300 \text{ A}$$

$$V_F = 0.88 \text{ V}$$

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

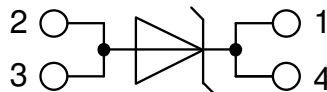
Part number

DSA300I100NA



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: SOT-227B (minibloc)

- Isolation Voltage: 3000 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Base plate: Copper internally DCB isolated
- Advanced power cycling

Terms and Conditions of Usage

The data contained in this product data sheet is exclusively intended for technically trained staff. The user will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to his application. The specifications of our components may not be considered as an assurance of component characteristics. The information in the valid application- and assembly notes must be considered. Should you require product information in excess of the data given in this product data sheet or which concerns the specific application of your product, please contact your local sales office.

Due to technical requirements our product may contain dangerous substances. For information on the types in question please contact your local sales office.

Should you intend to use the product in aviation, in health or life endangering or life support applications, please notify. For any such application we urgently recommend

- to perform joint risk and quality assessments;

- the conclusion of quality agreements;

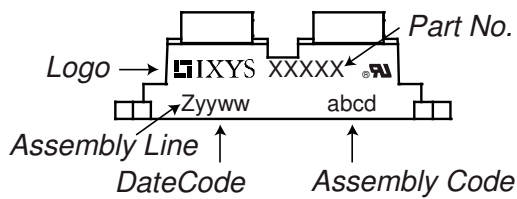
- to establish joint measures of an ongoing product survey, and that we may make delivery dependent on the realization of any such measures.

Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					100	V
V_{RRM}	max. repetitive reverse blocking voltage					100	V
I_R	reverse current, drain current	$V_R = 100\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		3	mA
		$V_R = 100\text{ V}$		$T_{VJ} = 150^\circ\text{C}$		30	mA
V_F	forward voltage drop	$I_F = 300\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0.99	V
		$I_F = 600\text{ A}$				1.30	V
		$I_F = 300\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0.88	V
		$I_F = 600\text{ A}$				1.21	V
I_{FAV}	average forward current	$T_C = 95^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		300	A
V_{F0}	threshold voltage	} for power loss calculation only				0.53	V
r_F	slope resistance					1.09	mΩ
R_{thJC}	thermal resistance junction to case					0.15	K/W
R_{thCH}	thermal resistance case to heatsink			0.10			K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		830	W
I_{FSM}	max. forward surge current	$t = 10\text{ ms}; (50\text{ Hz}), \text{ sine}; V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		4.80	kA
C_J	junction capacitance	$V_R = 12\text{ V}$	$f = 1\text{ MHz}$	$T_{VJ} = 25^\circ\text{C}$		4.86	nF

Package SOT-227B (minibloc)		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			150	A
T_{VJ}	virtual junction temperature		-40		150	°C
T_{op}	operation temperature		-40		125	°C
T_{stg}	storage temperature		-40		150	°C
Weight				30		g
M_D	mounting torque		1.1		1.5	Nm
M_T	terminal torque		1.1		1.5	Nm
$d_{Spp/App}$	creepage distance on surface striking distance through air	terminal to terminal	10.5	3.2		mm
$d_{Spb/Apb}$		terminal to backside	8.6	6.8		mm
V_{ISOL}	isolation voltage	t = 1 second			3000	V
		t = 1 minute	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA		2500	V

¹⁾ I_{RMS} is typically limited by the pin-to-chip resistance (1); or by the current capability of the chip (2). In case of (1) and a product with multiple pins for one chip-potential, the current capability can be increased by connecting the pins as one contact.

Product Marking



Part description

- D = Diode
- S = Schottky Diode
- A = low VF
- 300 = Current Rating [A]
- I = Single Diode
- 100 = Reverse Voltage [V]
- NA = SOT-227B (minibloc)

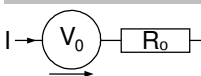
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSA300I100NA	DSA300I100NA	Tube	10	509813

Similar Part	Package	Voltage class
DSA300I45NA	SOT-227B (minibloc)	45
DSA300I200NA	SOT-227B (minibloc)	200

Equivalent Circuits for Simulation

* on die level

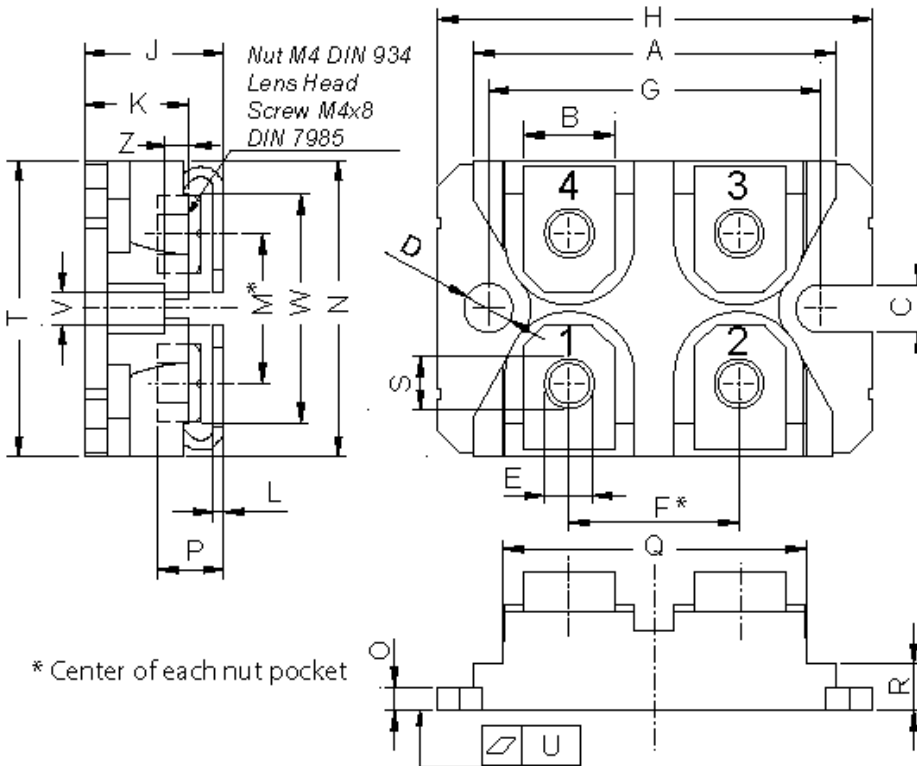
$T_{VJ} = 150$ °C



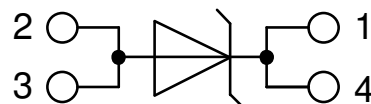
Schottky

$V_{0\ max}$	threshold voltage	0.53	V
$R_{0\ max}$	slope resistance *	0.25	mΩ

Outlines SOT-227B (minibloc)



Dim.	Millimeter		Inches	
	min	max	min	max
A	31.50	31.88	1.240	1.255
B	7.80	8.20	0.307	0.323
C	4.09	4.29	0.161	0.169
D	4.09	4.29	0.161	0.169
E	4.09	4.29	0.161	0.169
F	14.91	15.11	0.587	0.595
G	30.12	30.30	1.186	1.193
H	37.80	38.23	1.488	1.505
J	11.68	12.22	0.460	0.481
K	8.92	9.60	0.351	0.378
L	0.74	0.84	0.029	0.033
M	12.50	13.10	0.492	0.516
N	25.15	25.42	0.990	1.001
O	1.95	2.13	0.077	0.084
P	4.95	6.20	0.195	0.244
Q	26.54	26.90	1.045	1.059
R	3.94	4.42	0.155	0.167
S	4.55	4.85	0.179	0.191
T	24.59	25.25	0.968	0.994
U	-0.05	0.10	-0.002	0.004
V	3.20	5.50	0.126	0.217
W	19.81	21.08	0.780	0.830
Z	2.50	2.70	0.098	0.106



Schottky

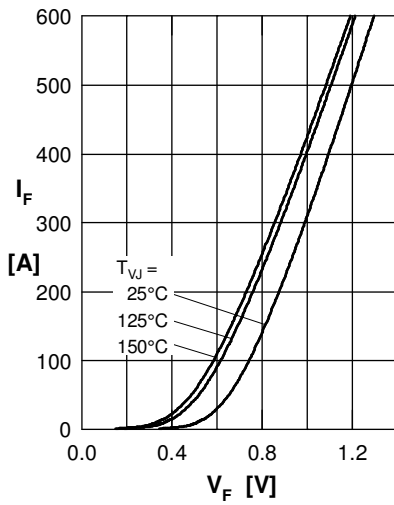


Fig. 1 Max. forward voltage drop characteristics

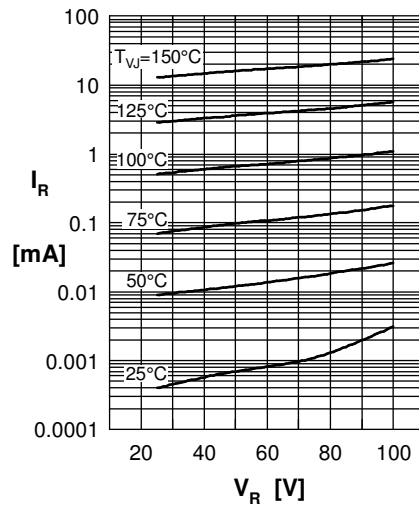


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

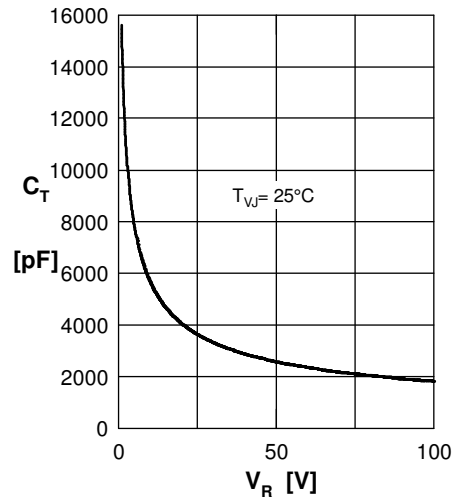


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

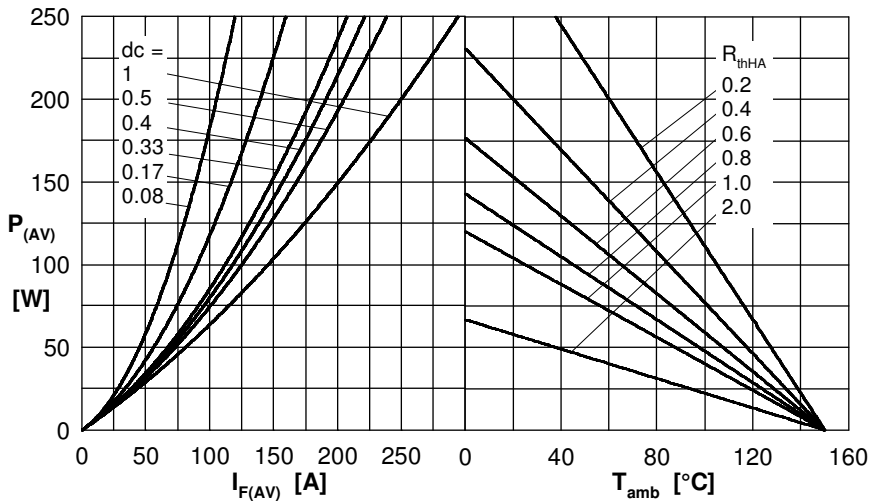


Fig. 4a Power dissipation versus direct output current
Fig. 4b and ambient temperature

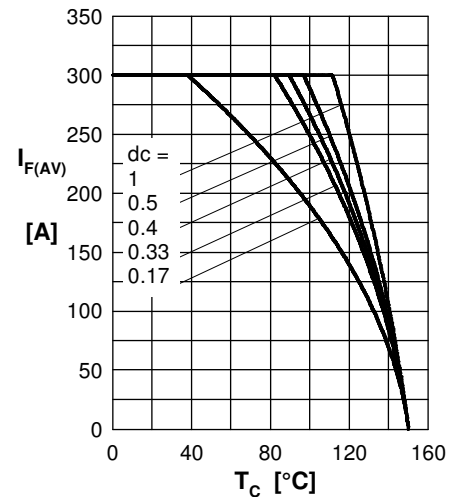


Fig. 5 Average forward current $I_{F(AV)}$ vs. case temp. T_C

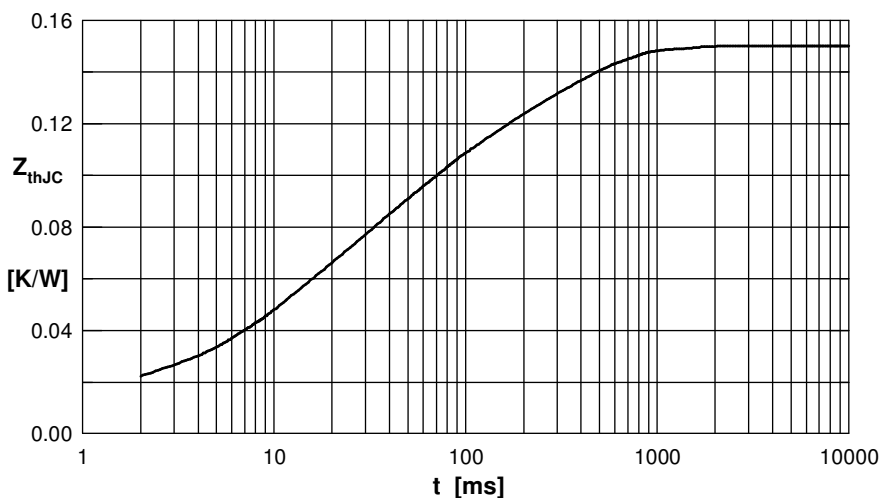


Fig. 6 Transient thermal impedance junction to case

R_{thi} [K/W]	t_i [s]
0.017	0.01
0.013	0.00001
0.02	0.01
0.05	0.045
0.05	0.3



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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