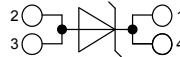


## Schottky Diode Gen<sup>2</sup>

High Performance Schottky Diode  
Low Loss and Soft Recovery  
Single Diode

Part number

DSA 300 I 45 NA



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

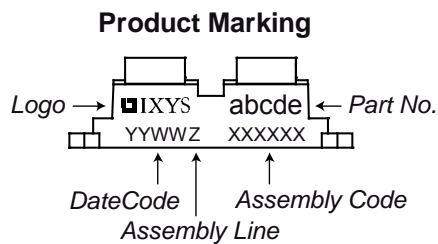
### Package:

- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$V_{RRM}$	max. repetitive reverse voltage				45	V
$I_R$	reverse current	$V_R = 45\text{ V}$			1	mA
		$V_R = 45\text{ V}$			10	mA
$V_F$	forward voltage	$I_F = 300\text{ A}$			0.79	V
		$I_F = 600\text{ A}$			1.02	V
		$I_F = 300\text{ A}$			0.70	V
		$I_F = 600\text{ A}$			0.97	V
$I_{FAV}$	average forward current	rectangular d = 0.5			300	A
$V_{FO}$	threshold voltage	} for power loss calculation only			0.42	V
$r_F$	slope resistance				0.85	mΩ
$R_{thJC}$	thermal resistance junction to case				0.20	K/W
$T_{VJ}$	virtual junction temperature		-40		150	°C
$P_{tot}$	total power dissipation				750	W
$I_{FSM}$	max. forward surge current	t = 10 ms (50 Hz), sine			5300	A
$C_J$	junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}$			17.0	nF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			150	A
$R_{thCH}$	thermal resistance case to heatsink			0.10		K/W
$T_{stg}$	storage temperature		-40		150	°C
<b>Weight</b>				30		g
$M_D$	mounting torque		1.1		1.5	Nm
$M_T$	terminal torque		1.1		1.5	Nm
$V_{ISOL}$	isolation voltage	t = 1 second	3000			V
		t = 1 minute	2500			V
$d_{Spp/App}$	creepage   striking distance on surface   through air	terminal to terminal	10.5	3.2		mm
$d_{Spb/Apb}$	creepage   striking distance on surface   through air	terminal to backside	8.6	6.8		mm

<sup>1)</sup>  $I_{RMS}$  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.

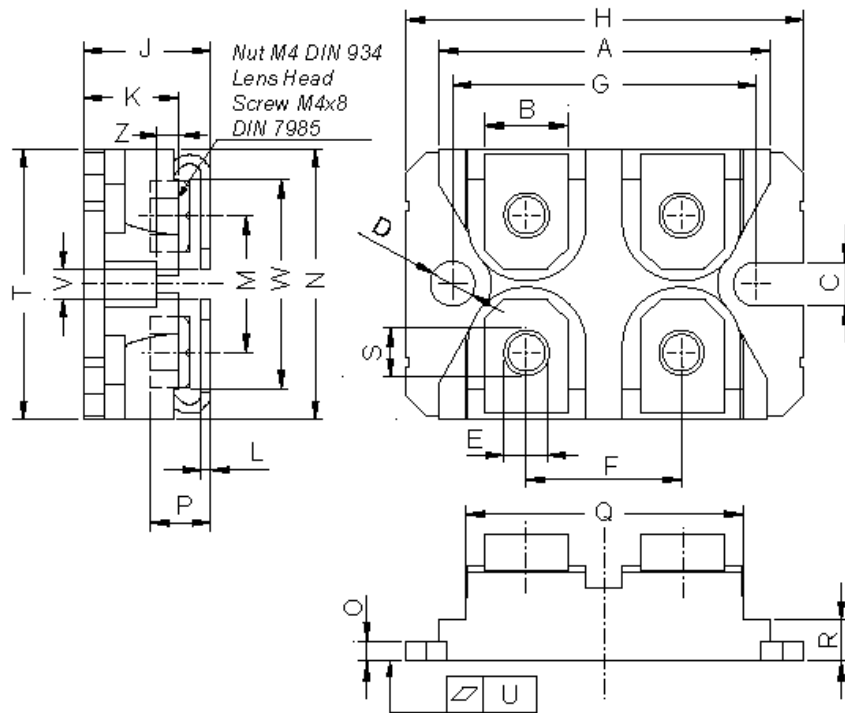

**Part number**

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

Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSA 300 I 45 NA	DSA300I45NA	Tube	10	511251

Similar Part	Package	Voltage class
DSA300I100NA	SOT-227B (minibloc)	100
DSA300I200NA	SOT-227B (minibloc)	200

**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