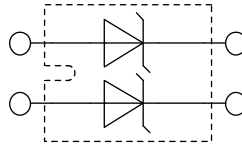


# Schottky Diode

High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Parallel legs

Part number

**DSS2x81-0045B**



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:**

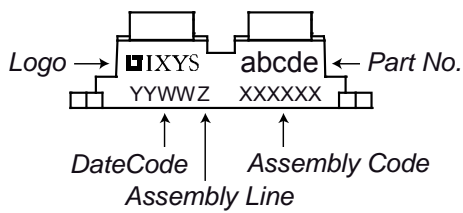
- Housing: SOT-227B (minibloc)
- Industry standard outline
- Cu base plate internal DCB isolated
- Isolation Voltage 3000 V
- Epoxy meets UL 94V-0
- RoHS compliant

**Ratings**

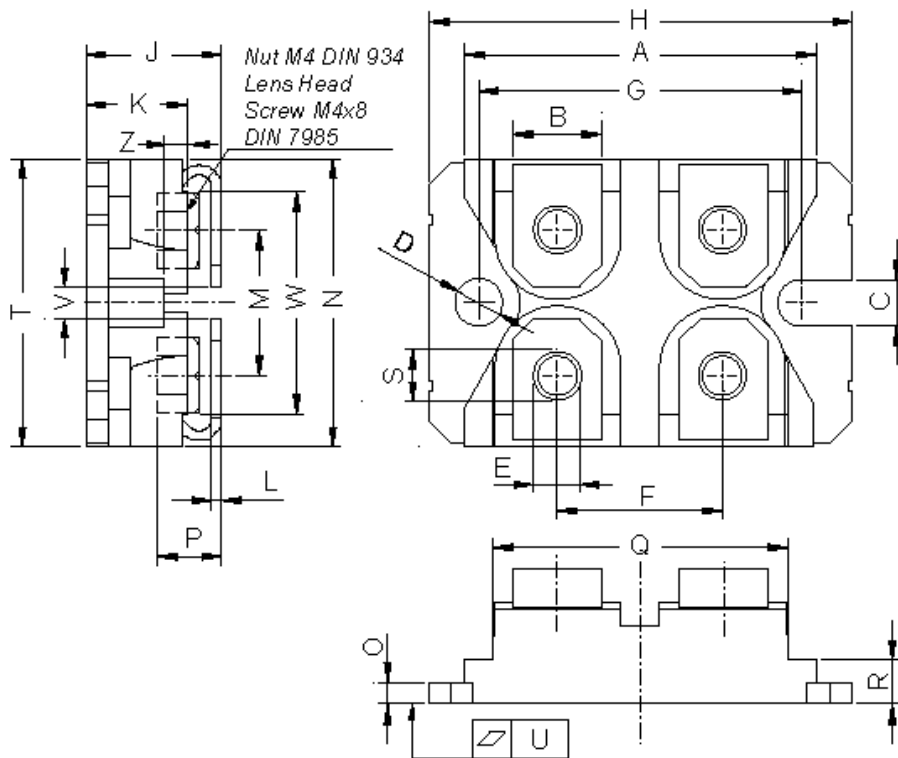
Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$V_{RRM}$	max. repetitive reverse voltage				45	V
$I_R$	reverse current	$V_R = 45\text{ V}$			60	mA
		$V_R = 45\text{ V}$			250	mA
$V_F$	forward voltage	$I_F = 80\text{ A}$			0.65	V
		$I_F = 160\text{ A}$			0.96	V
		$I_F = 80\text{ A}$			0.63	V
		$I_F = 160\text{ A}$			0.96	V
$I_{FAV}$	average forward current	rectangular d = 0.5			80	A
$V_{F0}$	threshold voltage	} for power loss calculation only			0.30	V
$r_F$	slope resistance				4	mΩ
$R_{thJC}$	thermal resistance junction to case				0.80	K/W
$T_{VJ}$	virtual junction temperature		-40		150	°C
$P_{tot}$	total power dissipation				150	W
$I_{FSM}$	max. forward surge current	t = 10 ms (50 Hz), sine			800	A
$C_J$	junction capacitance	$V_R = 5\text{ V}; f = 1\text{ MHz}$		2.93		nF

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per terminal <sup>1)</sup>			100	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

### Product Marking



Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSS2x81-0045B	DSS2x81-0045B	Tube	10	470422

**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

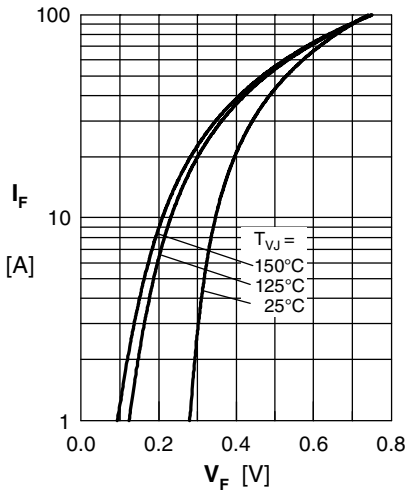


Fig. 1 Maximum forward voltage drop characteristics

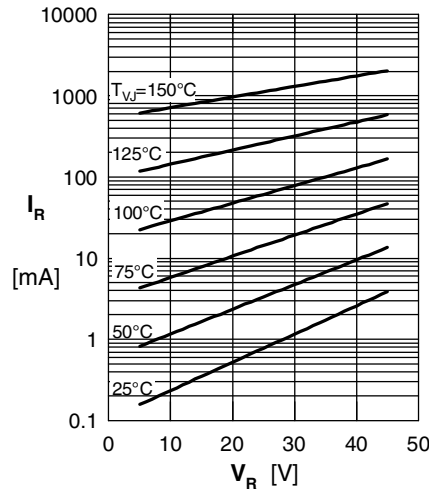


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

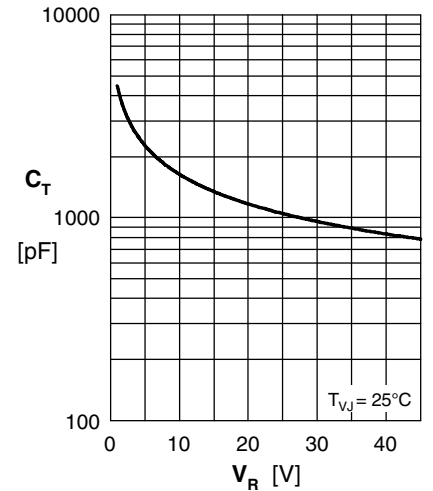


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

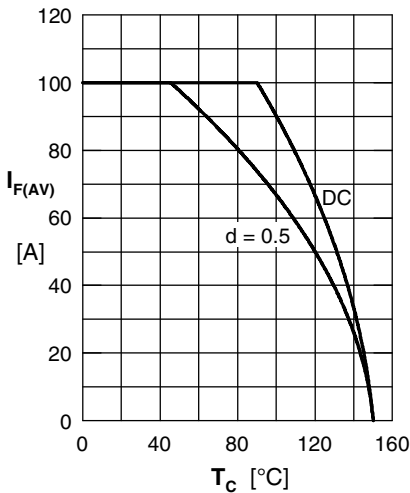


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temp.  $T_C$

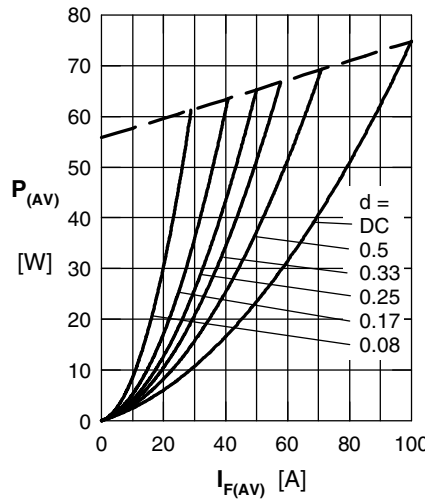


Fig. 5 Forward power loss characteristics

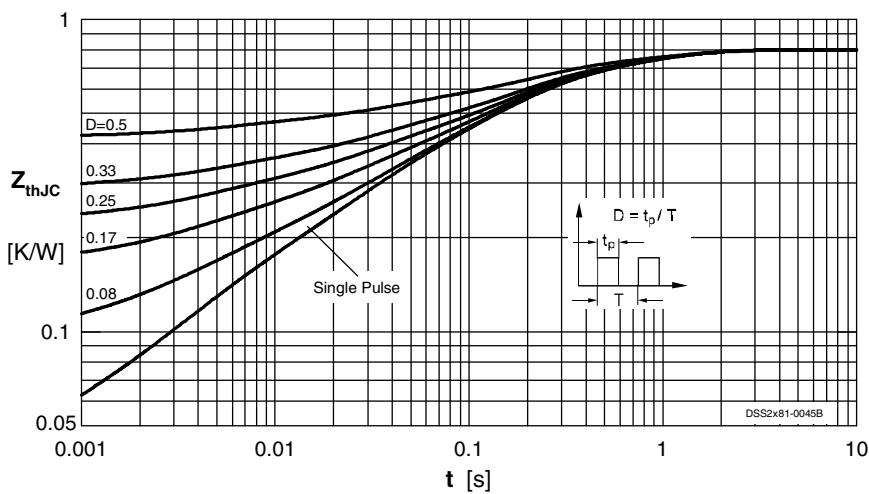


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode

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