

Schottky Diode

$$V_{RRM} = 45\text{ V}$$

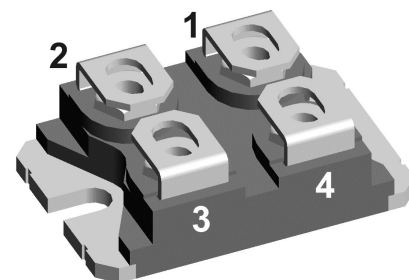
$$I_{FAV} = 2 \times 60\text{ A}$$

$$V_F = 0.65\text{ V}$$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Parallel legs

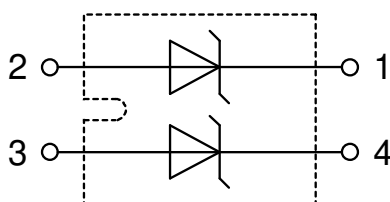
Part number

DSS2x61-0045A



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

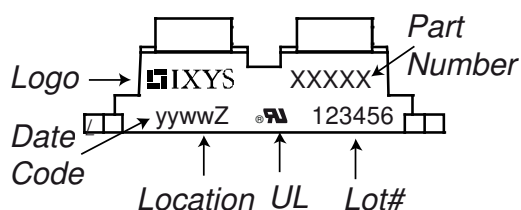
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Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V _{RSM}	max. non-repetitive reverse blocking voltage	T _{VJ} = 25°C				45	V
V _{RRM}	max. repetitive reverse blocking voltage	T _{VJ} = 25°C				45	V
I _R	reverse current, drain current	V _R = 45 V	T _{VJ} = 25°C			2	mA
		V _R = 45 V	T _{VJ} = 125°C			10	mA
V _F	forward voltage drop	I _F = 60 A	T _{VJ} = 25°C			0.75	V
		I _F = 120 A				0.94	V
		I _F = 60 A	T _{VJ} = 125°C			0.65	V
		I _F = 120 A				0.85	V
I _{FAV}	average forward current	T _C = 110°C rectangular d = 0.5	T _{VJ} = 150°C			60	A
V _{F0}	threshold voltage	} for power loss calculation only				0.43	V
r _F	slope resistance					3.2	mΩ
R _{thJC}	thermal resistance junction to case					0.8	K/W
R _{thCH}	thermal resistance case to heatsink				0.1		K/W
P _{tot}	total power dissipation	T _C = 25°C				150	W
I _{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; V _R = 0 V		T _{VJ} = 45°C		800	A
C _J	junction capacitance	V _R = 5 V f = 1 MHz		T _{VJ} = 25°C		2.93	nF

Package SOT-227B (minibloc)				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal				100	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	50/60 Hz, RMS; $I_{ISOL} \leq 1$ mA	3000			V
		t = 1 minute		2500			V

Product Marking

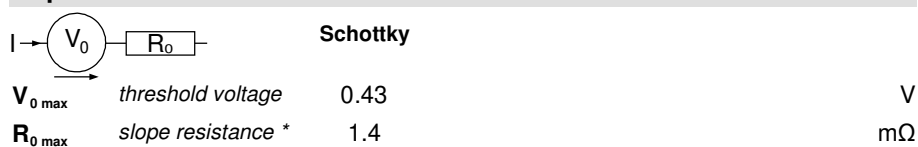


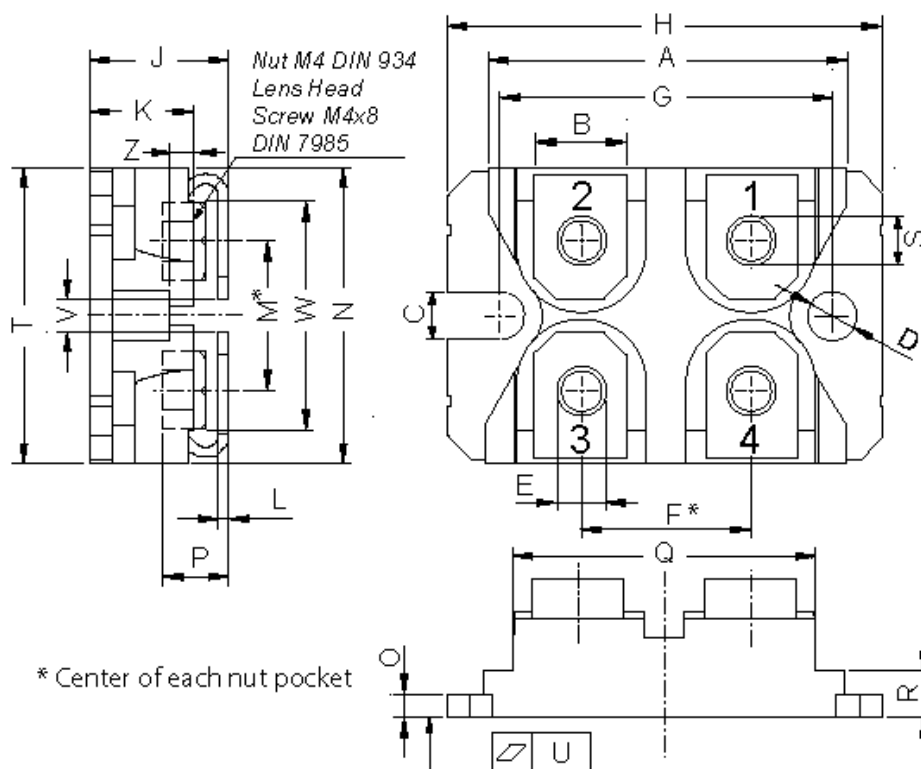
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSS2x61-0045A	DSS2x61-0045A	Tube	10	470449

Equivalent Circuits for Simulation

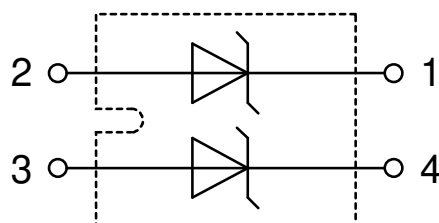
* on die level

$T_{VJ} = 150^{\circ}\text{C}$



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



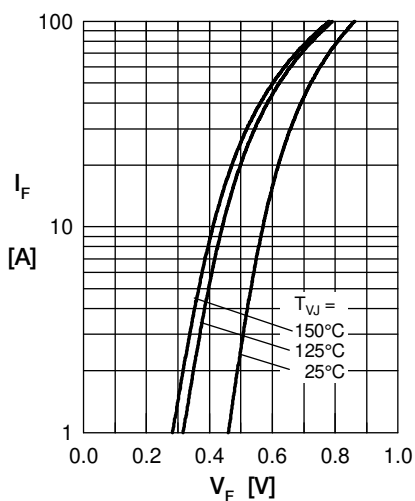
Schottky


Fig. 1 Max. forward voltage drop characteristics

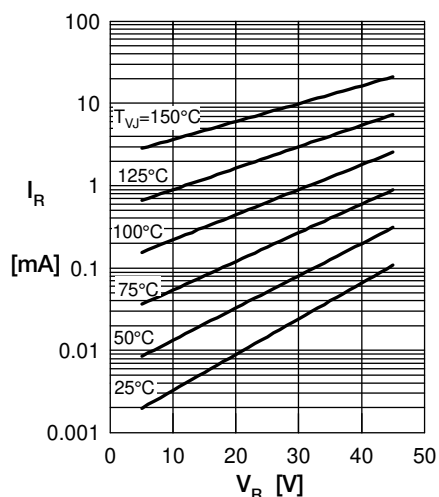


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

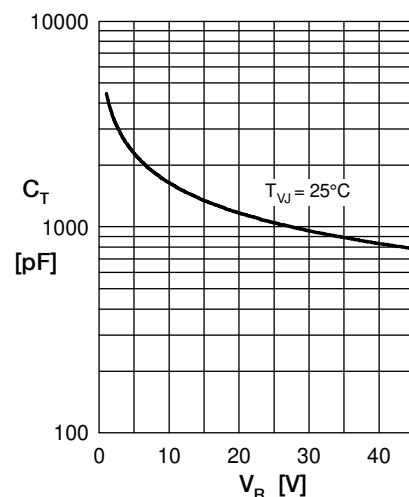


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

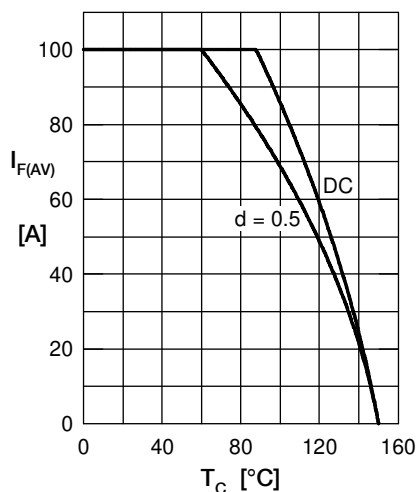


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temp. T_C

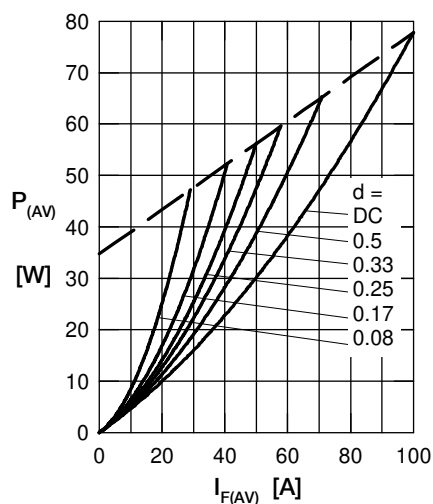


Fig. 5 Forward power loss characteristics

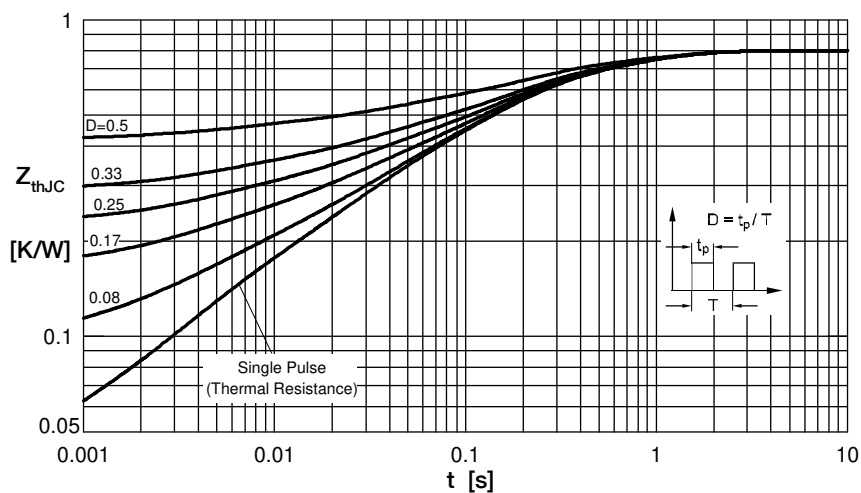


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode