

# DSS2x61-0045A

## 45 V, 2 x 60 A High-Performance Schottky Diode

Low Loss and Soft Recovery Parallel Legs



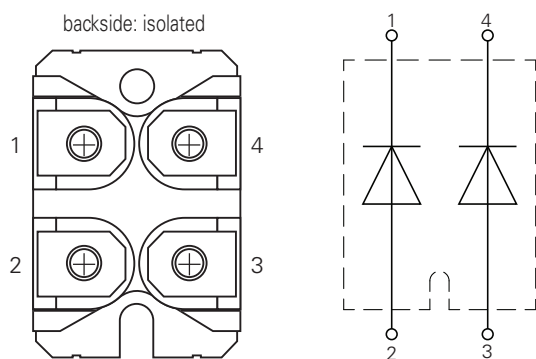
### Features

- Very low  $V_F$
- Extremely low switching losses
- High reliability circuit operation
- Low-noise switching
- UL recognized as an Electrically Isolated Semiconductor Device (file number E72873)

### Benefits

- Low voltage peaks for reduced protection circuits
- Improved thermal behavior
- Longer lifetime of the system

### Pinout Diagram SOT-227B (miniBLOC™)



1: Cathode; 2: Anode; 3: Anode; 4: Cathode

### Applications

- Rectifiers in Switch Mode Power Supplies (SMPS)
- Free wheeling diode in low voltage converters

### Package SOT-227B (miniBLOC)

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

### Product Summary

Characteristic	Value	Unit
$V_{RRM}$	45	V
$I_{F(AV)}$	2 x 60	A
$V_F$	0.62	V

## Maximum Ratings

Symbol	Characteristics	Condition	Value	Units
$V_{RRM}$	Repetitive Reverse Blocking Voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	45	V
$I_{F(AV)}$	Average Forward Current	$T_c = 110\text{ }^{\circ}\text{C}, T_{vj} = 150\text{ }^{\circ}\text{C}$ , rectangular $d = 0.5$	60	A
$I_{FSM}$	Non-repetitive Forward Surge Current	$t = 10\text{ ms}$ , (50 Hz), sine, $V_R = 0\text{ V}, T_{vj} = 45\text{ }^{\circ}\text{C}$	800	A
$P_{tot}$	Total Power Dissipation	$T_c = 25\text{ }^{\circ}\text{C}$	250	W
$V_{(FO)}$	Threshold Voltage	–	0.43	V
$r_F$	Slope Resistance	–	3.2	m $\Omega$
$T_{stg}$	Storage Temperature Range	–	-55 to +150	$^{\circ}\text{C}$
$T_{vj}$	Virtual Junction Temperature Range	–	-55 to +150	$^{\circ}\text{C}$
$T_{op}$	Operating Temperature Range	–	-55 to +125	$^{\circ}\text{C}$

## Electrical Characteristics – Static

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
$I_R$	Reverse Current	$V_R = 45\text{ V}, T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	2	mA
		$V_R = 45\text{ V}, T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	10	
$V_F$	Forward Voltage	$I_F = 60\text{ A}$ ; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.7	V
		$I_F = 120\text{ A}$ ; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.88	
		$I_F = 60\text{ A}$ ; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.62	
		$I_F = 120\text{ A}$ ; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.83	
$C_j$	Junction Capacitance	$V_R = 5\text{ V}, f = 1\text{ MHz}$	–	4.4	–	nF

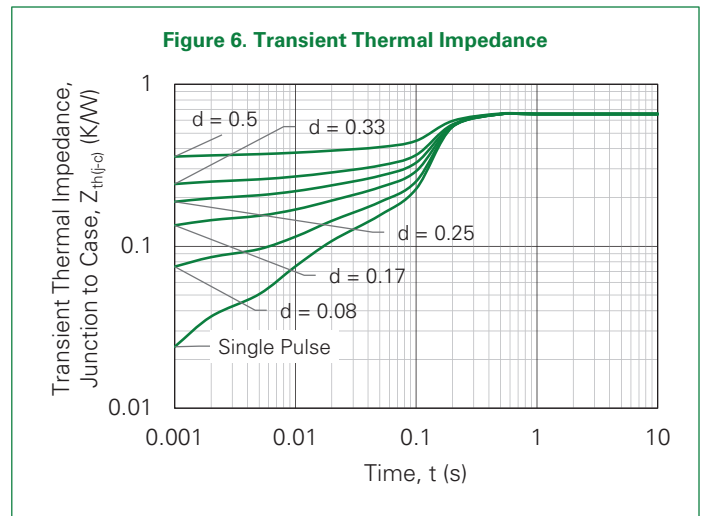
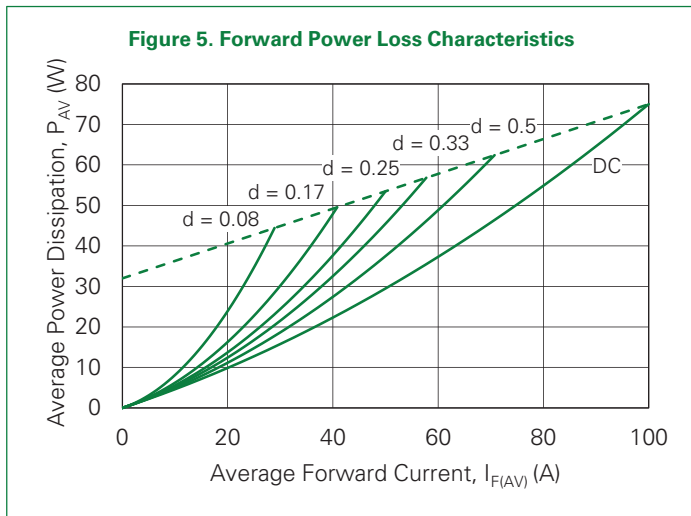
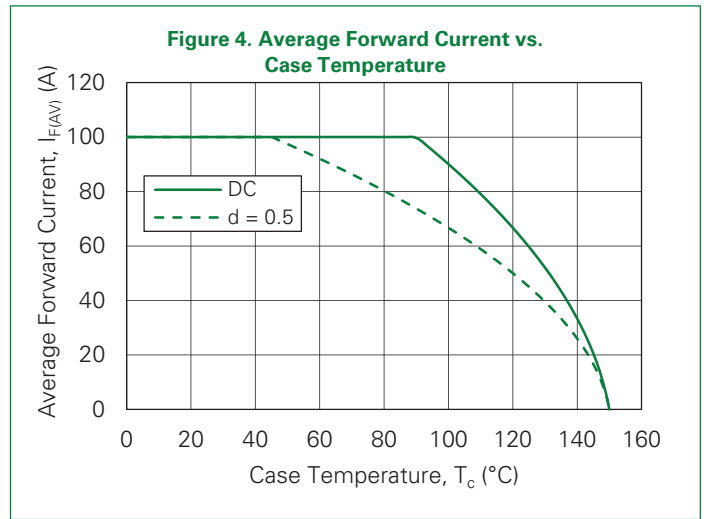
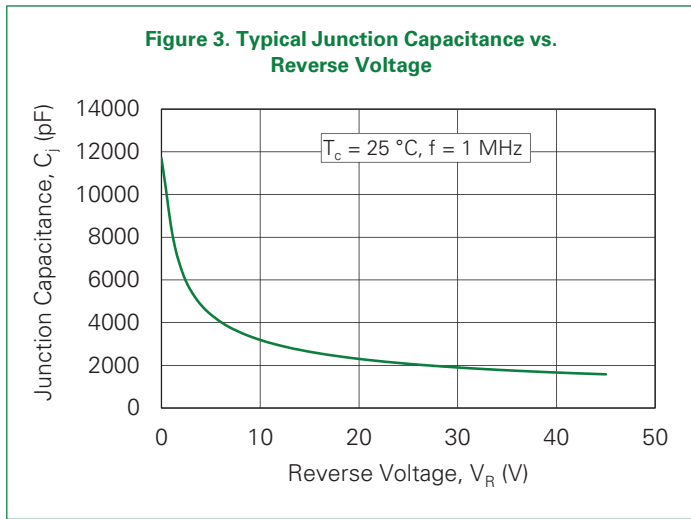
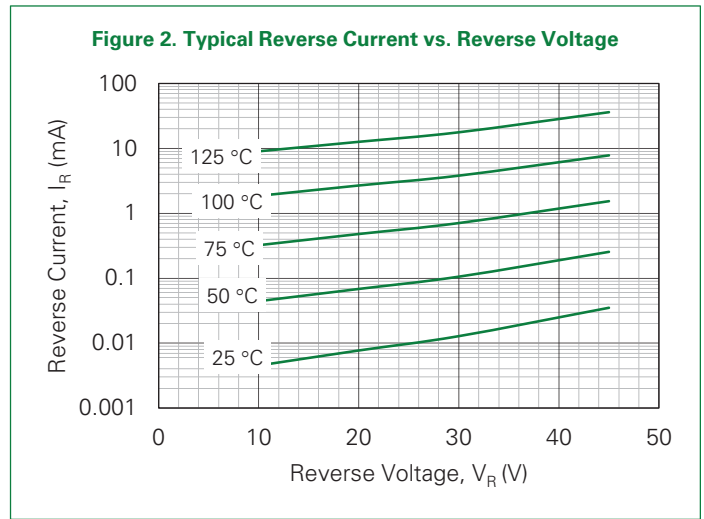
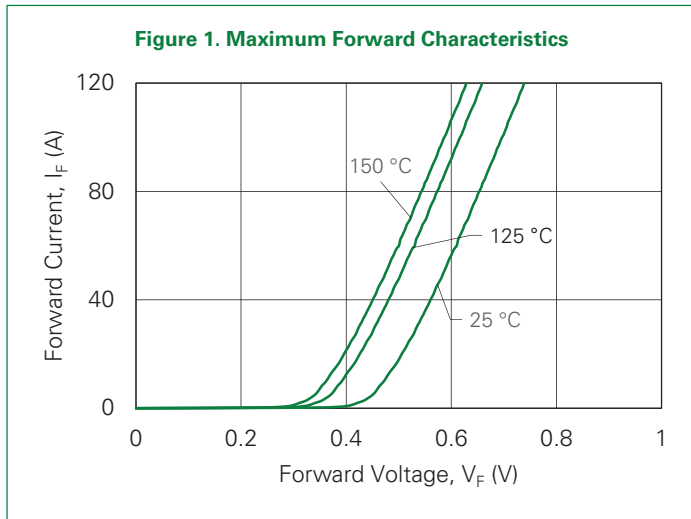
## Thermal Specifications

Symbol	Characteristics	Value			Units
		Min.	Typ.	Max.	
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	–	–	0.5	K/W
$R_{th(c-h)}$	Thermal Resistance, Case to Heatsink	–	0.3	–	K/W

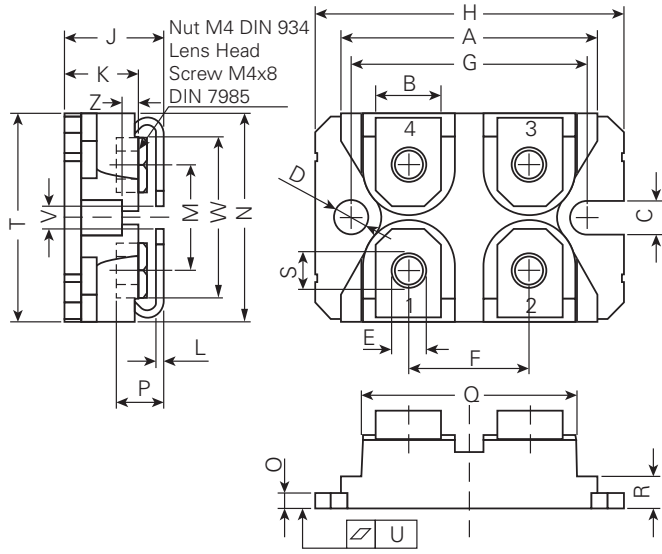
## Package SOT-227B (miniBLOC)

Symbol	Characteristics	Conditions	Value			Units	
			Min.	Typ.	Max.		
$I_{RMS}$	RMS Current	per terminal	–	–	100	A	
$M_s$	Mounting Torque for Screw to Heatsink	–	1.1	–	1.5	Nm	
$M_t$	Mounting Torque for Terminal Screws	–	1.1	–	1.5	Nm	
$d_{spp/app}$	Creepage Distance along the Surface/ Clearance Distance in Air	terminal to terminal	3.2	–	–	mm	
$d_{spb/apb}$		terminal to backside	6.8	–	–	mm	
$V_{isol}$	Isolation Voltage	$t = 1\text{ sec}$	50/60 Hz, RMS; $isol \leq 1\text{ mA}$	3000	–	–	V
		$t = 1\text{ minute}$		2500	–	–	V
G	Weight	–	–	30	–	g	

Characteristic Curves

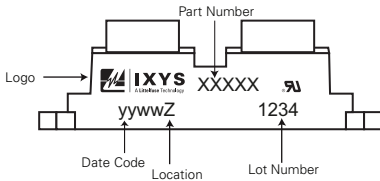


Part Outline Drawing SOT-227B (miniBLOC)



Symbol	Millimeters		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

Part Number and Marking



- DS = Silicon Diode
- S = Schottky Diode
- 2x61 = 2 x Current (120 A)
- 0045 = Voltage (45 V)
- A = SOT-227B Version A
- YY = Year
- WW = Work Week
- Z = Plant Location Code
- xxxx = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSS2x61-0045A	DSS2x61-0045A	Tube	10 pcs/ tube

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