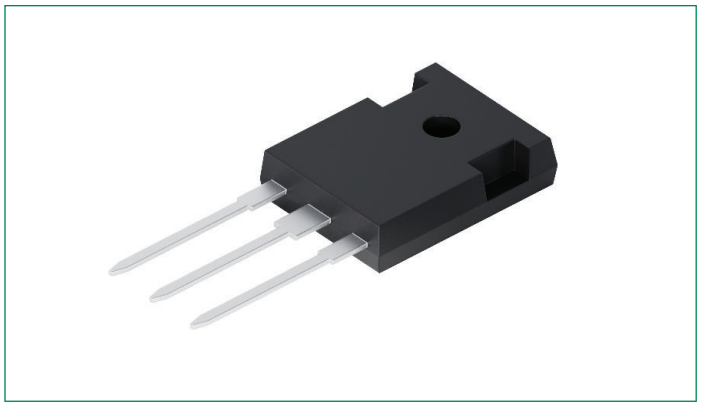
DSA50C100HB

100 V, 2 x 25 A High-Performance Schottky Diode

Low Loss and Soft Recovery Common Cathode

RoHS



Features

- Extremely low switching losses
- Very low V_F

Benefits

- Low voltage peaks for reduced protection circuits
- High reliability circuit operation
- Low-noise switching
- Improved thermal behavior
- Longer lifetime of the system

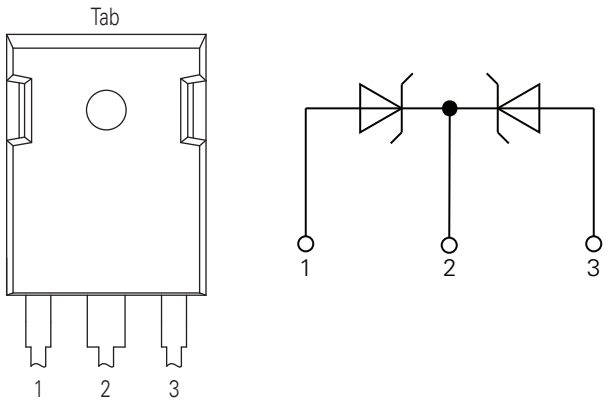
Applications

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

Package

- RoHS compliant
- Epoxy meets UL 94V-0
- Industry standard outline

Pinout Diagram (TO-247)



1: Anode; **2:** Cathode ; **3:** Anode; **Tab:** Cathode

Product Summary

Characteristic	Value	Unit
V_{RRM}	100	V
$I_{F(AV)}$	2 x 25	A
V_F	0.72	V

Revised: TK.12/30/2024

Maximum Ratings

Symbol	Characteristics	Condition	Value	Units
V_{RSM}	Non-repetitive Reverse Blocking Voltage	T_{vj} = 25 °C	100	V
V_{RRM}	Repetitive Reverse Blocking Voltage	T_{vj} = 25 °C	100	V
$I_{F(AV)}$	Average Forward Current	T_c = 162 °C, T_{vj} = 175 °C, Rectangular d = 0.5	25	A
I_{FSM}	Non-repetitive Forward Surge Current	t = 10 ms, (50 Hz), half sine, T_{vj} = 45 °C	400	A
$V_{(FO)}$	Threshold Voltage	T_{vj} = 175 °C	0.57	V
r_F	Slope Resistance		3.4	mΩ
P_{tot}	Total Power Dissipation	T_c = 25 °C	215	W
T_{stg}	Storage Temperature Range	–	-55 to +150	°C
T_{vj}	Virtual Junction Temperature Range	–	-55 to +175	°C
T_{op}	Operating Temperature Range	–	-55 to +150	°C

Electrical Characteristics – Static

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
I_R	Reverse Current	V_R = 100 V, T_{vj} = 25 °C	–	–	0.5	mA
		V_R = 100 V, T_{vj} = 125 °C	–	–	16	
V_F	Forward Voltage	I_F = 25 A; Pulse, T_{vj} = 25 °C	–	–	0.87	V
		I_F = 50 A; Pulse, T_{vj} = 25 °C	–	–	0.99	
		I_F = 25 A; Pulse, T_{vj} = 125 °C	–	–	0.72	
		I_F = 50 A; Pulse, T_{vj} = 125 °C	–	–	0.85	
C_j	Junction Capacitance	V_R = 5 V, f = 1 MHz, T_{vj} = 25 °C	–	643	–	pF

Thermal Specifications

Symbol	Characteristics	Value			Units
		Min.	Typ.	Max.	
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	–	–	0.7	K/W
$R_{th(c-h)}$	Thermal Resistance, Case to Heatsink	–	0.3	–	K/W

Package (TO-247)

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
I_{tRMS}	RMS Current	per terminal	–	–	50	A
M_s	Mounting Torque for Screw to Heatsink	–	0.8	–	1.2	Nm
F_C	Mounting Force with Clip	–	20	–	120	N
G	Weight	–	–	6	–	g

Characteristic Curves

Figure 1. Maximum Forward Characteristics

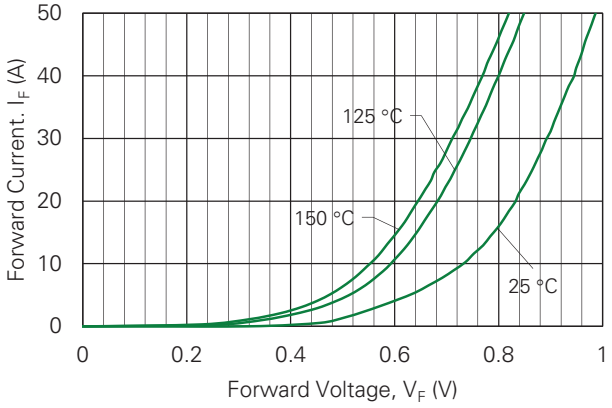


Figure 2. Typical Reverse Current vs. Reverse Voltage

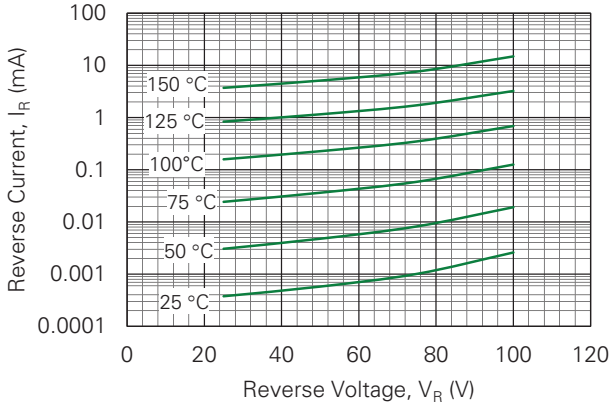


Figure 3. Typical Junction Capacitance vs. Reverse Voltage

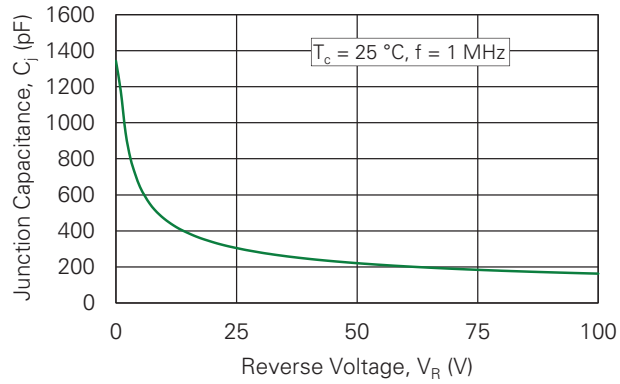


Figure 4. Average Forward Current vs. Case Temperature

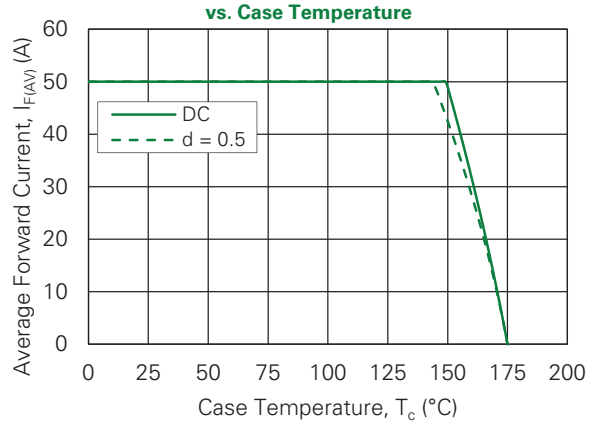


Figure 5. Forward Power Loss Characteristics

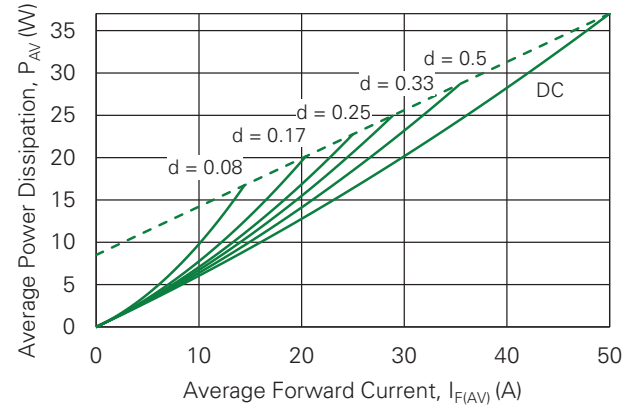
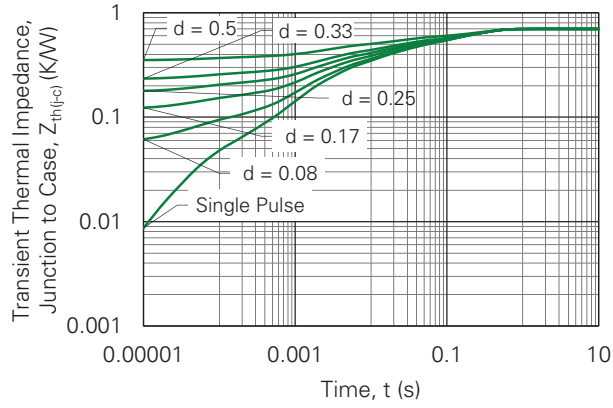
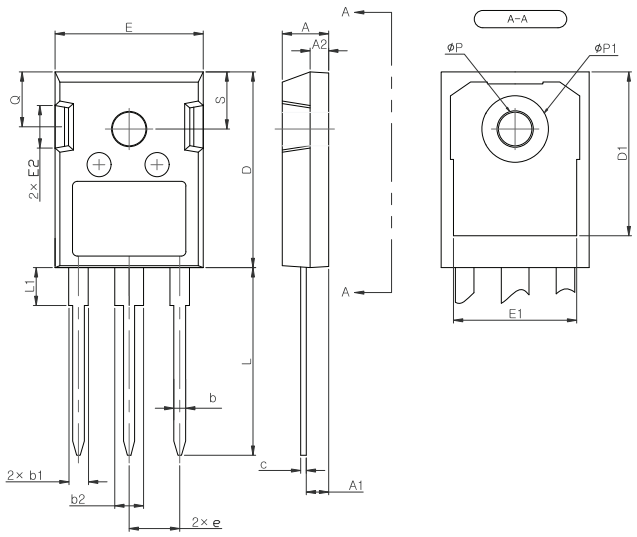


Figure 6. Transient Thermal Impedance

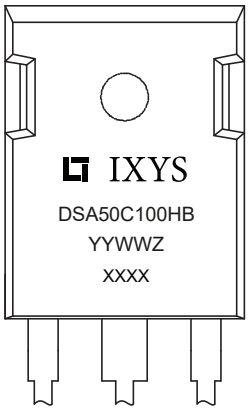


Part Outline Drawing (TO-247)



Symbol	Inches		Millimeters	
	Min.	Max.	Min.	Max.
A	0.189	0.205	4.80	5.20
A1	0.090	0.10	2.29	2.54
A2	0.075	0.083	1.90	2.10
b	0.043	0.051	1.10	1.30
b1	0.075	0.087	1.91	2.20
b2	0.115	0.126	2.92	3.20
c	0.020	0.027	0.50	0.70
D	0.819	0.840	20.80	21.34
D1	0.686	0.702	17.43	17.83
E	0.620	0.635	15.75	16.13
E1	0.514	0.530	13.06	13.46
E2	0.170	0.190	4.32	4.83
e	0.215 BSC		5.45 BSC	
L	0.781	0.797	19.85	20.25
L1	–	0.177	–	4.49
Ø P	0.140	0.144	3.55	3.65
Ø P1	0.281-	0.285	7.14	7.24
Q	0.220	0.244	5.59	6.19
S	0.242 BSC		6.15 BSC	

Part Number and Marking



D = Diode
S = Schottky Diode
A = Low V_F
50 = Current (2 x 25 A)
C = Common Cathode
100 = Voltage (100 V)
HB = Package (TO-247)
YY = Year
WW = Work Week
Z = Plant Location Code
xxxx = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSA50C100HB	DSA50C100HB	Tube	30 pcs/ tube