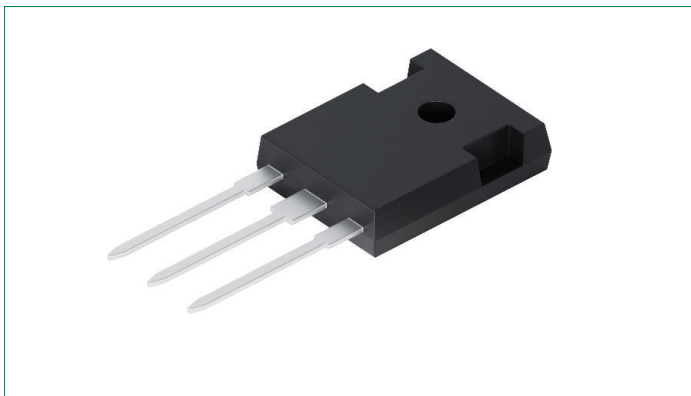


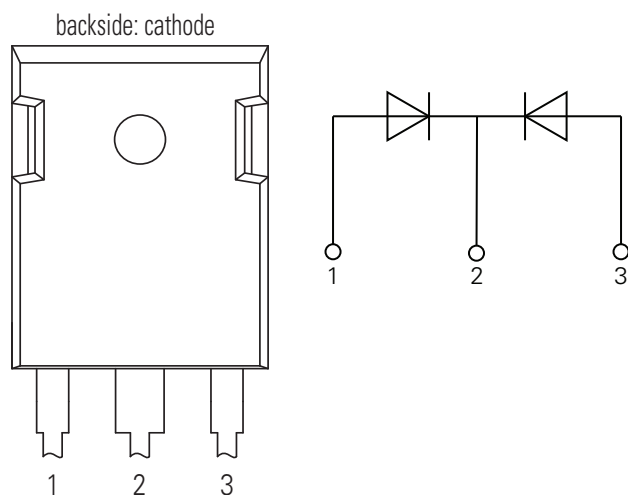
DSSK80-0045B

45 V, 2 x 40 A Schottky Diode

RoHS

**Features:**

- Very low V_F
- Extremely low switching losses
- Low I_{RM} values
- Improved thermal behavior
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low-noise switching
- RoHS compliant
- Epoxy meets UL 94V-0

Pinout Diagram (TO-247)**1:** Anode; **2:** Cathode; **3:** Anode**Applications:**

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

Product Summary

Characteristic	Value	Unit
V_{RRM}	45	V
I_{FAV}	2 x 40	A
V_F	0.49	V

Maximum Ratings

Symbol	Characteristics	Condition	Value	Units
V_{RSM}	Maximum Non-repetitive Reverse Blocking Voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	45	V
V_{RRM}	Maximum Repetitive Reverse Blocking Voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	45	V
I_R	Reverse Current	$V_R = 45\text{ V}, T_{vj} = 25\text{ }^{\circ}\text{C}$	5	mA
		$V_R = 45\text{ V}, T_{vj} = 125\text{ }^{\circ}\text{C}$	800	
$I_{F(AV)}$	Average Forward Current Rectangular d = 0.5	$T_c = 108^{\circ}\text{C}, T_{vj} = 125\text{ }^{\circ}\text{C}$	40	A
I_{FSM}	Maximum Forward Surge Current (Half Sine)	t = 10 ms, (50 Hz), $T_{vj} = 45\text{ }^{\circ}\text{C}$	600	A
P_{tot}	Total Power Dissipation	$T_c = 25\text{ }^{\circ}\text{C}$	140	W
T_{vj}	Virtual Junction Temperature Range	–	-55 to +125	$^{\circ}\text{C}$
T_{op}	Operating Temperature Range	–	-55 to +125	$^{\circ}\text{C}$

Electrical Characteristics

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
V_F	Forward Voltage Drop	$I_F = 40\text{ A}; \text{ Pulse}, T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.53	V
		$I_F = 80\text{ A}; \text{ Pulse}, T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.67	
		$I_F = 40\text{ A}; \text{ Pulse}, T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.49	
		$I_F = 80\text{ A}; \text{ Pulse}, T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.63	
$V_{(FO)}$	Threshold Voltage	$T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.35	V
r_F	Slope Resistance		–	–	3.3	m Ω
C_j	Junction Capacitance	$V_R = 5\text{ V}, T_{vj} = 25\text{ }^{\circ}\text{C}, f = 1\text{ MHz}$	–	4100	–	pF

Thermal Specifications

Symbol	Characteristics	Condition	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 Heat Sink	–	–	0.3	–	K/W

Package

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
I_{RMS}	RMS Current	per terminal	–	–	70	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 Voltage Drop Characteristics

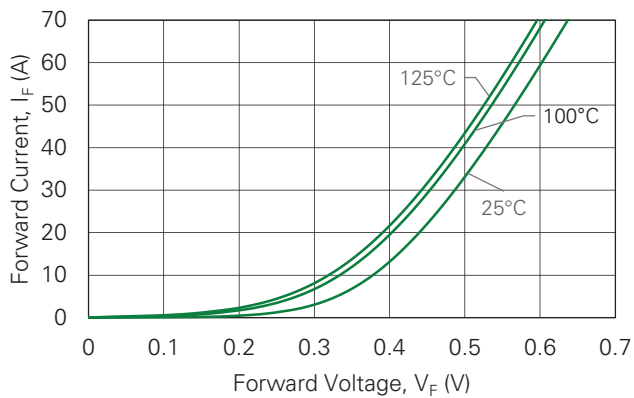


Figure 2. Typical Reverse Current vs. Reverse Voltage

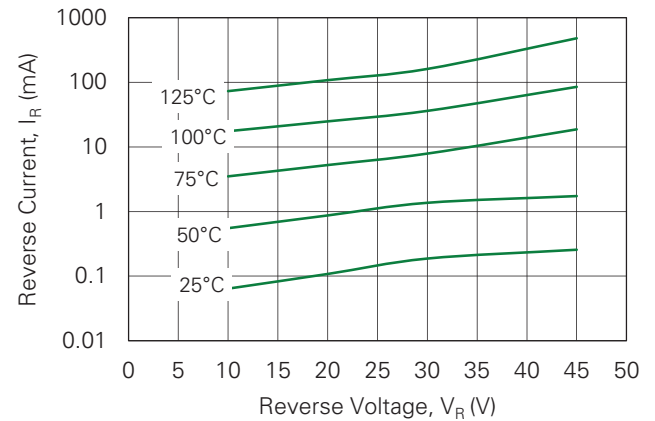


Figure 3. Typical Junction Capacitance vs. Reverse Voltage

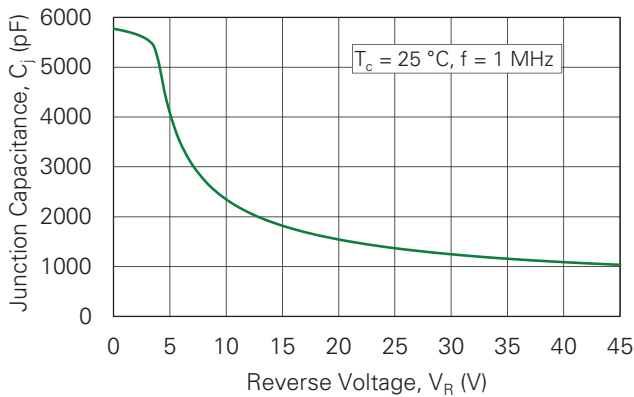


Figure 4. Average Forward Current vs. Case Temperature

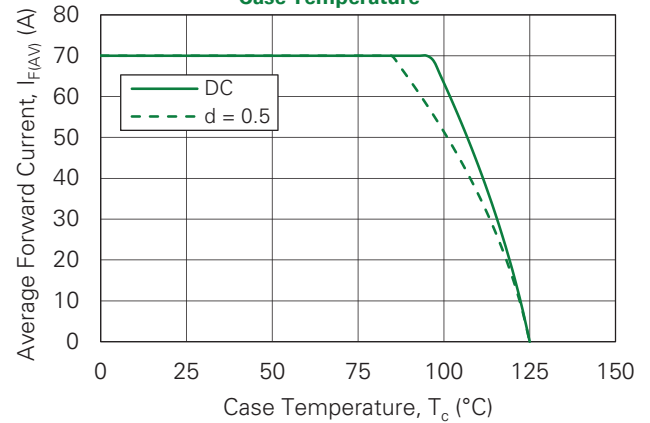


Figure 5. Forward Power Loss Characteristics

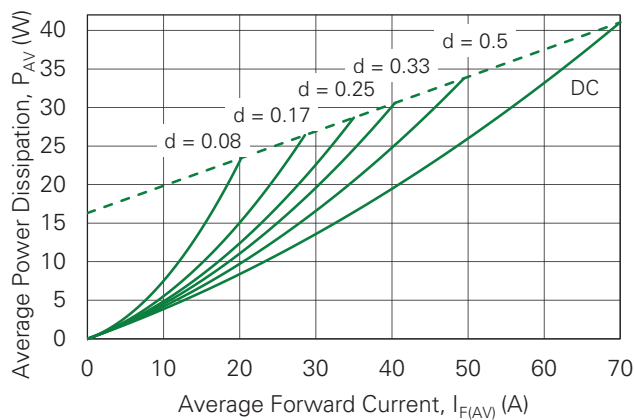
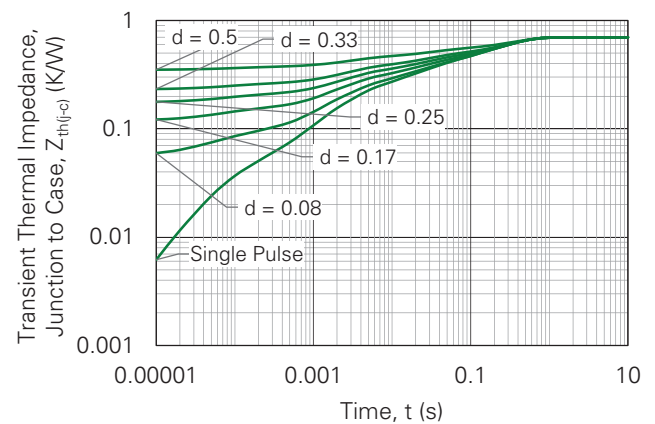
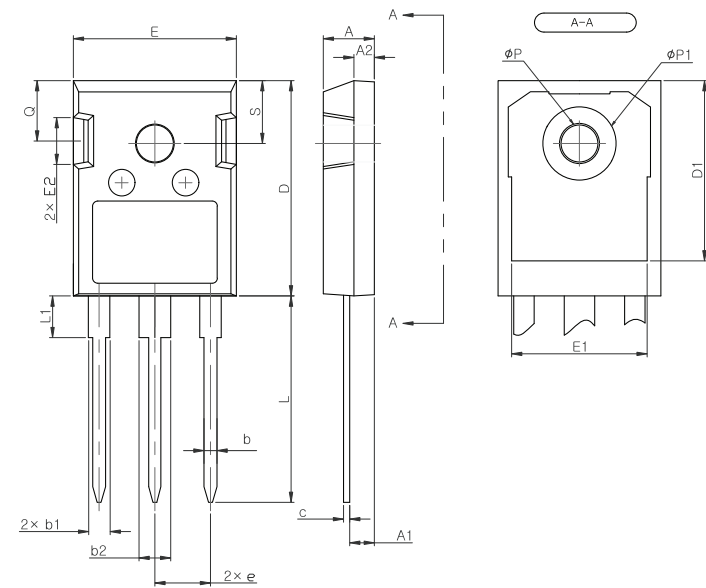


Figure 6. Transient Thermal Impedance

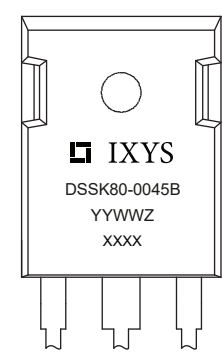


Part Outline Drawing (TO-247)



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
- SK = Product Generation
- 80 = Current Rate
- 0045 = Voltage Rating
- B = Package Code
- YY = Year
- WW = Work Week
- Z = Plant Location Code
- xxxx = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSSK80-0045B	DSSK80-0045B	Tube	30 pcs/ tube

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Part of:

