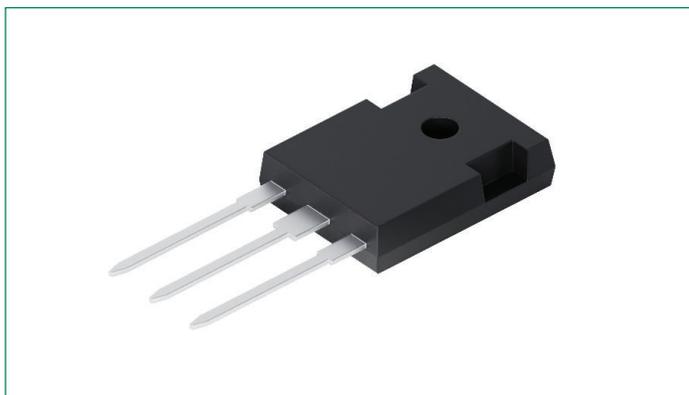


# DSSK80-003B

## 30 V, 2 x 40 A High-Performance Schottky Diode

Low Loss and Soft Recovery Common Cathode

RoHS



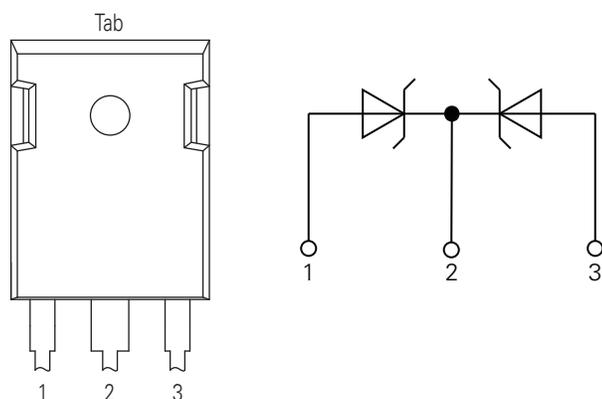
### Features

- 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

### Pinout Diagram (TO-247)



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

### 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

### Product Summary

Characteristic	Value	Unit
$V_{RRM}$	30	V
$I_{F(AV)}$	2 x 40	A
$V_F$	0.42	V

## Maximum Ratings

Symbol	Characteristics	Condition	Value	Units
$V_{RSM}$	Non-repetitive Reverse Blocking Voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	30	V
$V_{RRM}$	Repetitive Reverse Blocking Voltage	$T_{vj} = 25\text{ }^{\circ}\text{C}$	30	V
$I_{F(AV)}$	Average Forward Current	$T_c = 108\text{ }^{\circ}\text{C}$ , $T_{vj} = 125\text{ }^{\circ}\text{C}$ , Rectangular $d = 0.5$	40	A
$I_{FSM}$	Non-repetitive Forward Surge Current	$t = 10\text{ ms}$ , (50 Hz), half sine, $T_{vj} = 45\text{ }^{\circ}\text{C}$	720	A
$V_{(FO)}$	Threshold Voltage	$T_{vj} = 125\text{ }^{\circ}\text{C}$	0.43	V
$r_F$	Slope Resistance		3.3	m $\Omega$
$P_{tot}$	Total Power Dissipation	$T_c = 25\text{ }^{\circ}\text{C}$	250	W
$T_{stg}$	Storage Temperature Range	–	-55 to +125	$^{\circ}\text{C}$
$T_{vj}$	Virtual Junction Temperature Range	–	-55 to +125	$^{\circ}\text{C}$
$T_{op}$	Operating Temperature Range	–	-55 to +125	$^{\circ}\text{C}$

## Electrical Characteristics – Static

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
$I_R$	Reverse Current	$V_R = 30\text{ V}$ , $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	6	mA
		$V_R = 30\text{ V}$ , $T_{vj} = 100\text{ }^{\circ}\text{C}$	–	–	220	
$V_F$	Forward Voltage	$I_F = 40\text{ A}$ ; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.52	V
		$I_F = 80\text{ A}$ ; Pulse, $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	–	0.64	
		$I_F = 40\text{ A}$ ; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.42	
		$I_F = 80\text{ A}$ ; Pulse, $T_{vj} = 125\text{ }^{\circ}\text{C}$	–	–	0.58	
$C_j$	Junction Capacitance	$V_R = 5\text{ V}$ , $f = 1\text{ MHz}$ , $T_{vj} = 25\text{ }^{\circ}\text{C}$	–	2478	–	pF

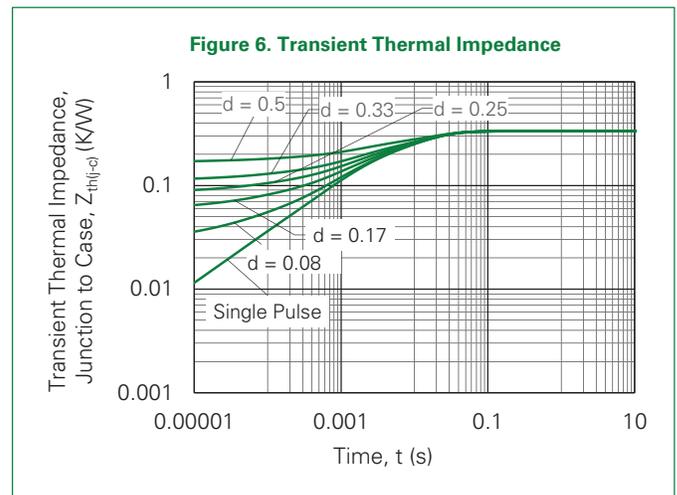
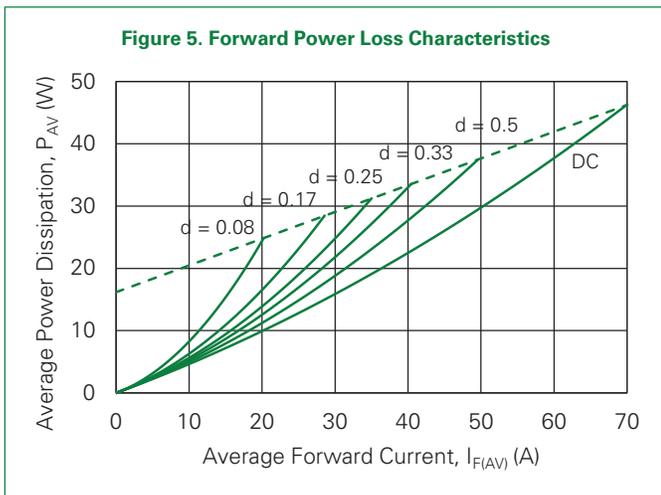
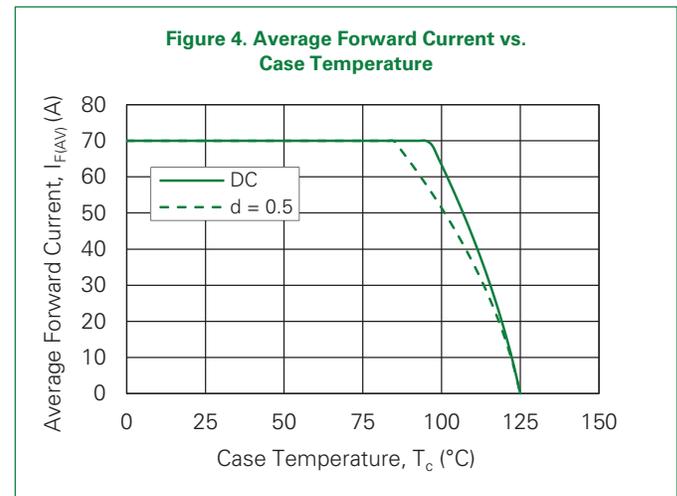
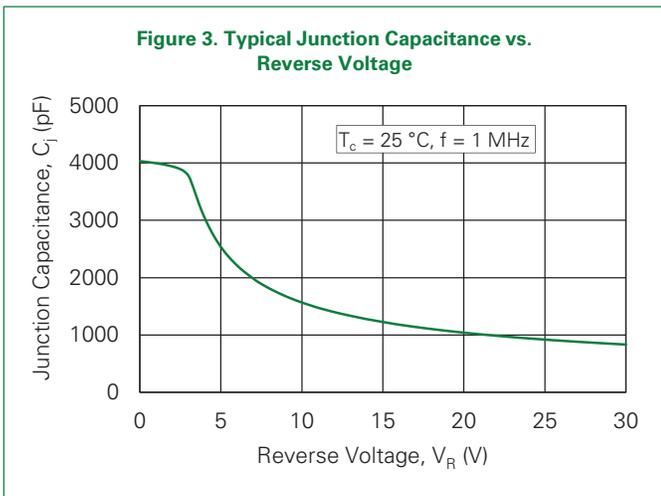
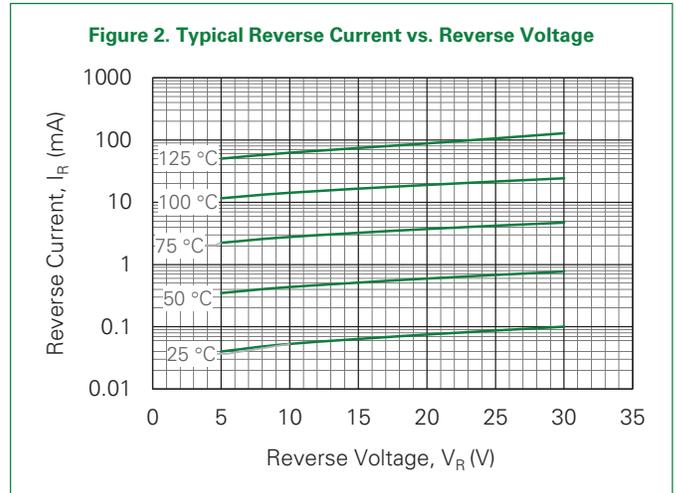
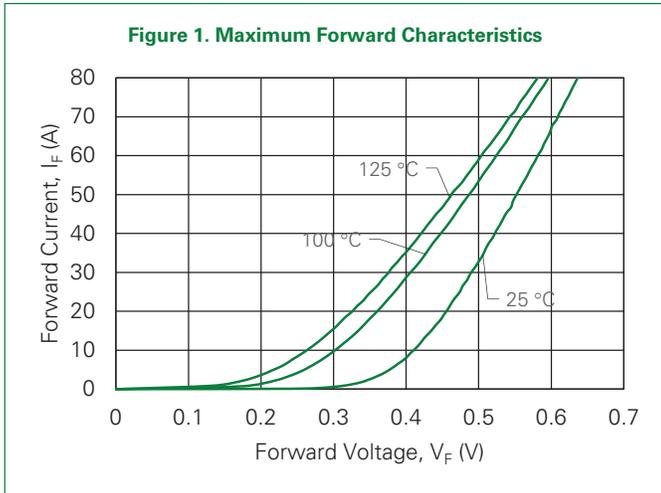
## Thermal Specifications

Symbol	Characteristics	Value			Units
		Min.	Typ.	Max.	
$R_{th(j-c)}$	Thermal Resistance, Junction to Case	–	–	0.4	K/W
$R_{th(c-h)}$	Thermal Resistance, Case to Heatsink	–	0.3	–	K/W

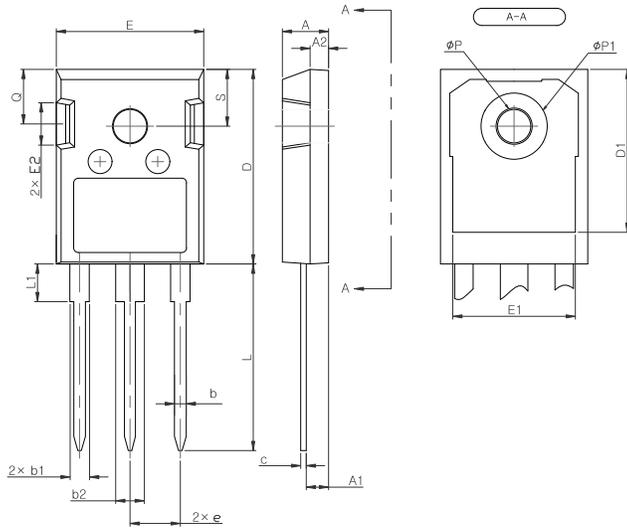
## Package (TO-247)

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
$I_{tRMS}$	RMS Current	per terminal	–	–	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

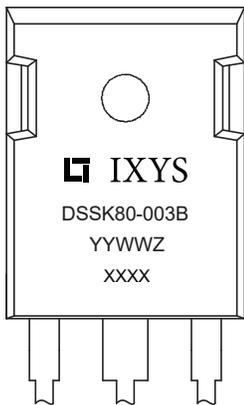


Part Outline Drawing (TO-247)



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 (2 x 40 A)
- 003 = Voltage (30 V)
- B = Package (TO-247)
- YY = Year
- WW = Work Week
- Z = Plant Location Code
- xxxx = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSSK80-003B	DSSK80-003B	Tube	30 pcs/ tube

Disclaimer Notice

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Part of:

