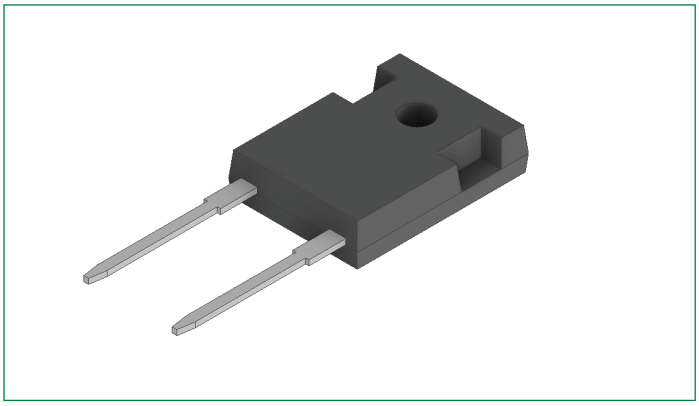
DSS60-0045B

45 V, 60 A Schottky Diode

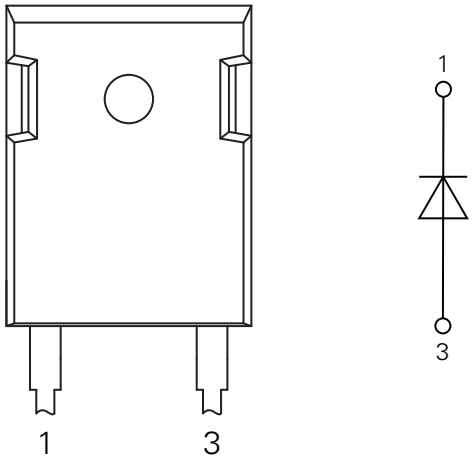
RoHS



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-247-2L)



1: 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
$I_{F(AV)}$	60	A
V_F	0.56	V

Maximum Ratings

Symbol	Characteristics	Condition	Value	Units
V_{RSM}	Maximum Non-repetitive Reverse Blocking Voltage	T_{vj} = 25 °C	45	V
V_{RRM}	Maximum Repetitive Reverse Blocking Voltage	T_{vj} = 25 °C	45	V
I_{RMS}	RMS Current	per terminal	70	A
I_R	Reverse Current	V_R = 45 V, T_{vj} = 25 °C	5	mA
		V_R = 45 V, T_{vj} = 125 °C	800	
$I_{F(AV)}$	Average Forward Current Rectangular d = 0.5	T_c = 94 °C, T_{vj} = 125 °C	60	A
I_{FSM}	Maximum Forward Surge Current (Half Sine)	t = 10 ms, (50 Hz), T_{vj} = 45 °C	600	A
P_{tot}	Total Power Dissipation	T_c = 25 °C	140	W
T_{vj}	Virtual Junction Temperature Range	–	-55 to +125	°C
T_{op}	Operating Temperature Range	–	-55 to +125	°C

Electrical Characteristics

Symbol	Characteristics	Conditions	Value			Units
			Min.	Typ.	Max.	
V_F	Forward Voltage Drop	I_F = 60 A; Pulse, T_{vj} = 25 °C	–	–	0.60	V
		I_F = 120 A; Pulse, T_{vj} = 25 °C	–	–	0.80	
		I_F = 60 A; Pulse, T_{vj} = 125 °C	–	–	0.56	
		I_F = 120 A; Pulse, T_{vj} = 125 °C	–	–	0.75	
$V_{(FO)}$	Threshold Voltage	T_{vjm} = 125 °C	–	–	0.38	V
r_F	Slope Resistance		–	–	3.0	mΩ
C_j	Junction Capacitance	V_R = 5 V, T_{vjm} = 25 °C, f = 1 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

Revised: TK.12/26/2024

Characteristic Curves

Figure 1. Maximum Forward Voltage Drop Characteristics

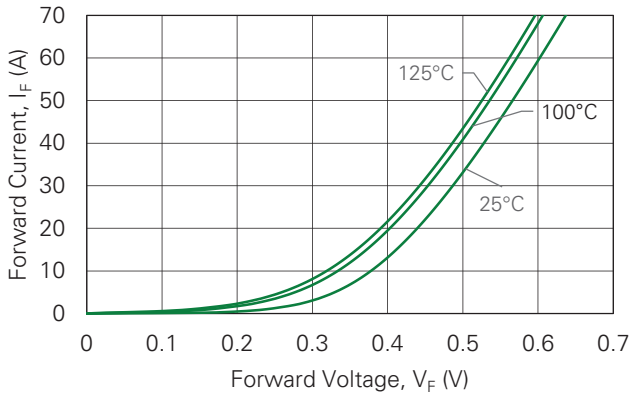


Figure 2. Typical Reverse Current vs. Reverse Voltage

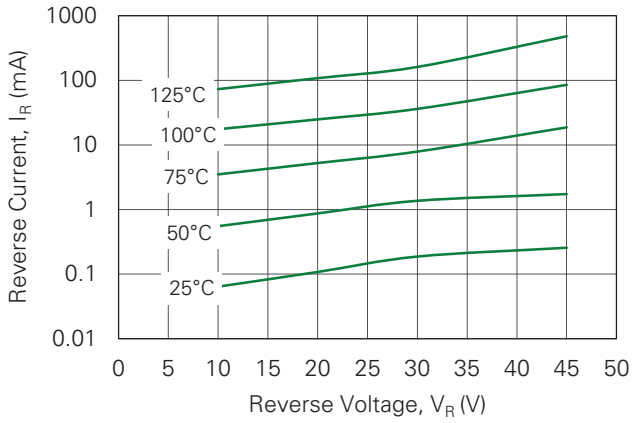


Figure 3. Typical Junction Capacitance vs. Reverse Voltage

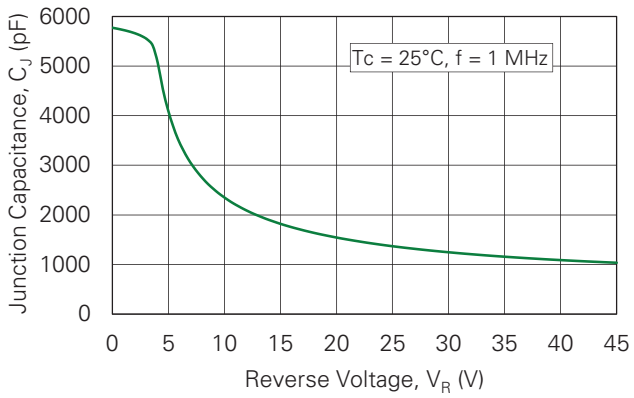


Figure 4. Average Forward Current vs. Case Temperature

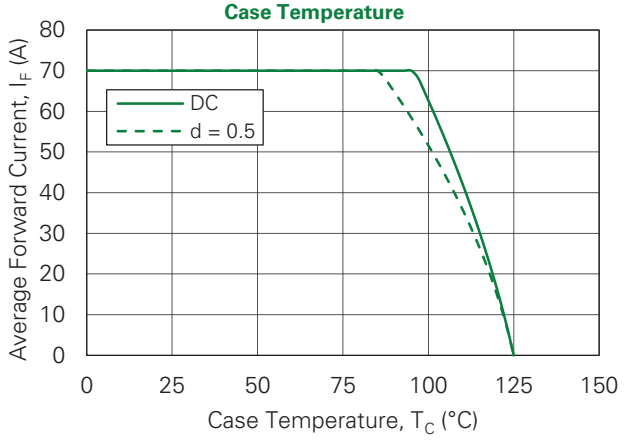


Figure 5. Forward Power Loss Characteristics

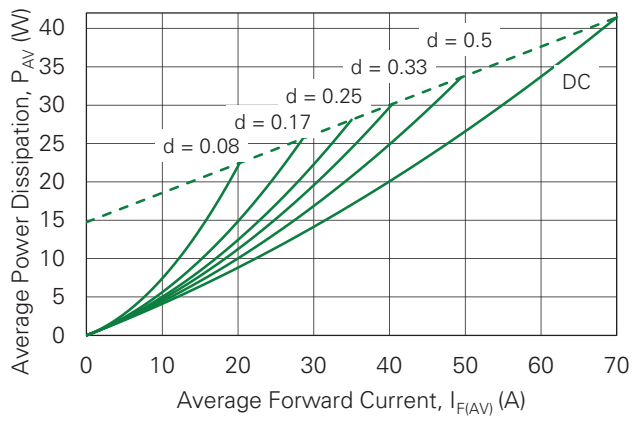
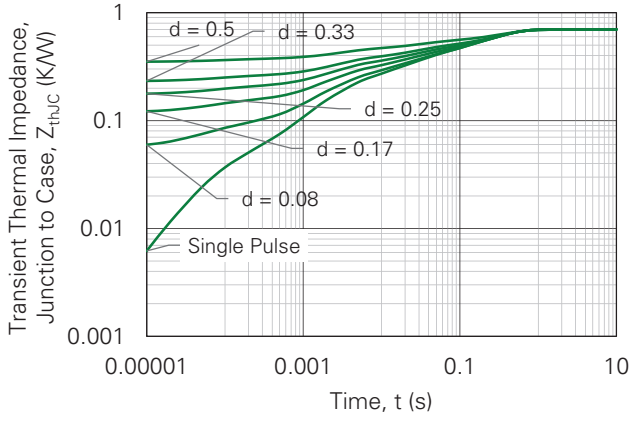


Figure 6. Transient Thermal Impedance



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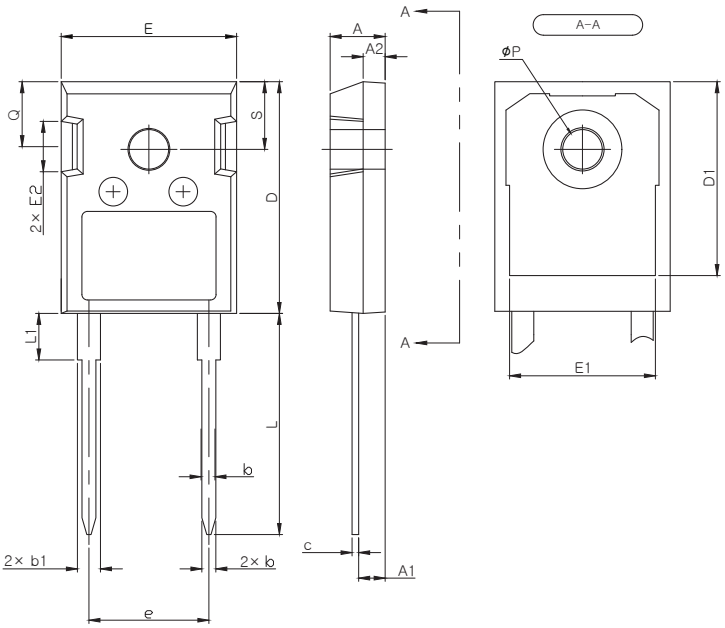
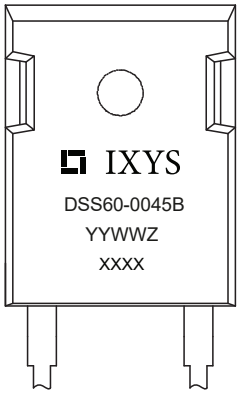
Part Outline Drawing (TO-247-2L)



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
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	0.429 BSC		10.90 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
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
S = Product Generation
60 = 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
DSS60-0045B	DSS60-0045B	Tube	30 pcs/ tube