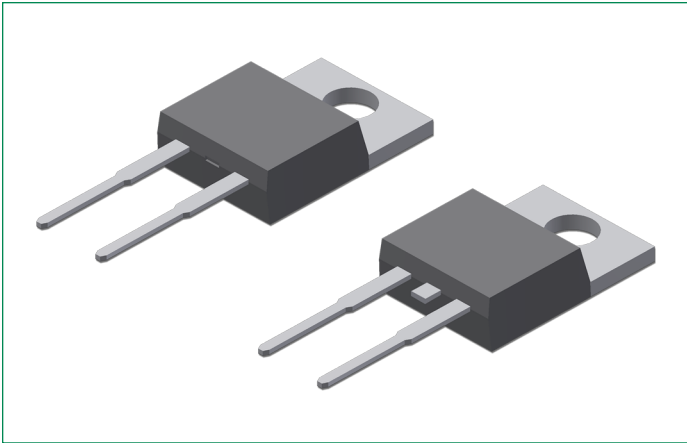


DSS10-0045B

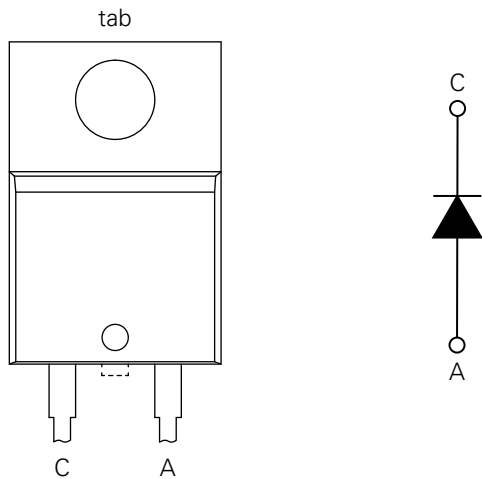
45 V, 10 A Schottky Rectifier Diode

RoHS

Pb

**Features & Benefits:**

- 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
- Terminals finish: 100% Pure Tin
- This is a Pb – Free Device
- Epoxy meets UL 94V-0

Pinout Diagram (TO-220AC)**C:** Cathode; **A:** Anode; **tab:** Cathode**Applications:**

- Rectifiers in switch mode power supplies (SMPS)
- Free wheeling diode in low voltage converters

Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Characteristics	Condition	Max.	Units
V_{RRM}	Peak Repetitive Reverse Voltage	-	45	V
V_{RWM}	Working Peak Reverse Voltage			
V_R	DC Blocking Voltage			
$I_{F(AV)}$	Average Rectified Forward Current	50% duty cycle @ $T_C=135^\circ\text{C}$, rectangular wave form	10	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$	200	A
P_{tot}	Total power dissipation	$T_C = 25^\circ\text{C}$	75	W
E_{AS}	Non-repetitive avalanche energy	$I_{AS} = 20\text{A}$, $L=100\mu\text{H}$, $T_J=25^\circ\text{C}$	20	mJ
I_{AR}	Repetitive avalanche current	$V_A = 1.5 \cdot V_R$, typ. $f=10\text{ kHz}$	2	A

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop ¹	@ 10A, Pulse, $T_J = 25^\circ\text{C}$	–	0.55	V
V_{F1}		@ 10A, Pulse, $T_J = 125^\circ\text{C}$	–	0.50	V
I_{R1}	Reverse Current*	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	–	10	mA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_J = 100^\circ\text{C}$	–	50	mA
C_T	Junction Capacitance	@ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	560	–	pF

Note 1: Pulse width < 300 μs , duty cycle < 2%**Thermal-Mechanical Specifications**

Symbol	Characteristics	Condition	Specification	Units
T_J	Junction Temperature	–	-55 to +150	$^\circ\text{C}$
T_O	Operation temperature	–	-55 to +125	$^\circ\text{C}$
T_{stg}	Storage Temperature	–	-55 to +150	$^\circ\text{C}$
M_D	Mounting torque	–	Min 0.4 Max 0.6	Nm
F_C	Mounting force with clip	–	Min 20 Max 60	N
$R_{\theta JC}$	Maximum Thermal Resistance Junction to Case	DC operation	1.7	$^\circ\text{C/W}$
$R_{\theta CS}$	Typical Thermal Resistance Junction to Heat Sink	–	0.5	$^\circ\text{C/W}$
wt	Approximate Weight	–	1.6	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

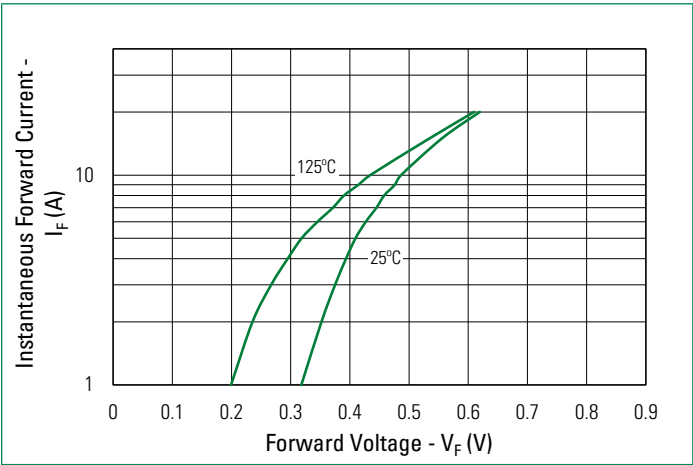


Fig. 2. Typical Reverse Characteristics

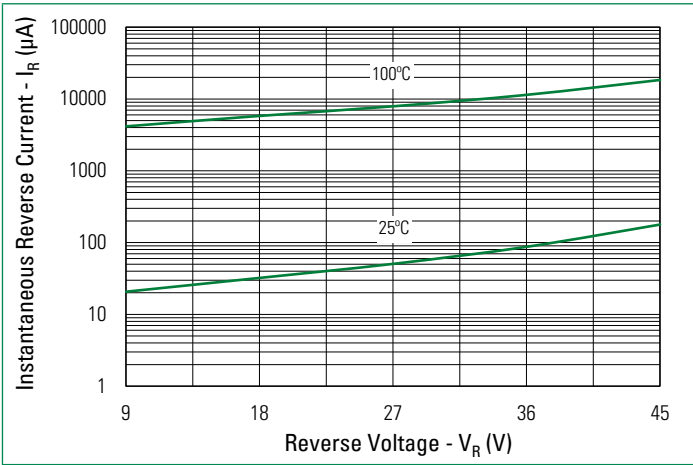
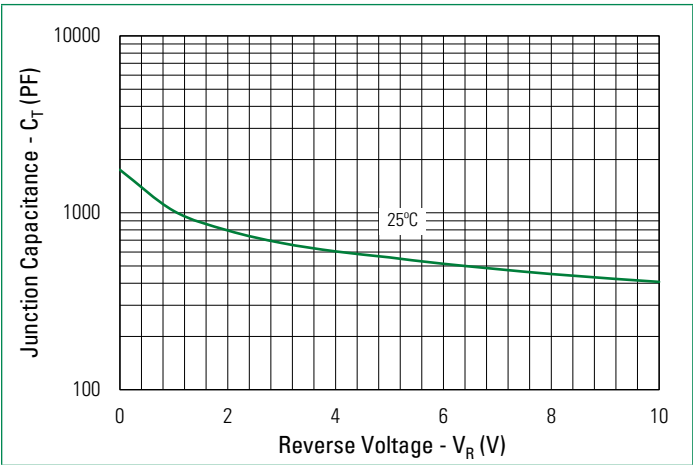
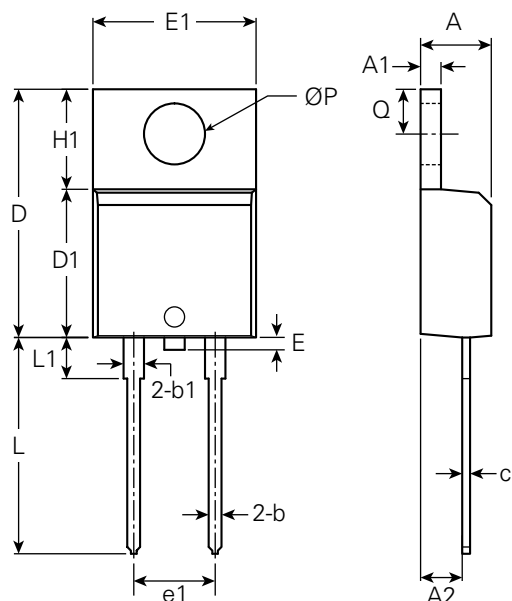


Fig. 3. Typical Junction Capacitance

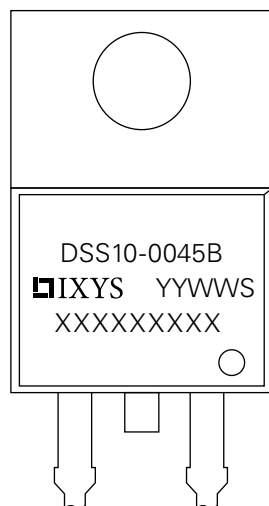


Part Outline Drawing (TO-220AC)



Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.14	–	0.19	3.56	–	4.83
A1	0.02	–	0.06	0.51	–	1.40
A2	0.08	–	0.11	2.03	–	2.92
b	0.01	–	0.04	0.38	–	1.02
b1	0.04	–	0.07	1.14	–	1.78
c	0.12	–	0.02	0.31	–	0.61
D	0.56	–	0.65	14.22	–	16.51
D1	0.33	–	0.37	8.38	–	9.42
E	–	–	0.07	–	–	1.78
E1	0.38	0.40	0.42	9.65	10.16	10.67
e1	–	0.20	–	–	5.08	–
H1	0.23	–	0.27	5.84	–	6.86
L	0.50	–	0.58	12.70	–	14.73
L1	–	–	0.25	–	–	6.35
Q	0.100	–	0.135	2.54	–	3.43
ØP	–	0.14	–	–	3.56	–

Part Number and Marking



DS = Schottky Diode
 S = Product Generation
 10 = Current Rating
 0045 = Voltage Rating
 B = Package Code
 YY = Year
 WW = Work Week
 S = Plant Location Code
 XXXXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	M.O.Q
DSS10-0045B	DSS10-0045B	Tube (50 pcs)	–

Packing Specifications

