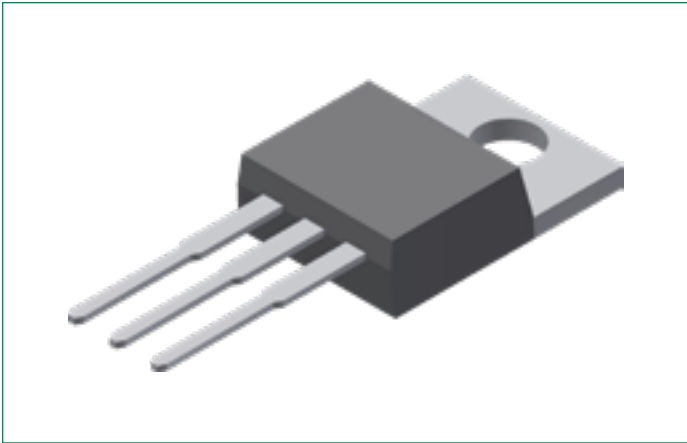


DSSK20-0045B

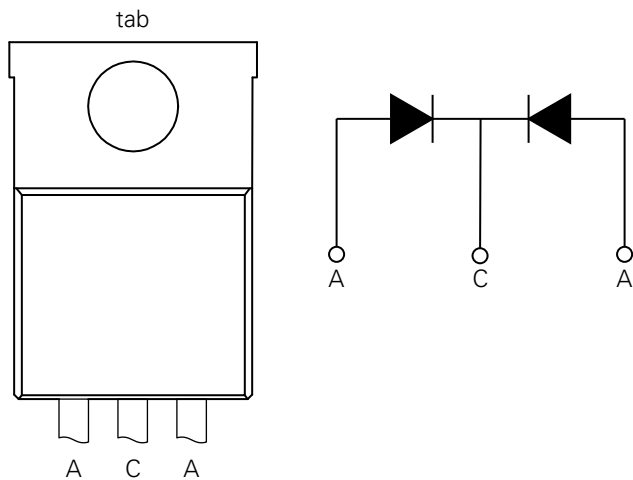
45 V, 20 A Schottky Rectifier Diode

RoHS

Pb

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

Pinout Diagram (TO-220AB)**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 (Per Leg) 20 (Per Device)	A
I_{FSM}	Peak One Cycle Non-repetitive Surge Current (Per Leg)	10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$	160	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	$V_A = 1.5 V_R$, typ. $f = 1\text{ kHz}$	2	A

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop (Per Leg) ¹	@ 10A, Pulse, $T_J = 25^\circ\text{C}$	–	0.51	V
V_{F2}		@ 10A, Pulse, $T_J = 125^\circ\text{C}$	–	0.46	V
I_{R1}	Reverse Current (Per Leg)*	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	–	5	mA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_J = 100^\circ\text{C}$	–	50	mA
C_T	Junction Capacitance (Per Leg)	@ $V_R = 5\text{V}$, $T_C = 25^\circ\text{C}$ $f_{sig} = 1\text{MHz}$	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 Case to Heat Sink	–	0.5	$^\circ\text{C/W}$
wt	Approximate Weight	–	2.0	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

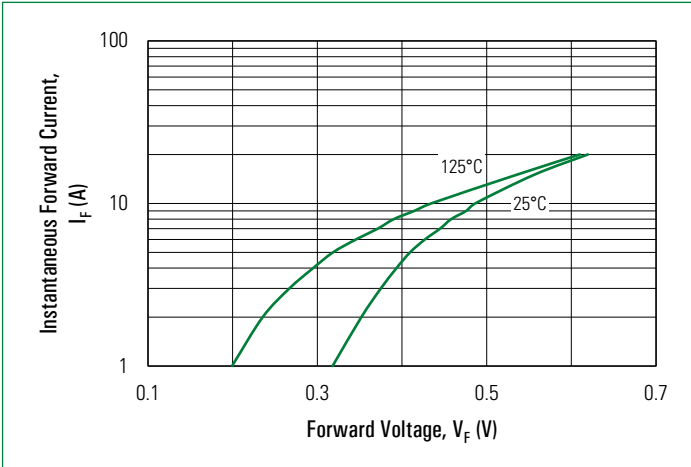


Fig. 2. Typical Reverse Characteristics

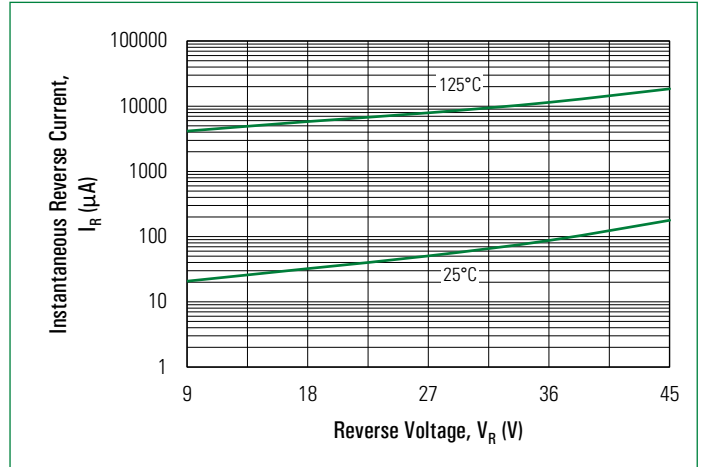
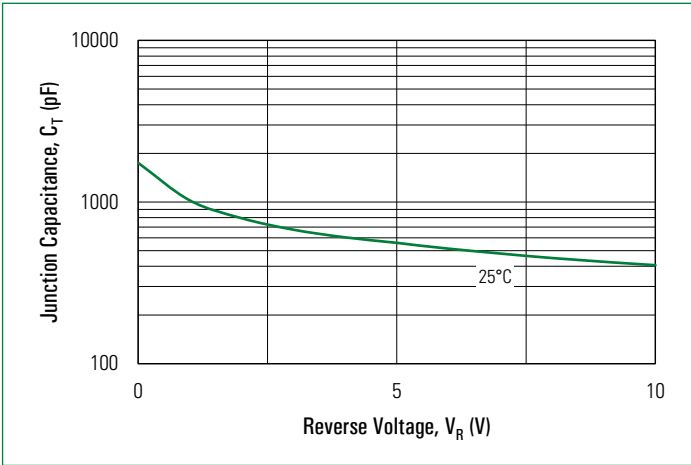
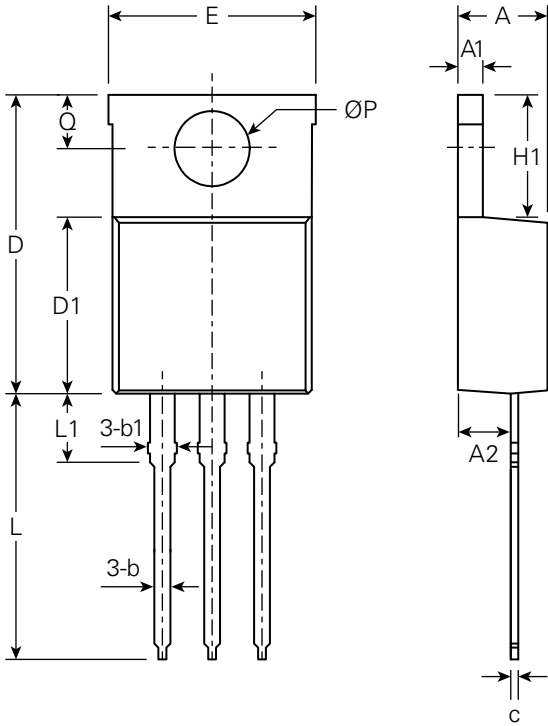


Fig. 3. Typical Junction Capacitance

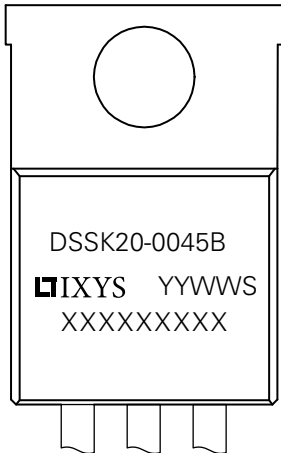


Part Outline Drawing (TO-220AB)



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	0.44	-	0.07	1.14	-	1.78
c	0.01	-	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	0.38	-	0.42	9.65	-	10.67
e	-	0.1	-	-	2.54	-
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
ØP	-	0.14	-	-	3.56	-
Q	0.10	-	0.14	2.54	-	3.43

Part Number and Marking

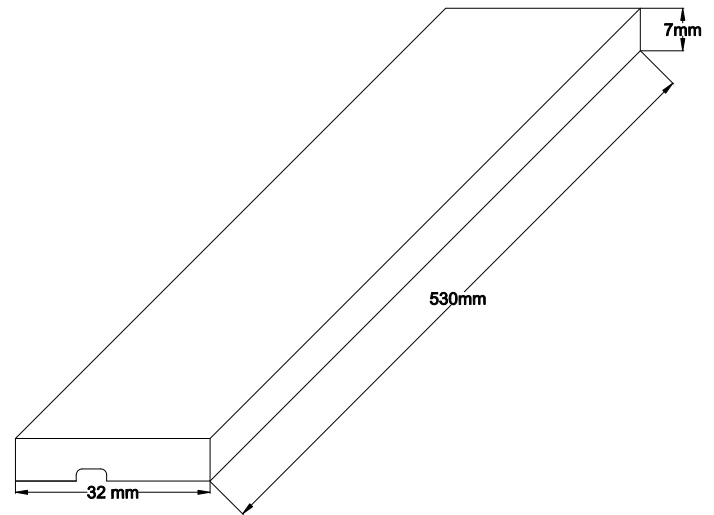


- DS = Schottky Diode
- SK = Product Generation
- 20 = Current Rate
- 0045 = Voltage Rating
- B = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSSK20-0045B	DSSK20-0045B	Tube	50 pcs/ tube

Packing Specifications



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