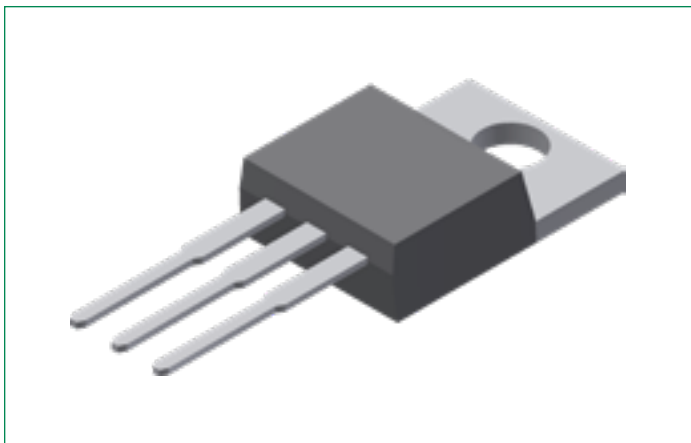


DSSK20-0045B

45 V, 20 A Schottky Rectifier Diode

RoHS

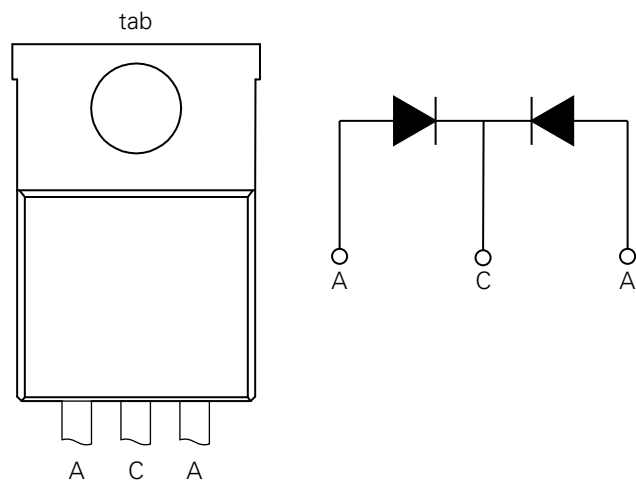
Pb



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)	A
			20 (Per Device)	
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	$I_{AS} = 20\text{ A}$, $L = 100\text{ }\mu\text{H}$, $T_J = 25^\circ\text{C}$	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

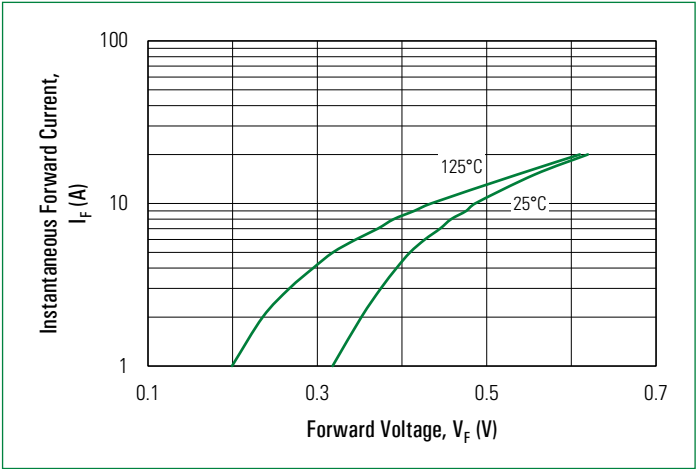


Fig. 2. Typical Reverse Characteristics

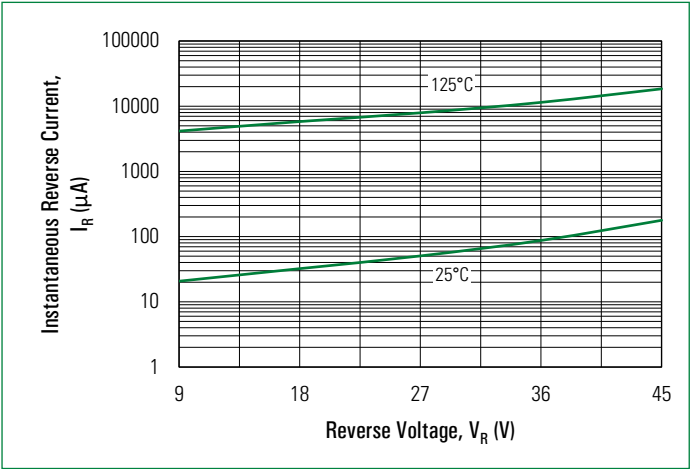
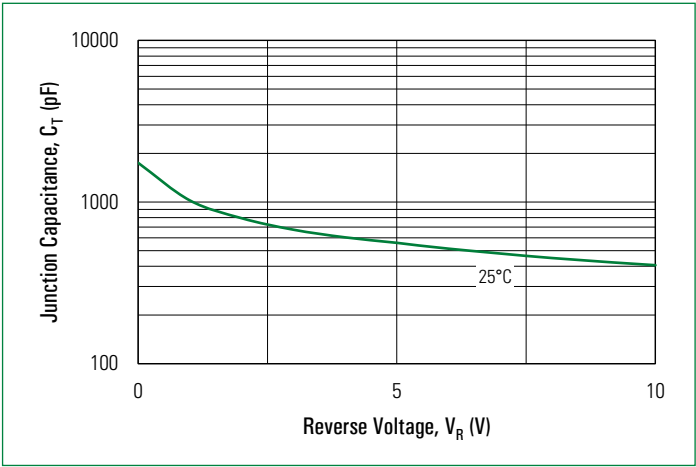
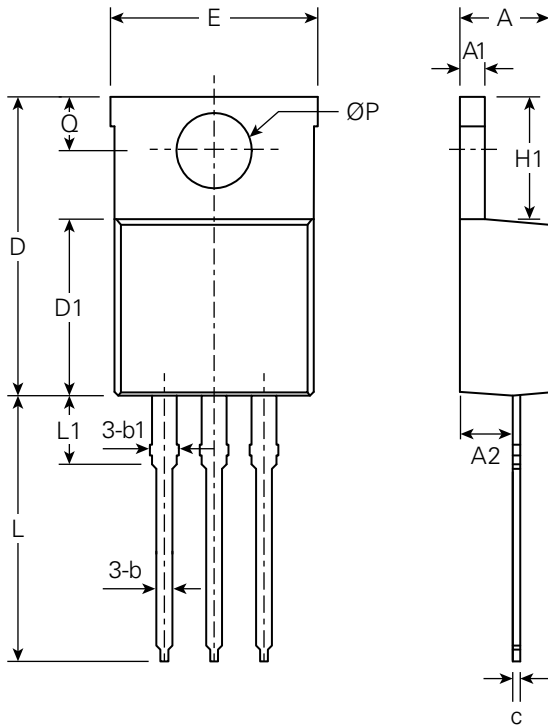


Fig. 3. Typical Junction Capacitance

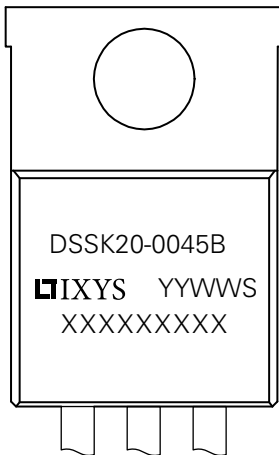


Part Outline Drawing (TO-220AB)



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

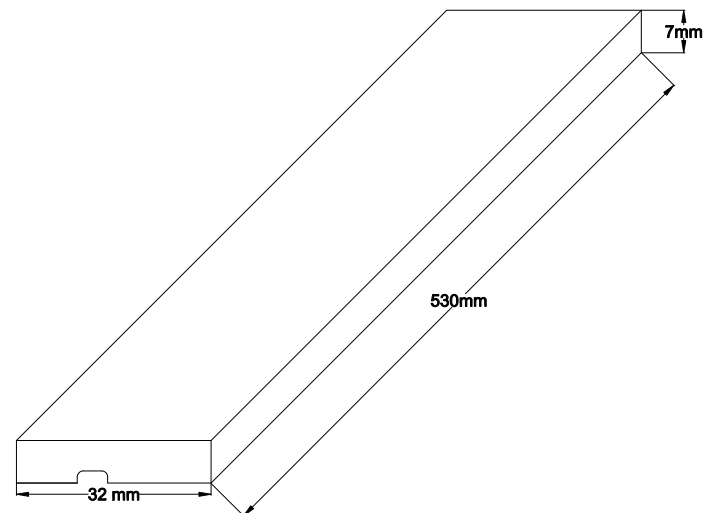


DS = Schottky Diode
 SK = Product Generation
 20 = Current Rate
 0045 = Voltage Rating
 B = Package Code
 YY = Year
 WW = Work Week
 S = Plant Location Code
 XXXXXXXXX = Lot Number

Ordering Information

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

Packing Specifications



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