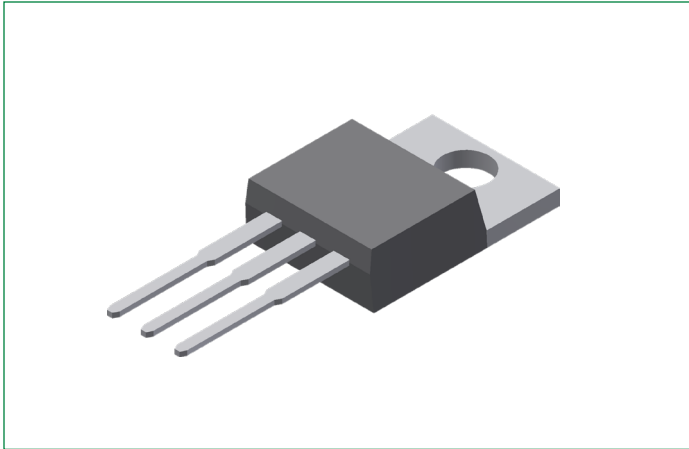


DSA30C45PB

45 V, 30 A Schottky Rectifier Diode

RoHS



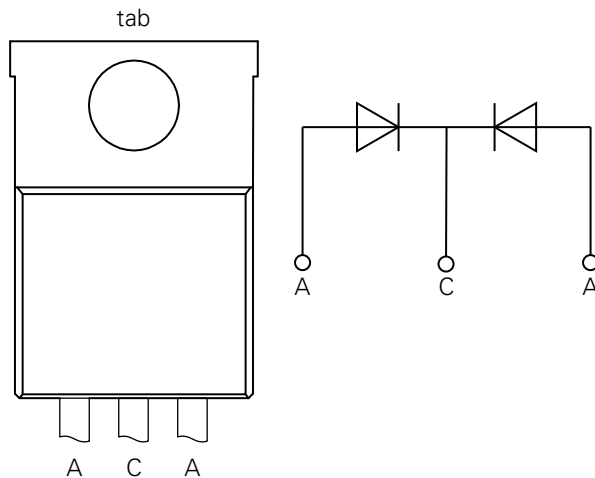
Features

- 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
- Terminals finish: 100% Pure Tin
- Epoxy meets UL 94V-0

Applications

- Rectifiers in Switch Mode Power Supplies (SMPS)
- Free wheeling diode in low voltage converters

Pinout Diagram (TO-220-3L AB)



C: Cathode; **A:** Anode; **tab:** Cathode

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 @ $T_C = 155^\circ\text{C}$, rectangular wave form	15 (Per Leg) 30 (Per Device)	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current (Per Leg)	10 ms, Half Sine pulse, $T_J = 25^\circ\text{C}$	340	A
P_{tot}	Total power dissipation	$T_C = 25^\circ\text{C}$	85	W

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	@ 15A, Pulse, $T_J = 25^\circ\text{C}$	–	0.75	V
V_{F2}		@ 15A, Pulse, $T_J = 125^\circ\text{C}$	–	0.63	V
I_{R1}	Reverse Current (Per Leg) ¹	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	–	250	uA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$	–	2.5	mA
C_T	Junction Capacitance (Per Leg)	@ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	522	–	pF

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

Symbol	Characteristics	Condition	Specification	Units
T_J	Junction Temperature	–	-55 to +175	$^\circ\text{C}$
T_O	Operation temperature	–	-55 to +150	$^\circ\text{C}$
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	1.75	$^\circ\text{C/W}$
$R_{\theta JS}$	Typical Thermal Resistance Junction to Heat Sink	–	0.5	$^\circ\text{C/W}$
wt	Approximate Weight	–	2	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

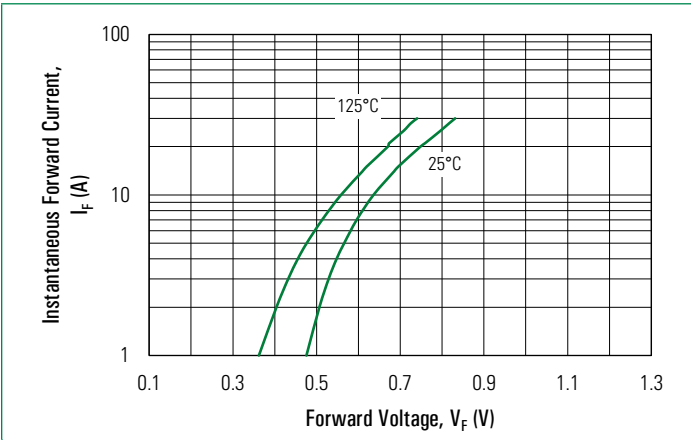


Fig. 2. Typical Reverse Characteristics

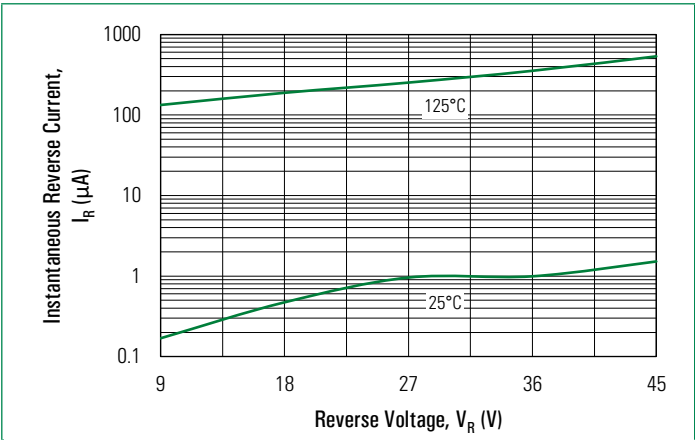
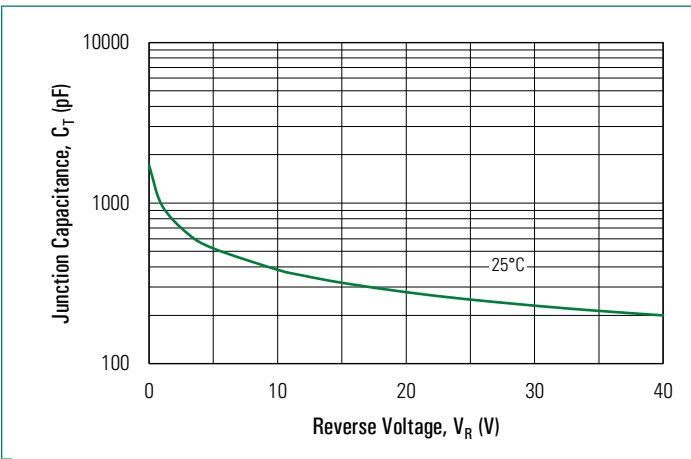
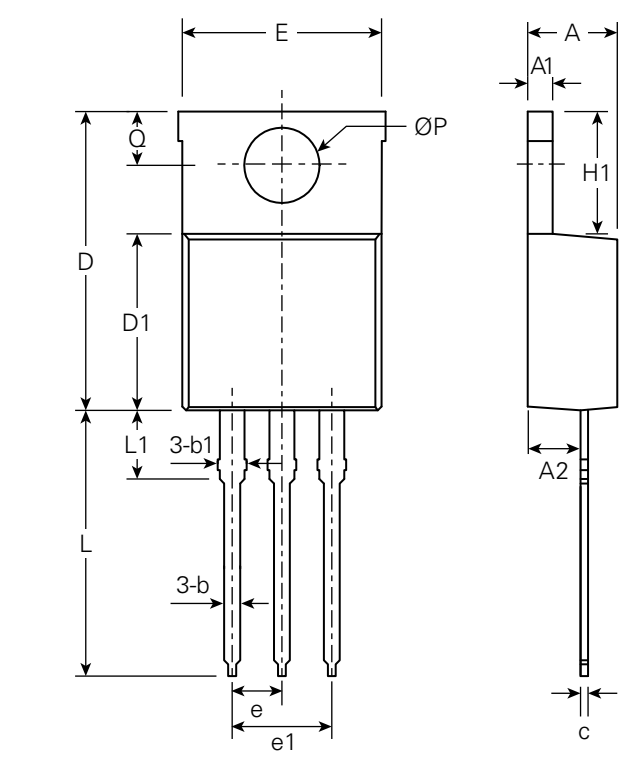


Fig. 3. Typical Junction Capacitance

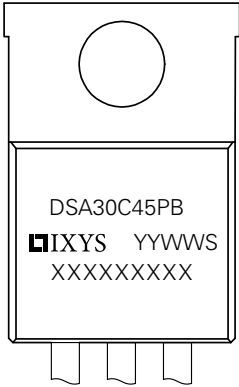


Part Outline Drawing (TO-220-3L AB)



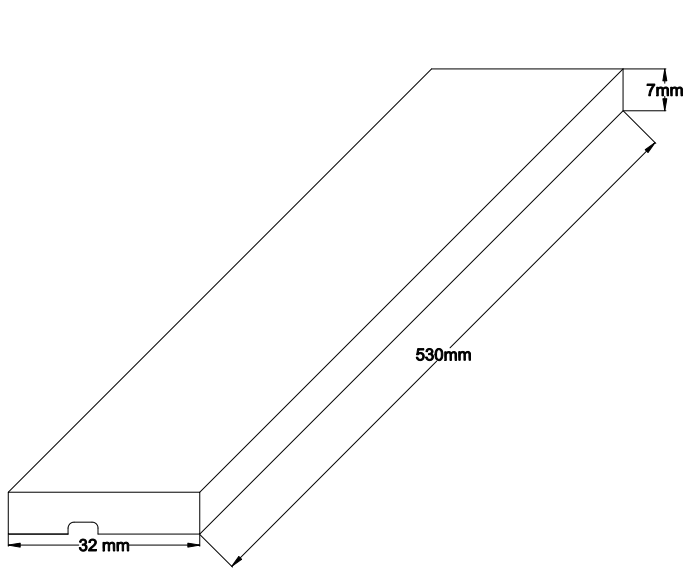
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.140	–	0.190	3.56	–	4.83
A1	0.020	–	0.055	0.51	–	1.40
A2	0.080	–	0.115	2.03	–	2.92
b	0.015	–	0.040	0.38	–	1.02
b1	0.045	–	0.070	1.14	–	1.78
c	0.012	–	0.024	0.31	–	0.61
D	0.560	–	0.650	14.22	–	16.51
D1	0.330	–	0.371	8.38	–	9.42
E	0.380	–	0.420	9.65	–	10.67
e	–	0.100	–	–	2.54	–
e1	–	0.200	–	–	5.08	–
H1	0.230	–	0.270	5.84	–	6.86
L	0.500	–	0.580	12.70	–	14.73
L1	–	–	0.250	–	–	6.35
ØP	–	0.140	–	–	3.56	–
Q	0.100	–	0.135	2.54	–	3.43

Part Number and Marking



- D = Diode
S = Schottky Diode
A Low VF
30 = Forward Current (30A)
C Common Cathode
45 = Reverse Voltage (45V)
PB = Package Code (TO-220AB)
YY = Year
WW = Work Week
S = Plant Location Code
XXXXXXXXX = Lot Number

Packing Specifications



Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSA30C45PB	DSA30C45PB	Tube	50 pcs/ tube

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Part of:

