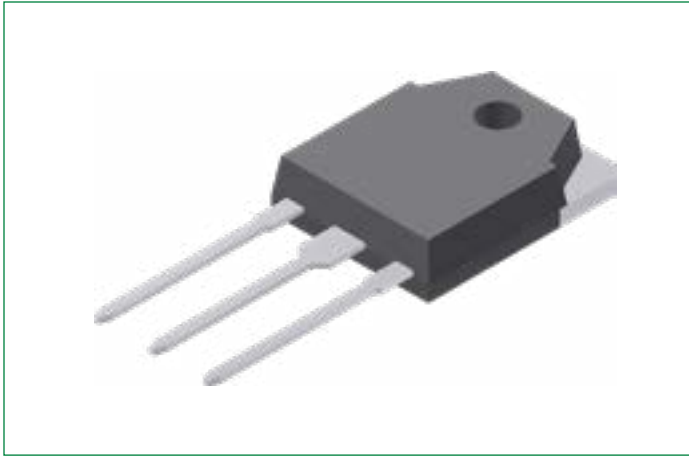


DSA30C100QB

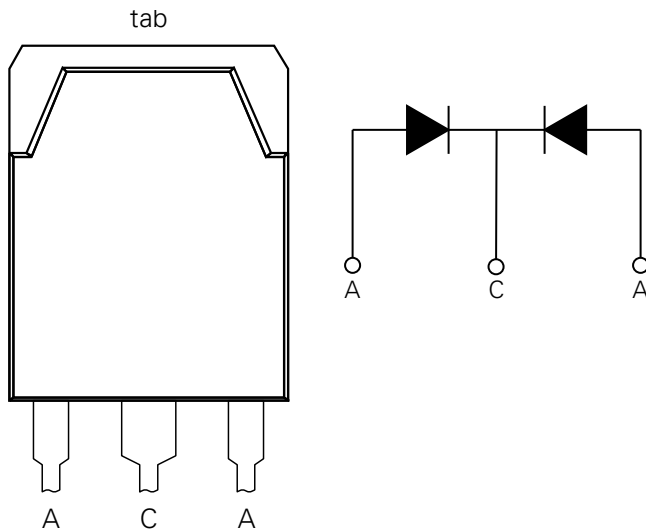
100 V, 30 A Schottky Rectifier Diode

RoHS

Pb

**Description:**

- 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 94 V-0

Pinout Diagram (TO-3P)**C:** Cathode; **A:** Anode; **tab:** Cathode**Applications:**

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

Product Summary

Characteristic	Value	Unit
V_{RRM}	100	V
I_{FAV}	2 x 15	A
V_F	0.72	V

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

Symbol	Characteristics	Condition	Max.	Units
V_{RRM}	Peak Repetitive Reverse Voltage	–	100	V
V_{RWM}	Working Peak Reverse Voltage			
V_R	DC Blocking Voltage			
I_{FAV}	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, $T_{VJ} = 25^\circ\text{C}$	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	@ 15 A, Pulse, $T_{VJ} = 25^\circ\text{C}$	–	0.91	V
V_{F2}		@ 15 A, Pulse, $T_{VJ} = 125^\circ\text{C}$	–	0.72	V
I_{R1}	Reverse Current (Per Leg)*	@ $V_R = \text{rated } V_R$, $T_{VJ} = 25^\circ\text{C}$	–	250	μA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_{VJ} = 125^\circ\text{C}$	–	12.5	mA
C_T	Junction Capacitance	@ $V_R = 12\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	223	–	pF

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

Symbol	Characteristics	Condition	Specification	Units
T_{VJ}	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 0.8 Max 1.2	Nm
F_C	Mounting force with clip	–	Min 20 Max 120	N
R_{thJC}	Maximum Thermal Resistance Junction to Case	DC operation	1.75	K/W
R_{thCS}	Typical Thermal Resistance Case to Heat Sink	–	0.30	K/W
wt	Approximate Weight	–	6.28	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

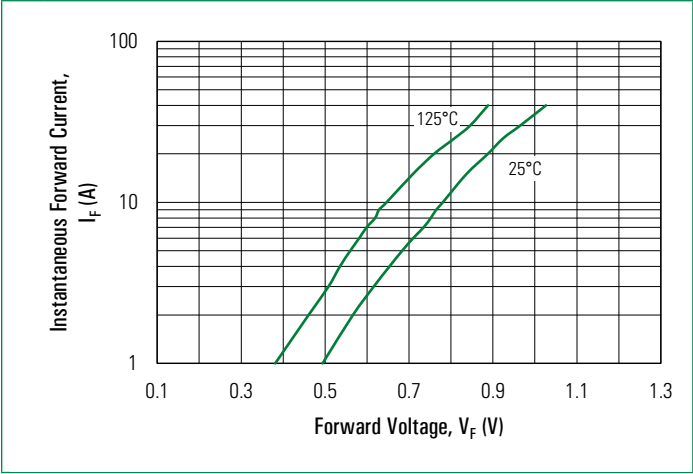


Fig. 2. Typical Reverse Characteristics

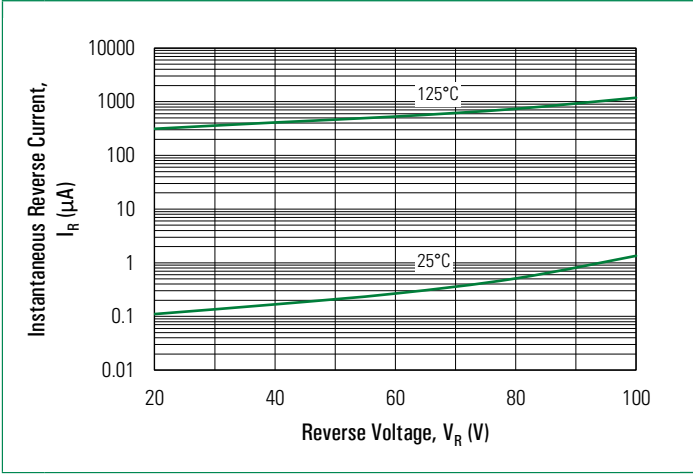
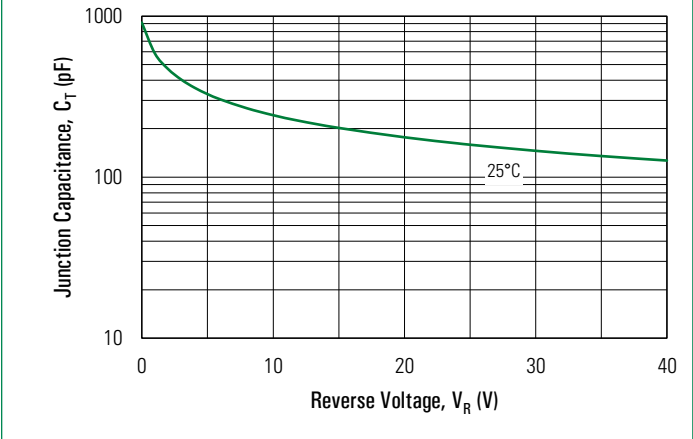
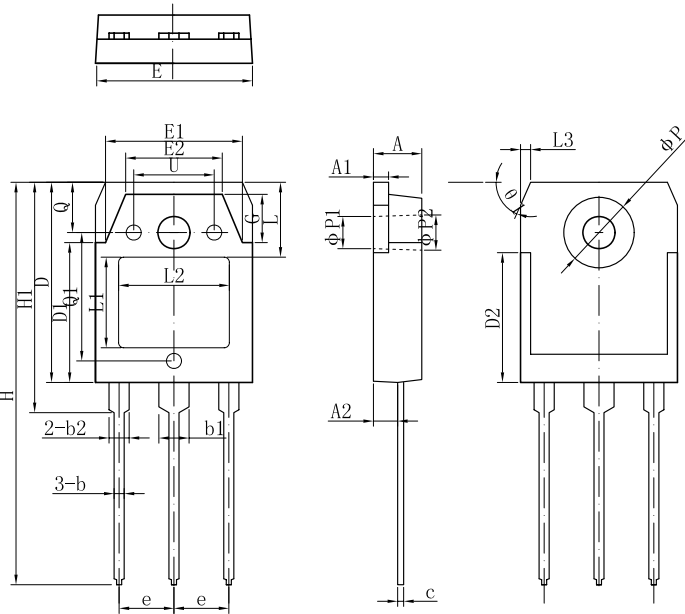


Fig. 3. Typical Junction Capacitance

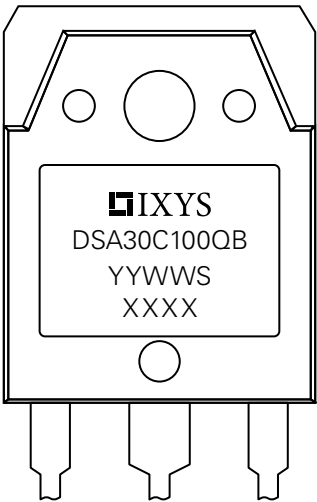


Part Outline Drawing (TO-3P)



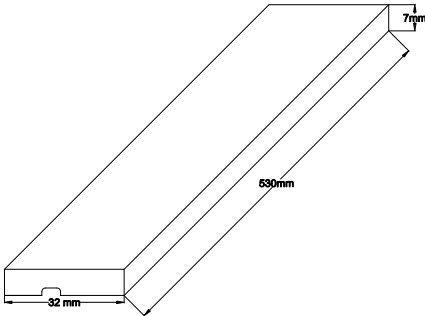
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.181	0.188	0.196	4.60	4.80	5.0
A1	0.055	0.059	0.062	1.40	1.50	1.60
A2	0.090	0.094	0.098	2.30	2.40	2.50
b	0.031	0.039	0.047	0.80	1.00	1.20
b1	0.114	0.118	0.127	2.90	3.0	3.25
b2	0.074	0.086	0.088	1.90	2.2	2.25
c	0.019	0.023	0.029	0.50	0.60	0.75
D	0.775	0.783	0.791	19.7	19.9	20.1
D1	-	0.547	-	-	13.9	-
D2	-	0.507 REF	-	-	12.9 REF	-
E	0.606	0.614	0.622	15.40	15.60	15.80
E1	-	0.535	-	-	13.60	-
E2	-	0.377	-	-	9.6	-
e	-	0.214	-	-	5.45	-
G	-	0.188	-	-	4.8	-
H	1.555	1.574	1.594	39.5	40.0	40.5
H1	-	0.901	-	-	22.9	-
L	-	0.291	-	-	7.4	-
L1	-	0.354	-	-	9.0	-
L2	-	0.433	-	-	11.0	-
L3	-	0.039 REF	-	-	1.0 REF	-
P	0.267	0.275	0.283	6.80	7.0	7.20
P1	-	0.125	-	-	3.2	-
P2	-	0.137	-	-	3.5	-
Q	-	0.196	-	-	5.0	-
Q1	-	0.502	-	-	12.76	-
U	-	0.314	-	-	8.0	-

Part Number and Marking



- DS = Schottky Diode
- A = Product Generation
- 30 = Current Rate
- C = Common Cathode
- 100 = Voltage Rating
- QB = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXX = Lot Number

Packing Specifications



Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSA30C100QB	DSA30C100QB	Tube	30 pcs/ tube

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Part of:

