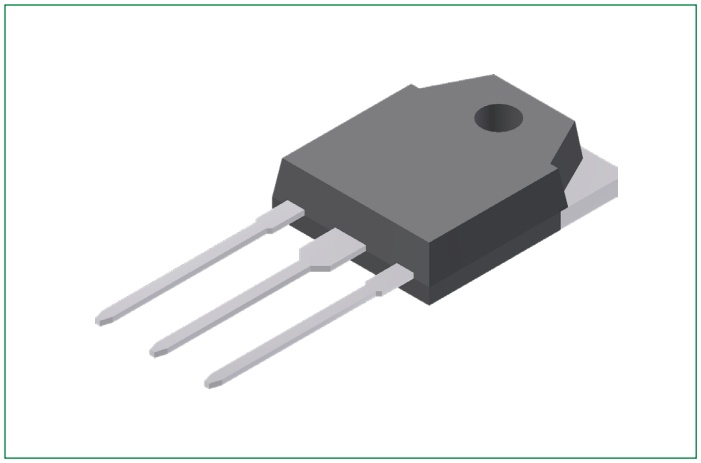
DSA30C100QB

100 V, 30 A Schottky Rectifier Diode

RoHS



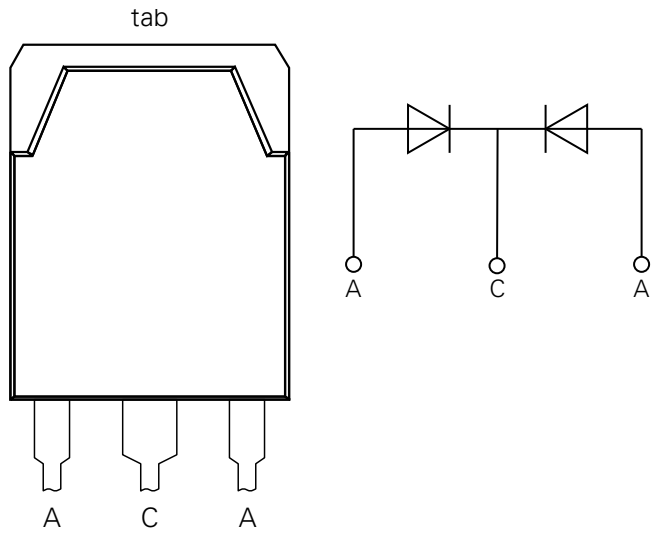
Features

- 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 94 V-0

Applications

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

Pinout Diagram (TO-3P)



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

Product Summary

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

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Maximum Ratings (T_A = 25°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°C, rectangular wave form	15 (Per Leg)	A
			30 (Per Device)	
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current (Per Leg)	10 ms, Half Sine pulse, T_{VJ}= 25°C	340	A
P_{tot}	Total power dissipation	T_C = 25°C	85	W

Electrical Characteristics (T_A = 25°C unless otherwise specified)

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop (Per Leg)[1]	@ 15 A, Pulse, T_{VJ} = 25°C	–	0.91	V
V_{F2}		@ 15 A, Pulse, T_{VJ} = 125°C	–	0.72	V
I_{R1}	Reverse Current (Per Leg)*	@V_R = rated V_R, T_{VJ} = 25°C	–	250	µA
I_{R2}		@V_R = rated V_R, T_{VJ} = 125°C	–	12.5	mA
C_T	Junction Capacitance	@V_R = 12 V, T_C = 25°C f_{SIG} = 1 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	°C
T_O	Operation Temperature	–	-55 to +150	°C
T_{stg}	Storage Temperature	–	-55 to +150	°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_{thCH}	Typical Thermal Resistance Case to Heat Sink	–	0.30	K/W
wt	Approximate Weight	–	6.28	g

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Characteristic Curves

Fig. 1. Typical Forward Characteristics

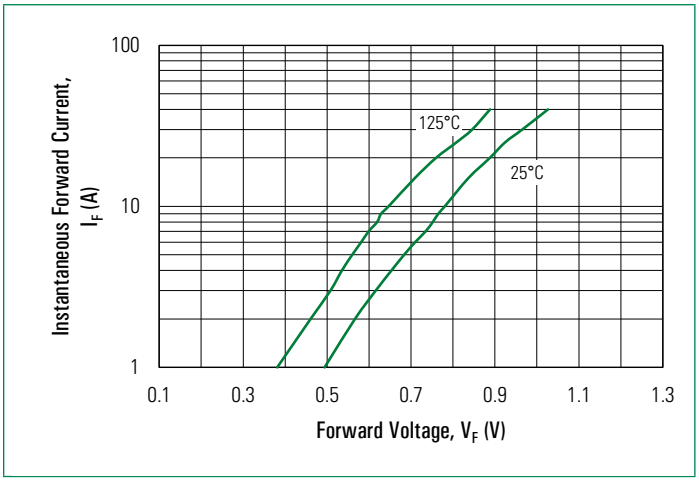


Fig. 2. Typical Reverse Characteristics

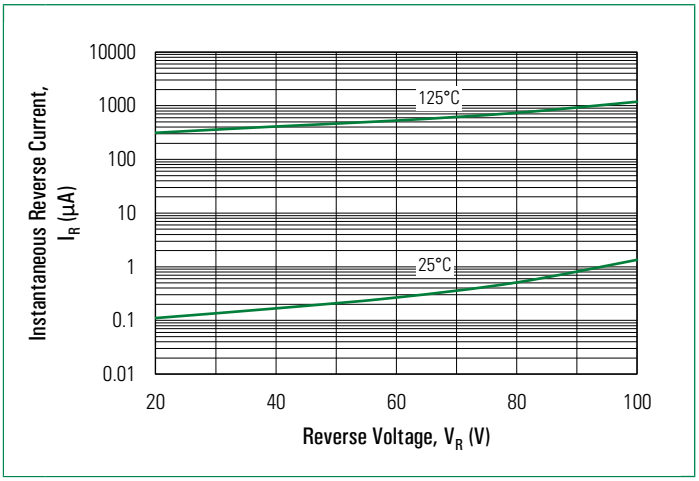
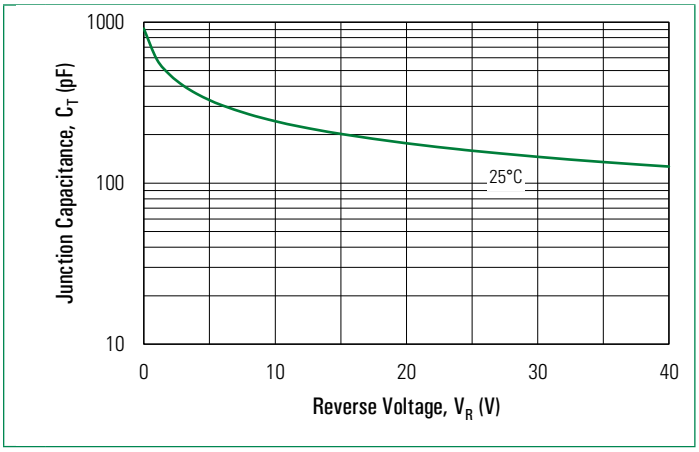


Fig. 3. Typical Junction Capacitance



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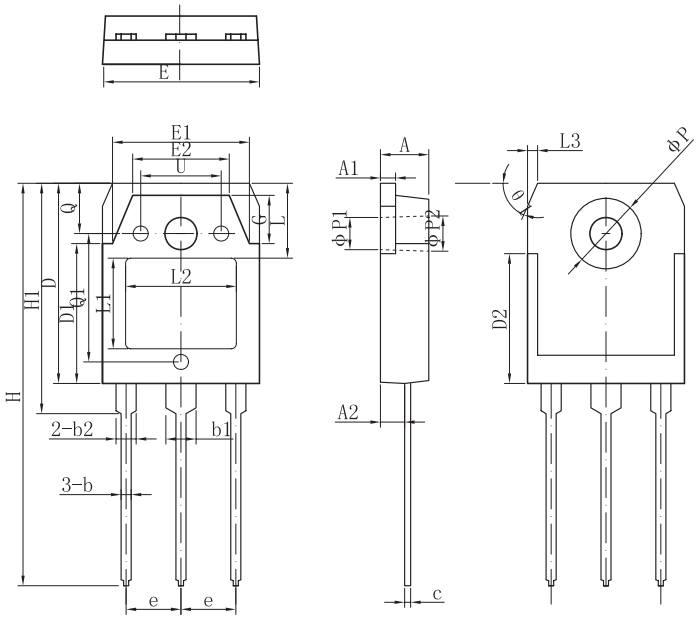
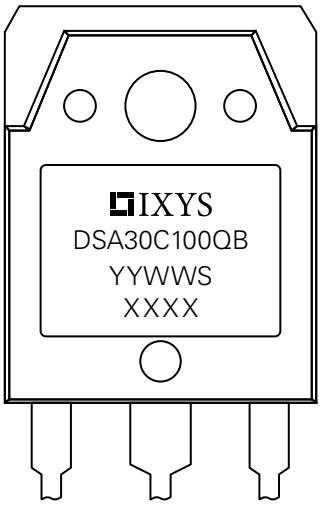
Part Outline Drawing (TO-3P)



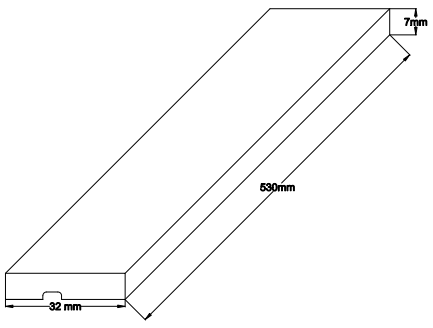
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.181	0.188	0.196	4.60	4.80	5.0
A1	0.055	0.059	0.062	1.40	1.50	1.60
A2	0.090	0.094	0.098	2.30	2.40	2.50
b	0.031	0.039	0.047	0.80	1.00	1.20
b1	0.114	0.118	0.127	2.90	3.0	3.25
b2	0.074	0.086	0.088	1.90	2.2	2.25
c	0.019	0.023	0.029	0.50	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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