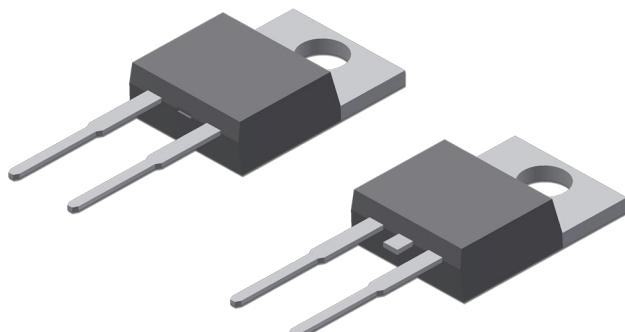


DSA30I100PA

100 V, 30 A Schottky Rectifier Diode

RoHS

**Features**

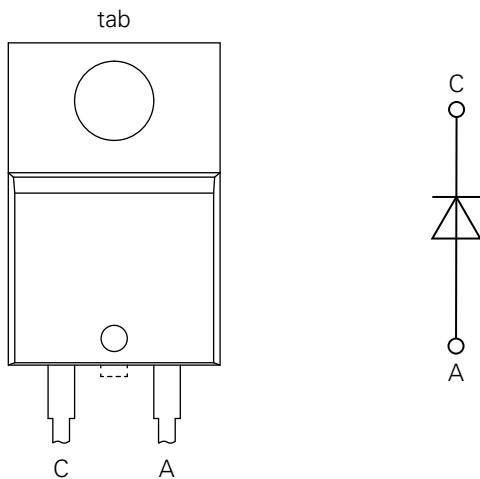
- Very low V_F
- Extremely low switching losses
- Low I_{RM} values
- Improved thermal behavior
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching
- Terminals finish: 100% pure tin
- Epoxy meets UL 94 V-0

Applications

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

Product Summary

Characteristic	Value	Unit
V_{RRM}	100	V
I_{FAV}	30	A
V_F	0.78	V

Pinout Diagram (TO-220AC)**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			
V_{RWM}	Working Peak Reverse Voltage	-	100	V
V_R	DC Blocking Voltage			
I_{FAV}	Average Rectified Forward Current	50% duty cycle @ $T_c = 150^\circ\text{C}$, rectangular wave form	30	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$	340	A
P_{tot}	Total Power Dissipation	$T_c = 25^\circ\text{C}$	175	W

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop ¹	@ 30 A, Pulse, $T_{VJ} = 25^\circ\text{C}$	-	0.95	V
V_{F2}		@ 30 A, Pulse, $T_{VJ} = 125^\circ\text{C}$	-	0.78	V
I_{R1}	Reverse Current*	@ $V_R = \text{rated } V_R$, $T_{VJ} = 25^\circ\text{C}$	-	450	μA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_{VJ} = 125^\circ\text{C}$	-	15	mA
C_T	Junction Capacitance	@ $V_R = 12 \text{ V}$, $T_c = 25^\circ\text{C}$ $f_{\text{SIG}} = 1 \text{ MHz}$	334	-	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 0.4 Max 0.6	Nm
F_C	Mounting force with clip	-	Min 20 Max 60	N
R_{thJC}	Maximum Thermal Resistance Junction to Case	DC operation	0.85	K/W
R_{thCS}	Typical Thermal Resistance Junction to Heat Sink	-	0.5	K/W
wt	Approximate Weight	-	1.6	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

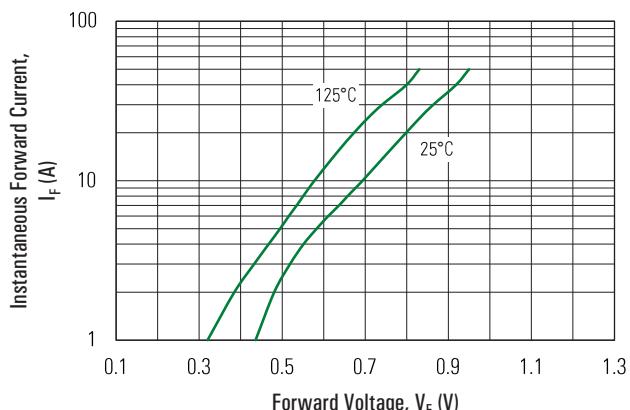


Fig. 2. Typical Reverse Characteristics

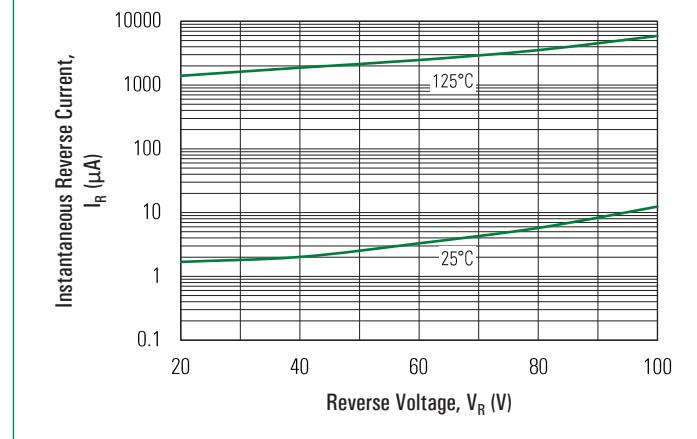
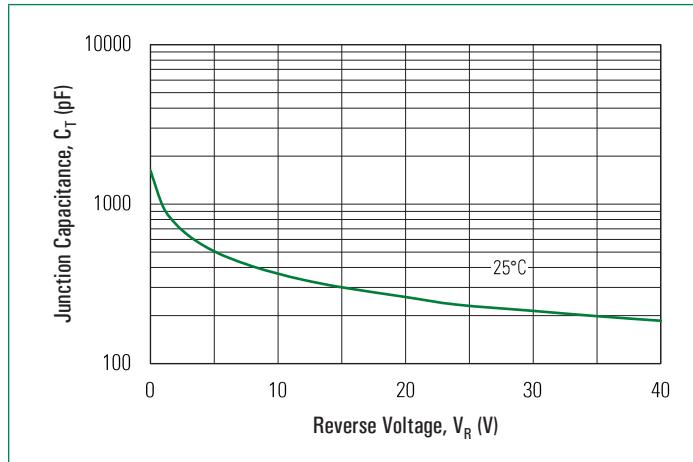
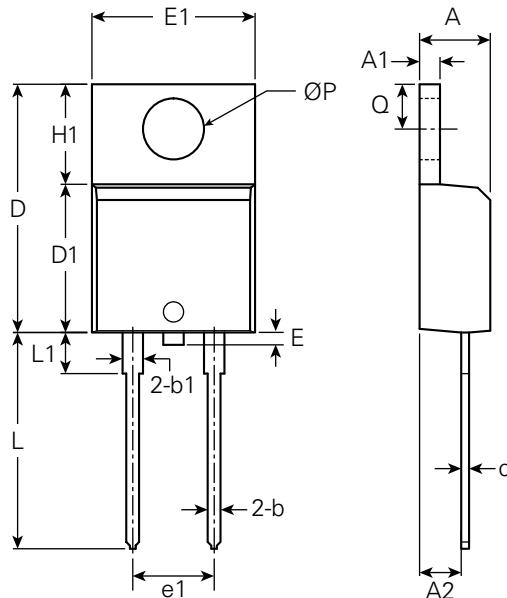


Fig. 3. Typical Junction Capacitance

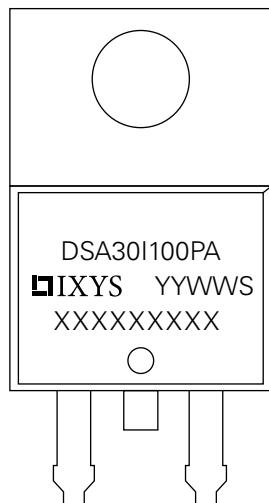


Part Outline Drawing (TO-220AC)



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	0.04	—	0.07	1.14	—	1.78
c	0.12	—	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	—	—	0.07	—	—	1.78
E1	0.38	0.40	0.42	9.65	10.16	10.67
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
Q	0.10	—	0.135	2.54	—	3.43
ØP	—	0.14	—	—	3.56	—

Part Number and Marking

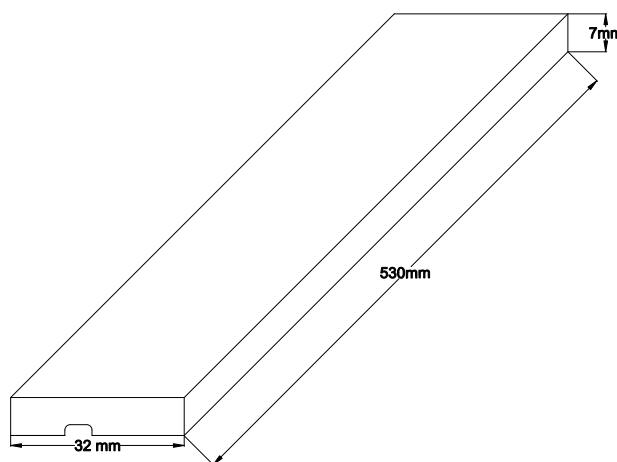


DS = Schottky Diode
 A = Product Generation
 30 = Current Rating
 I = Single Part
 100 = Voltage Rating
 PA = Package Code
 YY = Year
 WW = Work Week
 S = Plant Location Code
 XXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	M.O.Q
DSA30I100PA	DSA30I100PA	Tube (50 pcs)	—

Packing Specifications



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