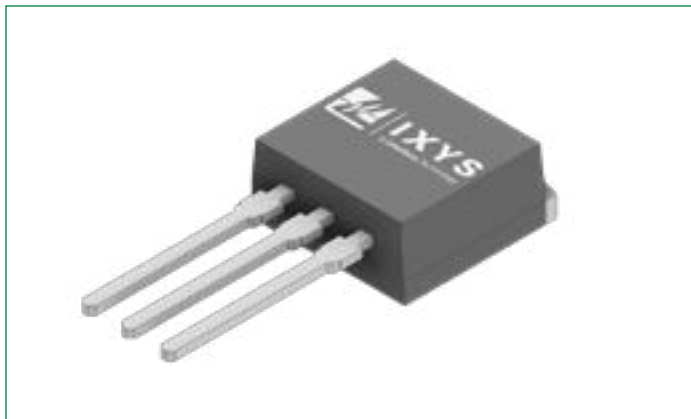


# DSA15IM45IB

## 45 V, 15 A Schottky Rectifier Diode

RoHS

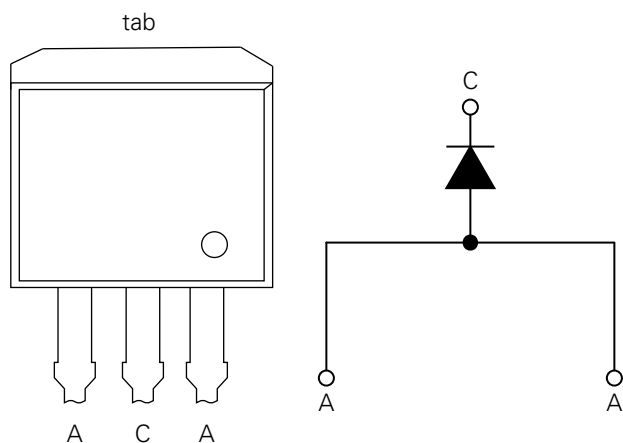
Pb



### 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 94V-0

### Pinout Diagram (TO-262)



**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 @ $T_C=155^\circ\text{C}$ , rectangular wave form	15	A
$I_{FSM}$	Peak One Cycle Non-Repetitive Surge Current	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 <sup>1</sup>	@ 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 <sup>1</sup>	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	-	250	$\mu\text{A}$
$I_{R2}$		@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	-	2.5	mA
$C_T$	Junction Capacitance	@ $V_R = 5\text{V}, T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	522	-	pF

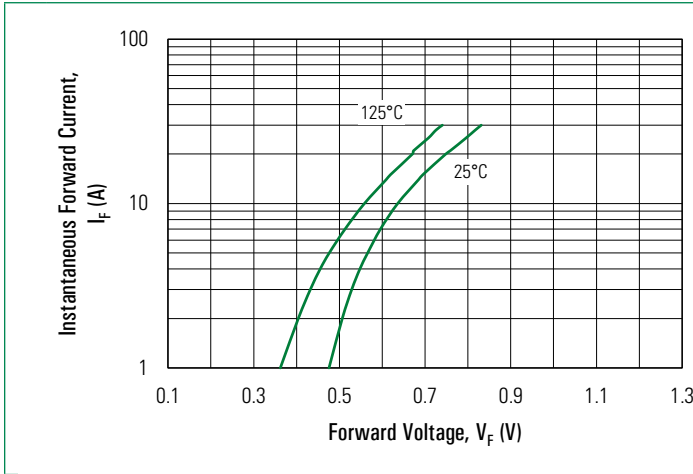
**Note 1:** Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications**

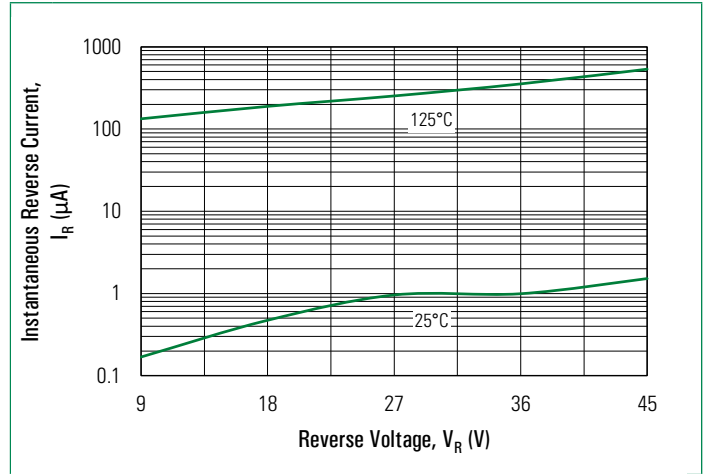
Symbol	Characteristics	Condition	Specification	Units
$T_J$	Junction Temperature	-	-55 to +175	$^\circ\text{C}$
$T_O$	Operation Temperature	-	-55 to +150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-	-55 to +150	$^\circ\text{C}$
$F_C$	Mounting force with clip	-	Min 20 Max 60	N
$R_{\theta JC}$	Maximum Thermal Resistance Junction to Case	DC operation	1.75	$^\circ\text{C/W}$
$R_{\theta CS}$	Typical Thermal Resistance Case to Heat Sink	-	0.25	$^\circ\text{C/W}$
wt	Approximate Weight	-	1.85	g

### Characteristic Curves

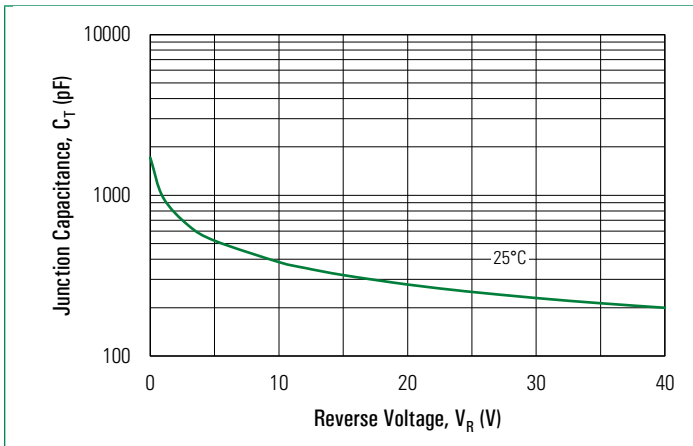
**Fig. 1. Typical Forward Characteristics**



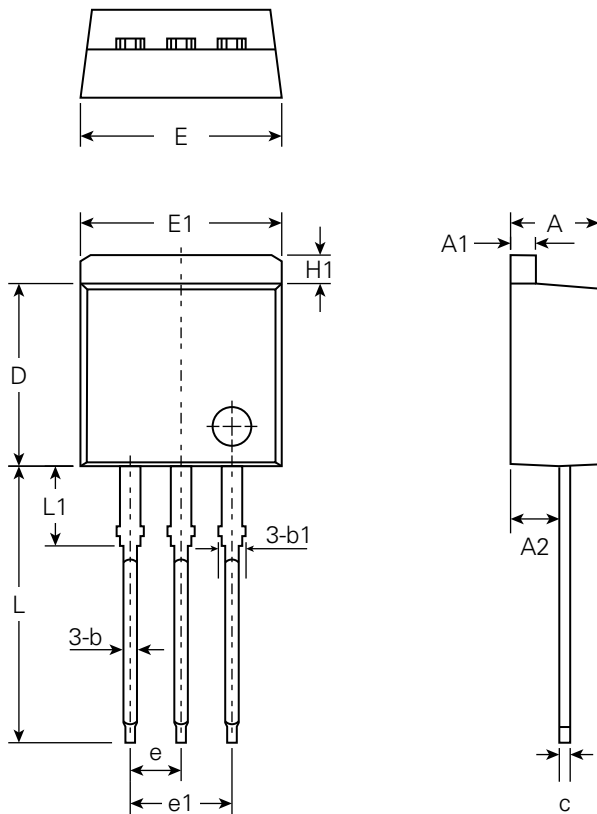
**Fig. 2. Typical Reverse Characteristics**



**Fig. 3. Typical Junction Capacitance**



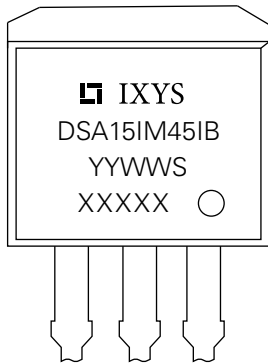
Part Outline Drawing (TO-262)



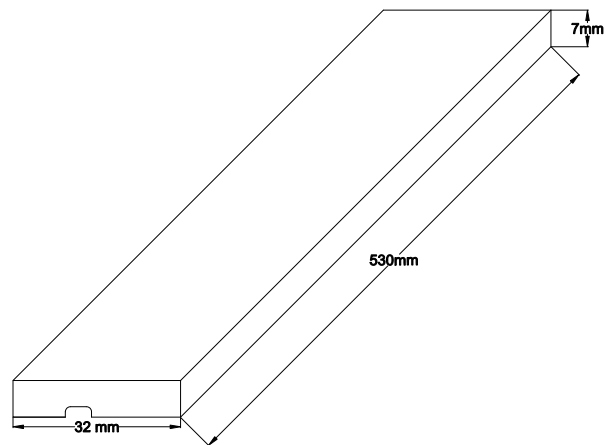
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.159	0.174	0.190	4.06	4.44	4.83
A1	0.044	0.05	0.055	1.14	1.27	1.40
A2	0.079	0.094	0.109	2.03	2.41	2.79
b	0.025	0.029	0.037	0.64	0.76	0.96
b1	0.044	0.053	0.057	1.14	1.37	1.47
c	0.014	0.022	0.025	0.36	0.56	0.64
D	0.336	0.359	0.379	8.55	9.14	9.65
E	0.379	0.394	0.405	9.65	10.03	10.31
E1	0.379	0.394	0.405	9.65	10.03	10.29
e	-	0.1	-	-	2.54	-
e1	-	-	-	-	-	-
H1	-	-	0.055	-	-	1.40
L	0.5	0.544	0.579	12.7	13.82	14.73
L1	-	0.149	-	-	3.8	-

Packing Specifications

Part Number and Marking



- D Diode
- S = Schottky Diode
- A = Low VF
- 15 = Forward Current
- IM = Single Diode
- 45 = Reverse Voltage
- IB = Package Code (TO-262)
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXX = Lot Number



Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSA15IM45IB	DSA14IM45IB	Tube	50 pcs/ tube

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