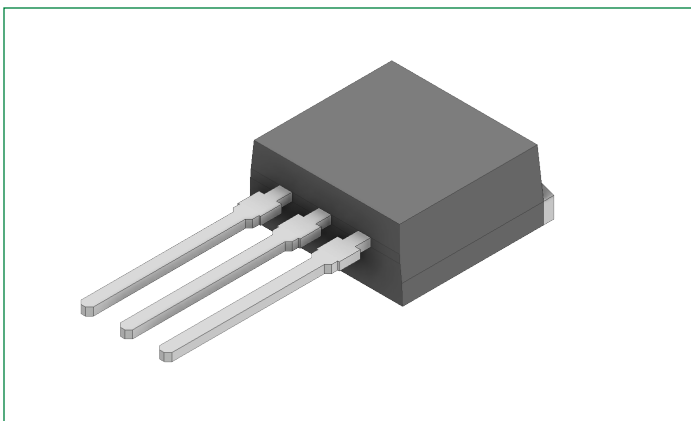


DSA15IM45IB

45 V, 15 A Schottky Rectifier Diode

RoHS



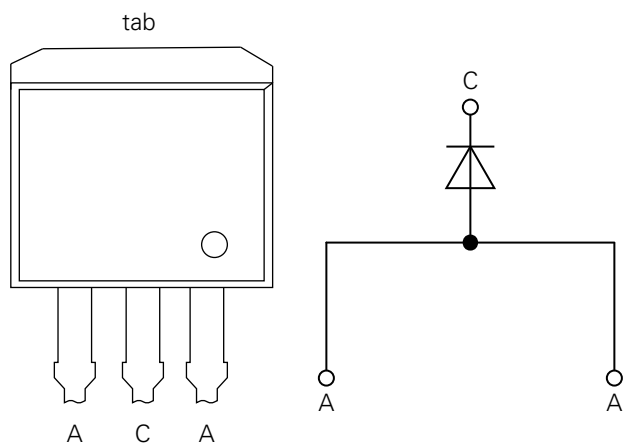
Description

- 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
- Epoxy meets UL 94V-0

Applications

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

Pinout Diagram (TO-262)



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	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 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 ¹	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	—	250	μA
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 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	$^\circ\text{C}$
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

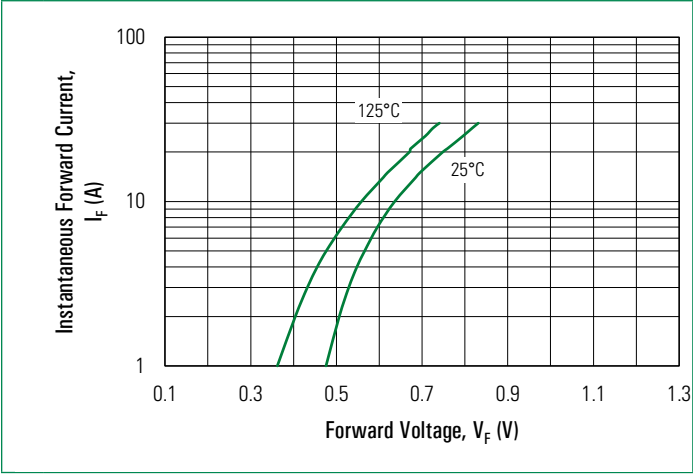


Fig. 2. Typical Reverse Characteristics

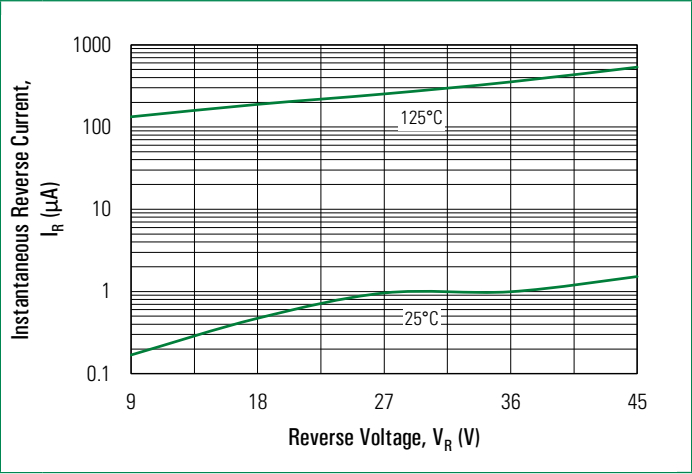
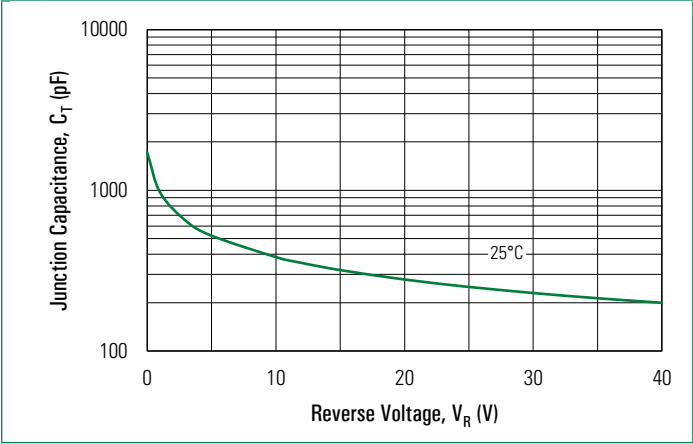
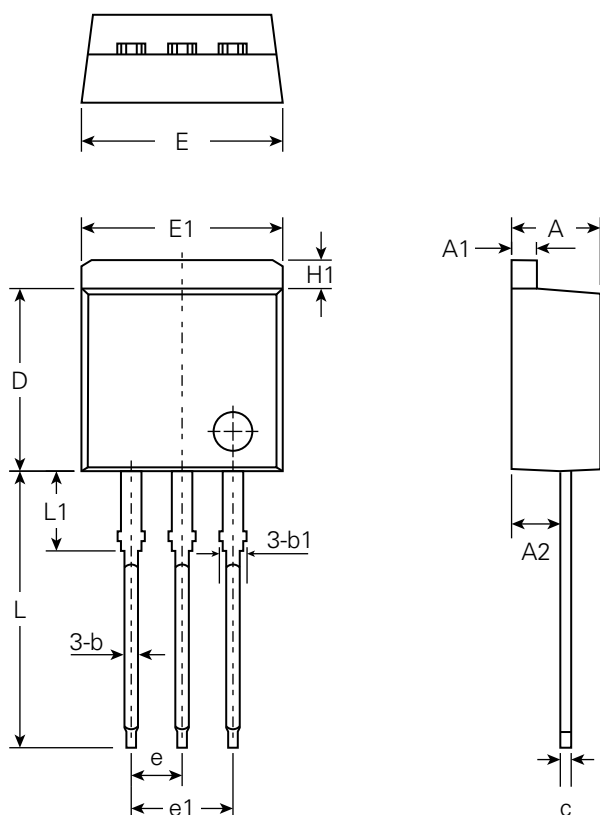


Fig. 3. Typical Junction Capacitance



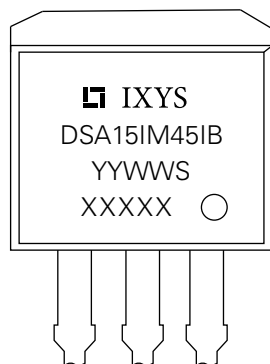
Part Outline Drawing (TO-262)



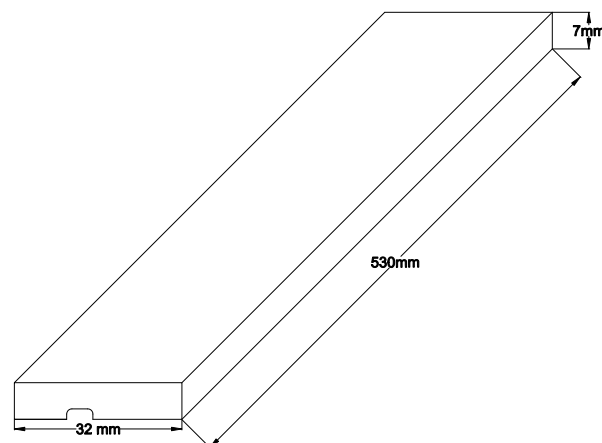
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.159	0.174	0.190	4.06	4.44	4.83
A1	0.044	0.05	0.055	1.14	1.27	1.40
A2	0.079	0.094	0.109	2.03	2.41	2.79
b	0.025	0.029	0.037	0.64	0.76	0.96
b1	0.044	0.053	0.057	1.14	1.37	1.47
c	0.014	0.022	0.025	0.36	0.56	0.64
D	0.336	0.359	0.379	8.55	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 V_F
 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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Part of:

