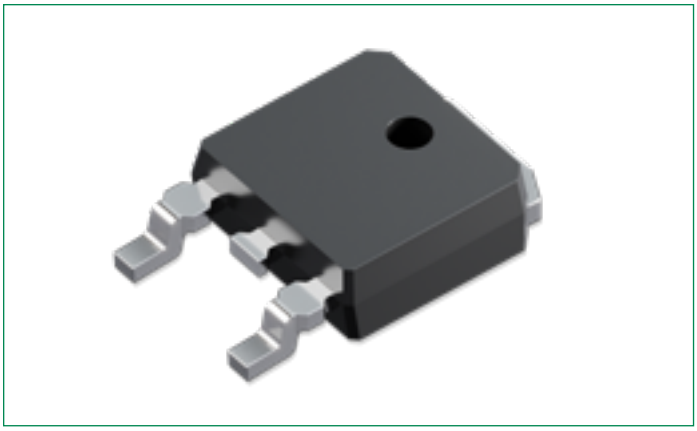
DSA15IM45UC

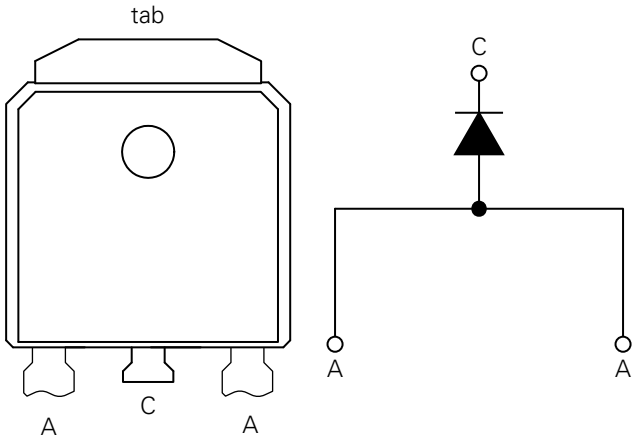
45 V, 15 A Schottky Rectifier Diode



Features:

- Very low Vf
- Extremely low switching losses
- Low Irm 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-252AA)



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

Applications:

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

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Maximum Ratings (T_A = 25°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=150°C, rectangular wave form	15	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, T_J=25°C	300	A
P_{tot}	Total power dissipation	T_C= 25°C	75	W

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop[1]	@ 15A, Pulse, T_J = 25°C	–	0.75	V
V_{F2}		@ 15A, Pulse, T_J = 125°C	–	0.63	V
I_{R1}	Reverse Current*	@V_R = rated V_R, T_J = 25°C	–	250	µA
I_{R2}		@V_R = rated V_R, T_J = 125°C	–	2.5	mA
C_T	Junction Capacitance	@V_R = 24V, T_C = 25 °C, f_{SIG} = 1MHz	256	–	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	°C
T_O	Operation Temperature	–	-55 to +150	°C
T_{stg}	Storage Temperature	–	-55 to +150	°C
F_C	Mounting force with clip	–	Min 20 Max 60	N
$R_{\theta JC}$	Maximum Thermal Resistance Junction to Case	DC operation	2	°C/W
$R_{\theta CS}$	Typical Thermal Resistance Case to Heat Sink	–	0.50	°C/W
wt	Approximate Weight	–	0.39	g

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Characteristic Curves

Fig. 1. Typical Forward Characteristics

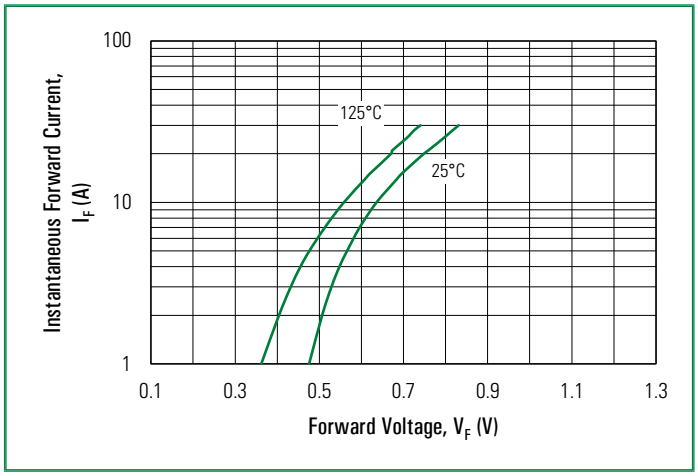


Fig. 2. Typical Reverse Characteristics

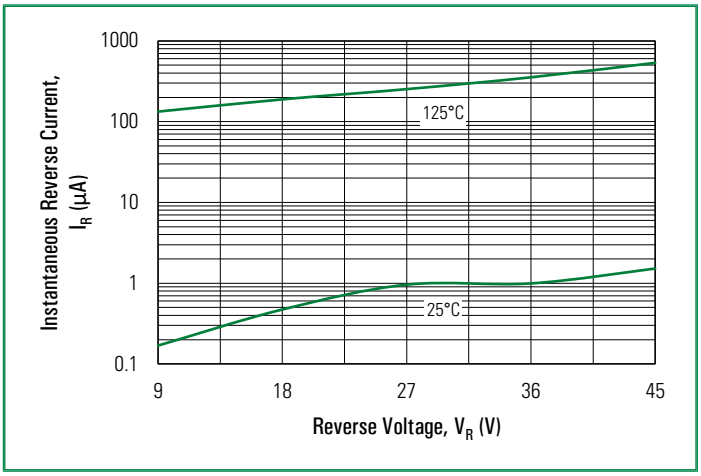
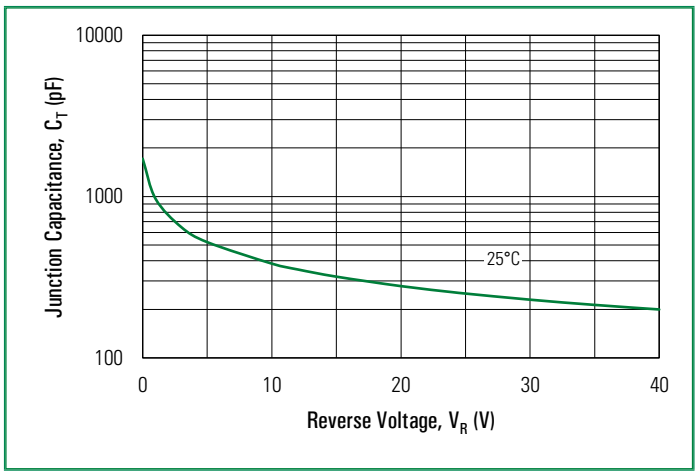
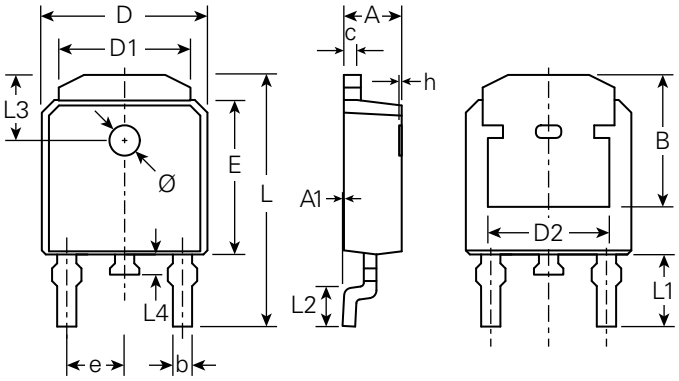


Fig. 3. Typical Junction Capacitance



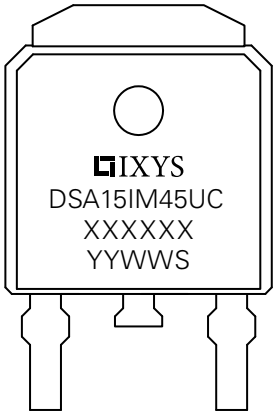
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Part Outline Drawing (TO-252AA)



Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max
A	0.085	–	0.094	2.18	–	2.39
A1	–	–	0.005	–	–	0.13
b	0.025	–	0.035	0.64	–	0.89
c	0.018	–	0.035	0.46	–	0.89
D	0.250	–	0.264	6.35	–	6.73
D1	0.195	–	0.215	4.95	–	5.46
D2	0.170	–	–	4.32	–	–
E	0.235	0.240	0.245	5.97	6.10	6.22
e	0.090 BSC			2.29 BSC		
L	0.370	–	0.410	9.40	–	10.41
L1	0.114			2.90 REF		
L2	0.055	0.060	0.070	1.40	1.52	1.78
L3	0.063 REF			1.60 REF		
L4	–	–	0.040	–	–	1.02
Ø	0.043	–	0.051	1.10	–	1.30

Part Number and Marking



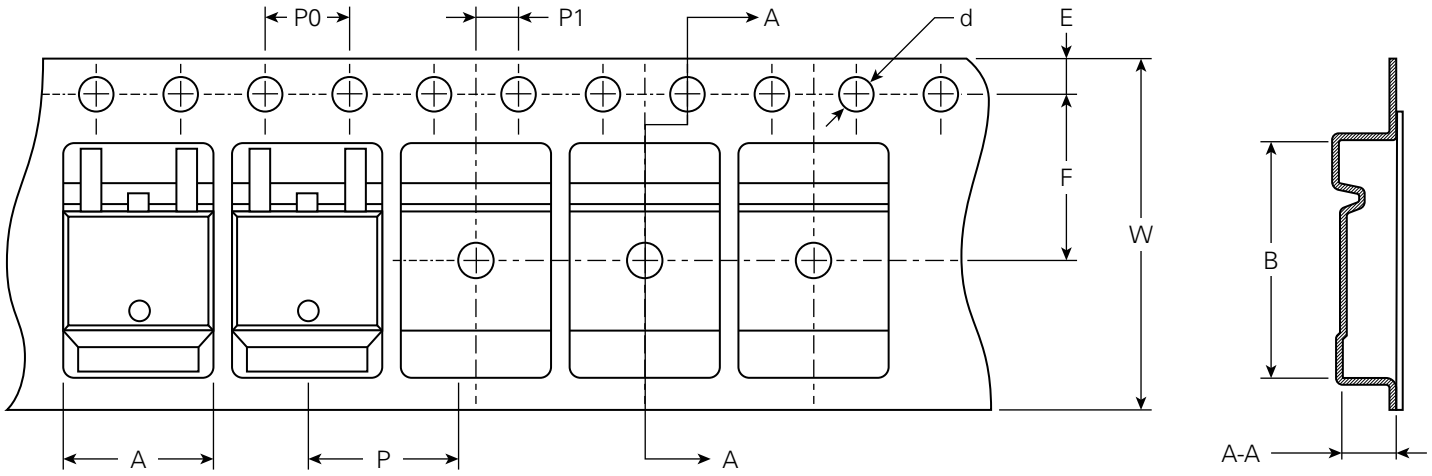
DS = Schottky Diode
A = Low VF
15 = Current Rate (15A)
IM = Single Diode
45 = Voltage Rating (45V)
UC = Package Code
YY = Year
WW = Work Week
S = Plant Location Code
XXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSA15IM45UC-TRL	DSA15IM45UC	Reel	2500 pcs/ reel

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Carrier Tape Specification (TO-252AA)



Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.267	–	0.276	6.80	–	7.00
B	0.409	–	0.417	10.40	–	10.60
C	0.102	–	0.110	2.60	–	2.80
d	Ø0.057	–	Ø0.065	Ø1.45	–	Ø1.65
E	0.065	–	0.073	1.65	–	1.85
F	0.291	–	0.299	7.40	–	7.60
P0	0.154	–	0.161	3.90	–	4.10
P	0.311	–	0.319	7.90	–	8.10
P1	0.075	–	0.083	1.90	–	2.10
W	0.626	–	0.642	15.90	–	16.30

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