

DSS6-0045AS

45 V, 6 A Schottky Rectifier Diode

RoHS

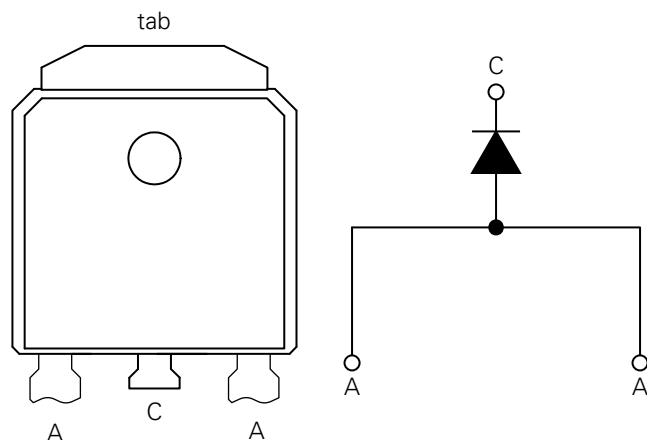
Pb



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
- This is a Pb-free device
- Epoxy meets UL 94 V-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

Product Summary

Characteristic	Value	Unit
V_{RRM}	45	V
I_{FAV}	6	A
V_F	0.53	V

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_{FAV}	Average Rectified Forward Current	50% duty cycle @ $T_C = 165^\circ\text{C}$, rectangular wave form	6	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$	120	A
P_{tot}	Total power dissipation	$T_C = 25^\circ\text{C}$	50	W

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop ¹	@ 6 A, Pulse, $T_{VJ} = 25^\circ\text{C}$	–	0.63	V
V_{F2}		@ 6 A, Pulse, $T_{VJ} = 125^\circ\text{C}$	–	0.53	V
I_{R1}	Reverse Current*	@ $V_R = \text{rated } V_R$, $T_{VJ} = 25^\circ\text{C}$	–	250	μA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_{VJ} = 125^\circ\text{C}$	–	2.5	mA
C_T	Junction Capacitance	@ $V_R = 12\text{ V}$, $T_C = 25^\circ\text{C}$, $f_{SIG} = 1\text{ MHz}$	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	$^\circ\text{C}$
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_{thJC}	Maximum Thermal Resistance Junction to Case	DC operation	3	K/W
R_{thCS}	Typical Thermal Resistance Case to Heat Sink	–	0.50	K/W
wt	Approximate Weight	–	0.39	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

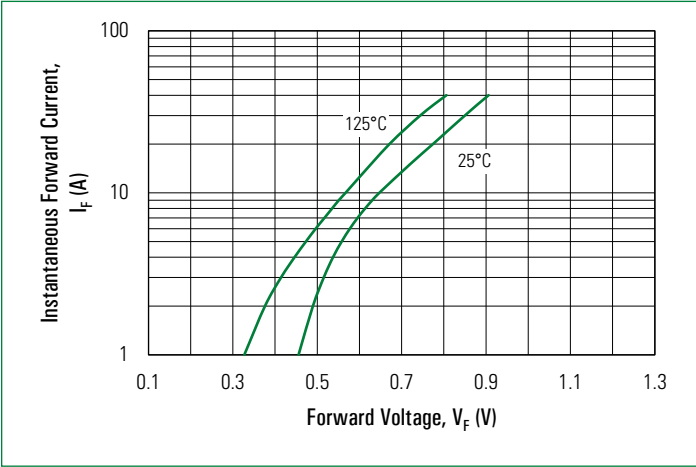


Fig. 2. Typical Reverse Characteristics

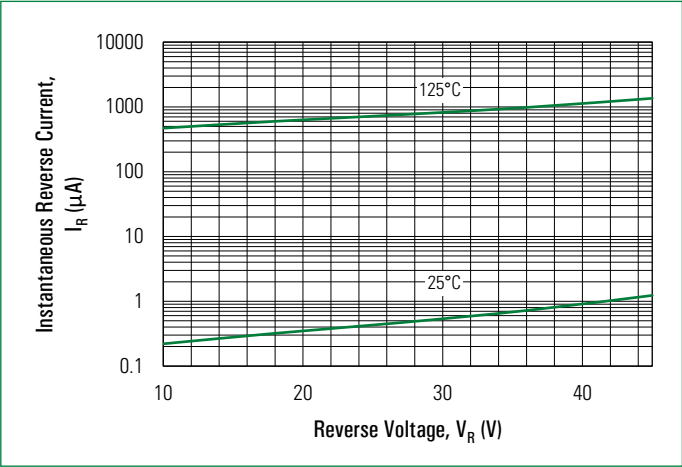
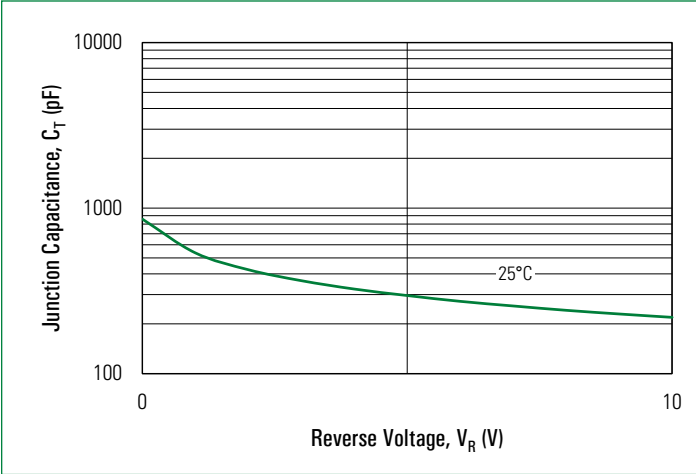


Fig. 3. Typical Junction Capacitance



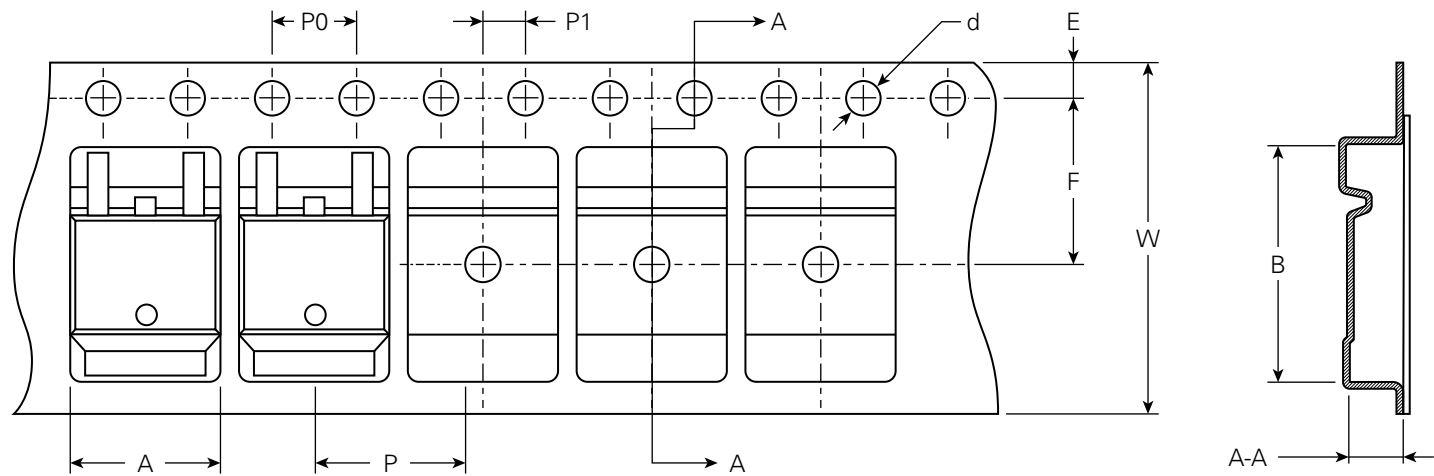
Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max
A	0.085	—	0.094	2.18	—	2.39
A1	—	—	0.005	—	—	0.13
b	0.025	—	0.035	0.64	—	0.89
c	0.018	—	0.035	0.46	—	0.89
D	0.250	—	0.264	6.35	—	6.73
D1	0.195	—	0.215	4.95	—	5.46
D2	0.170	—	—	4.32	—	—
E	0.235	0.240	0.245	5.97	6.10	6.22
e	0.090 BSC			2.29 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

IXYS
DSS6-0045AS
XXXXXX
YYWWS

DS = Schottky Diode
S = Product Generation
6 = Current Rate
0045 = Voltage Rating
AS = Package Code
YY = Year
WW = Work Week
S = Plant Location Code
XXXXXX = Lot Number

Part Number	Marking	Packing Mode	Quantity
DSS6-0045AS-TRL	DSS6-0045AS	Reel	2500 pcs/ reel

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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