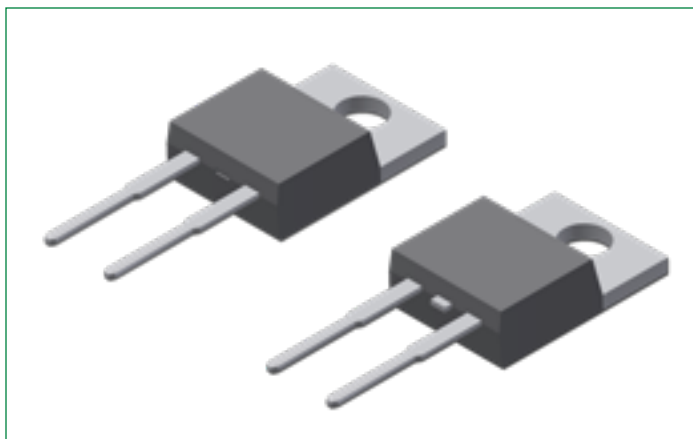


DSS25-0045A

45 V, 25 A Schottky Rectifier Diode

RoHS

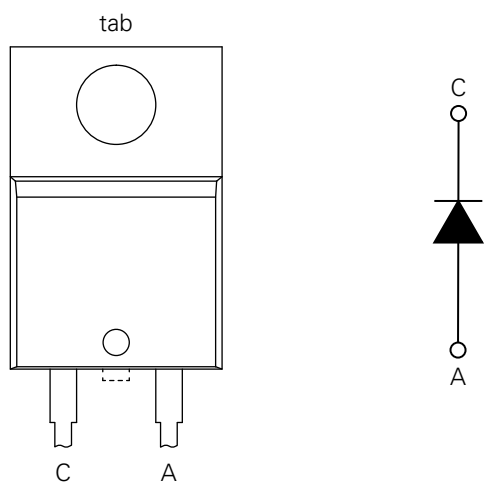
Pb



Features & Benefits:

- 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-220AC)



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	25	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$	400	A
P_{tot}	Total power dissipation	$T_C=25^\circ\text{C}$	135	W
E_{AS}	Non-repetitive avalanche energy	$I_{AS}=15\text{ A}$, $L=180\ \mu\text{H}$, $T_J=25^\circ\text{C}$	20	mJ
I_{AR}	Repetitive avalanche current	$V_A=1.5\cdot V_R$, typ. $f=1\text{ kHz}$	1.8	A

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop ¹	@ 25A, Pulse, $T_J=25^\circ\text{C}$	-	0.68	V
V_{F1}		@ 25A, Pulse, $T_J=125^\circ\text{C}$	-	0.64	V
I_{R1}	Reverse Current ¹	@ $V_R = \text{rated } V_R$, $T_J=25^\circ\text{C}$	-	1	mA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_J=125^\circ\text{C}$	-	10	mA
C_T	Junction Capacitance	@ $V_R=5\text{ V}$, $T_C=25^\circ\text{C}$ $f_{SIG}=1\text{ MHz}$	1405	-	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	$^\circ\text{C}$
M_D	Mounting torque	-	Min 0.4 Max 0.6	Nm
F_C	Mounting force with clip	-	Min 20 Max 60	N
$R_{\theta JC}$	Maximum Thermal Resistance Junction to Case	DC operation	1.1	$^\circ\text{C/W}$
$R_{\theta CS}$	Typical Thermal Resistance Case to Heat Sink	-	0.5	$^\circ\text{C/W}$
wt	Approximate Weight	-	1.6	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

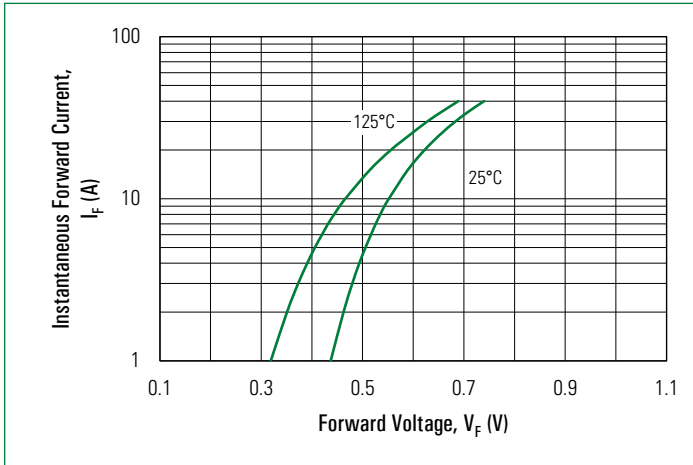


Fig. 2. Typical Reverse Characteristics

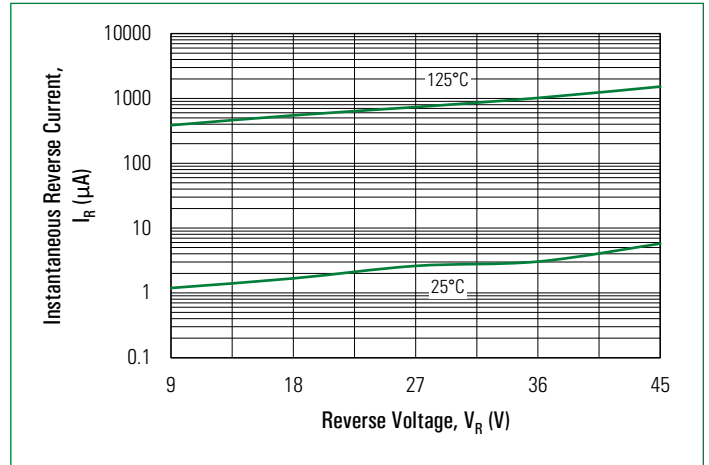
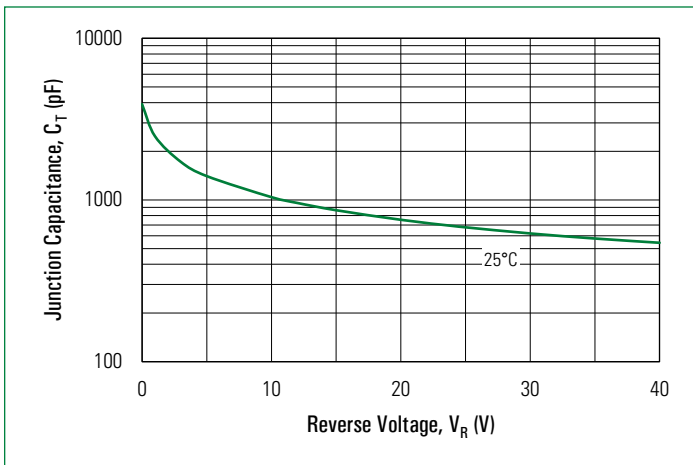
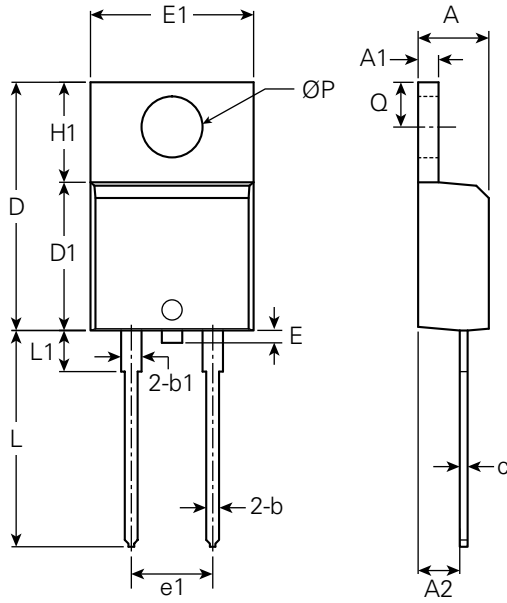


Fig. 3. Typical Junction Capacitance

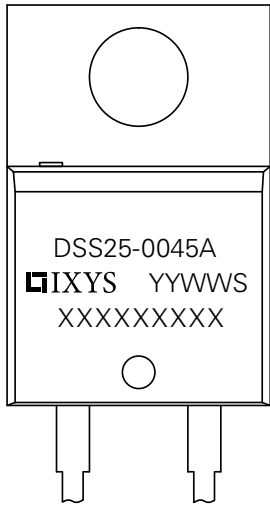


Part Outline Drawing (TO-220AC)



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	0.1	-	0.13	2.54	-	3.43
ØP	-	0.14	-	-	3.56	-

Part Number and Marking

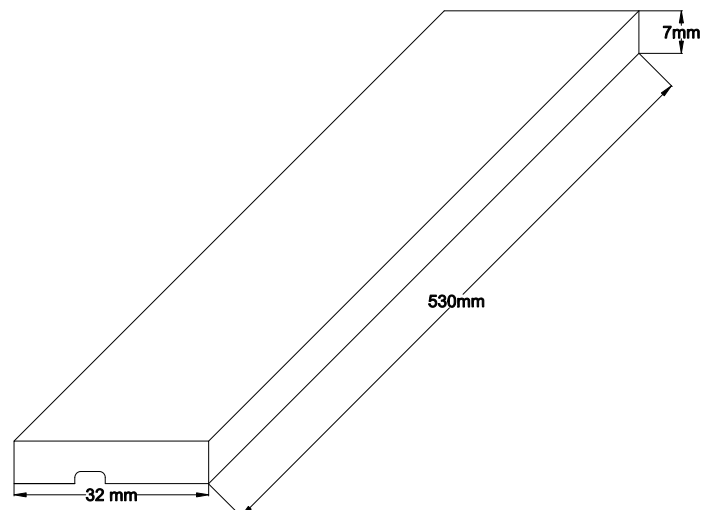


- DS = Schottky Diode
- S = Product Generation
- 25 = Current Rate
- 0045 = Voltage Rating
- A = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSS25-0045A	DSS25-0045A	Tube	50 pcs/ tube

Packing Specifications



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