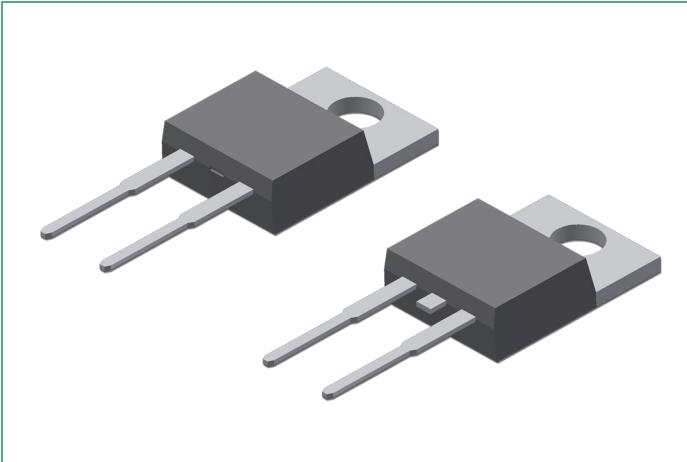


# DSS25-0025B

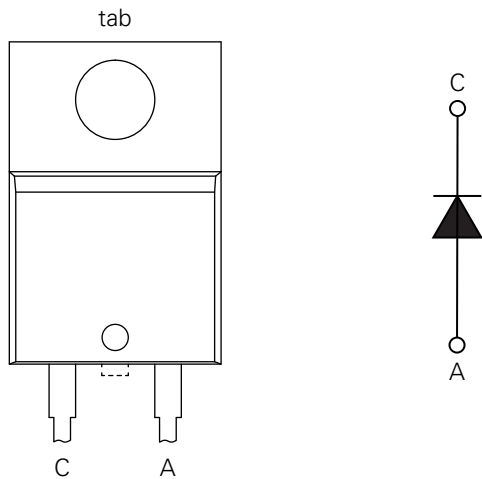
## 25 V, 25 A Schottky Rectifier Diode

RoHS

Pb



### Pinout Diagram (TO-220AC)



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

### 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 94 V-0

### Applications:

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

### Product Summary

Characteristic	Value	Unit
$V_{RRM}$	25	V
$I_{FAV}$	25	A
$V_F$	0.45	V

**Maximum Ratings** ( $T_A = 25^\circ\text{C}$  unless otherwise specified)

Symbol	Characteristics	Condition	Max.	Units
$V_{RRM}$	Peak Repetitive Reverse Voltage	-	25	V
$V_{RWM}$	Working Peak Reverse Voltage			
$V_R$	DC Blocking Voltage			
$I_{FAV}$	Average Rectified Forward Current	50% duty cycle @ $T_C = 125^\circ\text{C}$ , rectangular wave form	25	A
$I_{FSM}$	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_{VJ} = 25^\circ\text{C}$	300	A
$P_{tot}$	Total Power Dissipation	$T_C = 25^\circ\text{C}$	90	W
$E_{AS}$	Non-repetitive Avalanche Energy	$I_{AS} = 10\text{ A}$ , $L = 200\ \mu\text{H}$ , $T_{VJ} = 25^\circ\text{C}$	10	mJ
$I_{AR}$	Repetitive Avalanche Current	$V_A = 1.5 V_R$ , typ. $f = 1\text{ kHz}$	2	A

**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>	@ 25 A, Pulse, $T_{VJ} = 25^\circ\text{C}$	-	0.52	V
$V_{F1}$		@ 25 A, Pulse, $T_{VJ} = 125^\circ\text{C}$	-	0.45	V
$I_{R1}$	Reverse Current <sup>1</sup>	@ $V_R = \text{rated } V_R$ , $T_{VJ} = 25^\circ\text{C}$	-	20	mA
$I_{R2}$		@ $V_R = \text{rated } V_R$ , $T_{VJ} = 125^\circ\text{C}$	-	80	mA
$C_T$	Junction Capacitance	@ $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	1170	-	pF

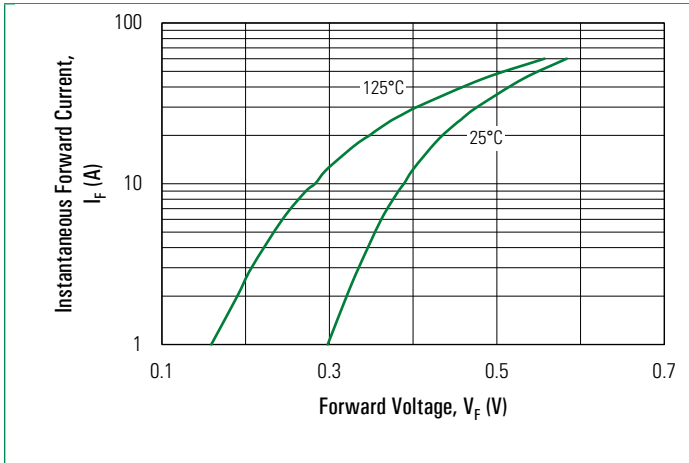
**Note 1:** Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications**

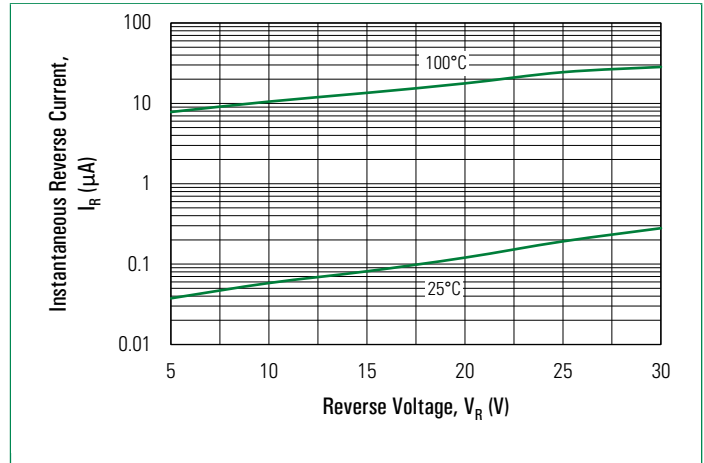
Symbol	Characteristics	Condition	Specification	Units
$T_{VJ}$	Junction Temperature	-	-55 to +150	$^\circ\text{C}$
$T_O$	Operation temperature	-	-55 to +125	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-	-55 to +150	$^\circ\text{C}$
$M_D$	Mounting torque	-	Min 0.4 Max 0.6	Nm
$F_C$	Mounting force with clip	-	Min 20 Max 60	N
$R_{thJC}$	Maximum Thermal Resistance Junction to Case	DC operation	1.4	K/W
$R_{thCS}$	Typical Thermal Resistance Case to Heat Sink	-	0.5	K/W
wt	Approximate Weight	-	1.6	g

## Characteristic Curves

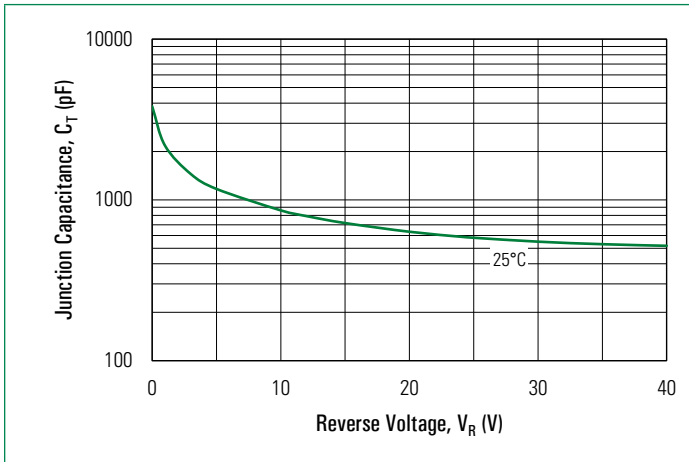
**Fig. 1. Typical Forward Characteristics**



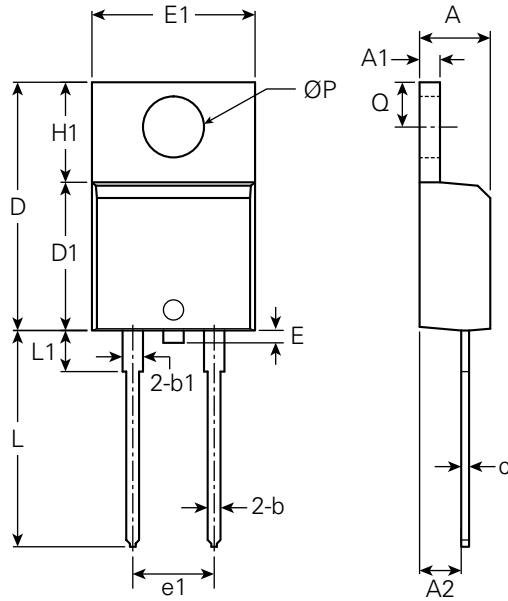
**Fig. 2. Typical Reverse Characteristics**



**Fig. 3. Typical Junction Capacitance**

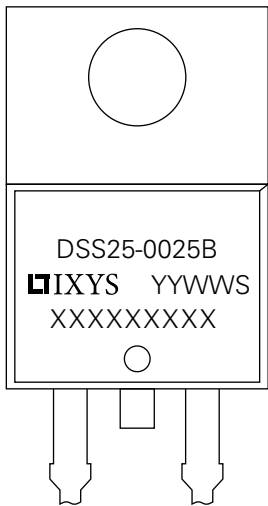


Part Outline Drawing (TO-220AC)



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	0.10	-	0.135	2.54	-	3.43
ØP	-	0.14	-	-	3.56	-

Part Number and Marking

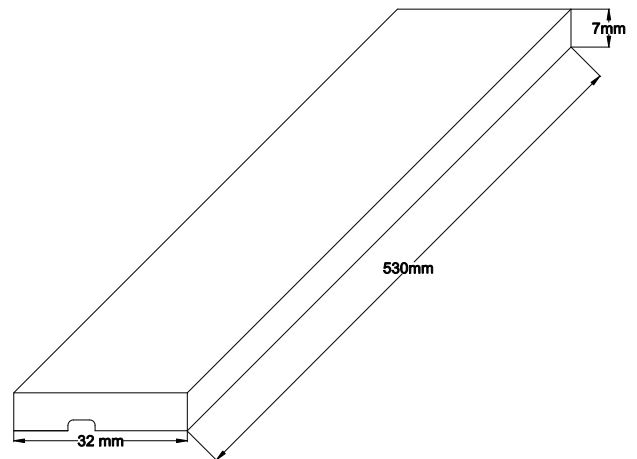


- D = Diode
- S = Schottky Diode
- S = Product Generation
- 25 = Current Rating
- 0025 = Voltage Rating
- B = Package Code
- YY = Year
- WW = Work Week
- S = Plant Location Code
- XXXXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSS25-0025B	DSS25-0025B	Tube	50 pcs/ tube

Packing Specifications



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Part of:

