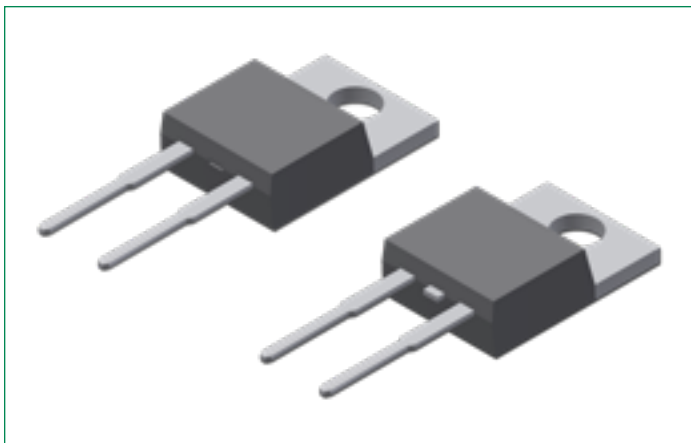


DSS16-0045A

45 V, 16 A Schottky Rectifier Diode

RoHS

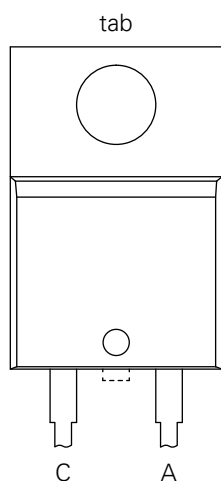
Pb



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)



Applications:

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

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 @ $T_C=160^\circ\text{C}$, rectangular wave form	16	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current	10 ms, Half Sine pulse, $T_J=25^\circ\text{C}$	280	A
P_{tot}	Total power dissipation	$T_C = 25^\circ\text{C}$	105	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. $f=1\text{ kHz}$	1.5	A

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop ¹	@ 16A, Pulse, $T_J = 25^\circ\text{C}$	–	0.68	V
V_{F1}		@ 16A, Pulse, $T_J = 125^\circ\text{C}$	–	0.60	V
I_{R1}	Reverse Current*	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	–	500	μA
I_{R2}		@ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$	–	5	mA
C_T	Junction Capacitance	@ $V_R = 5\text{ V}$, $T_C = 25^\circ\text{C}$ $f_{SIG} = 1\text{ MHz}$	707	–	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	1.4	$^\circ\text{C/W}$
$R_{\theta CS}$	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

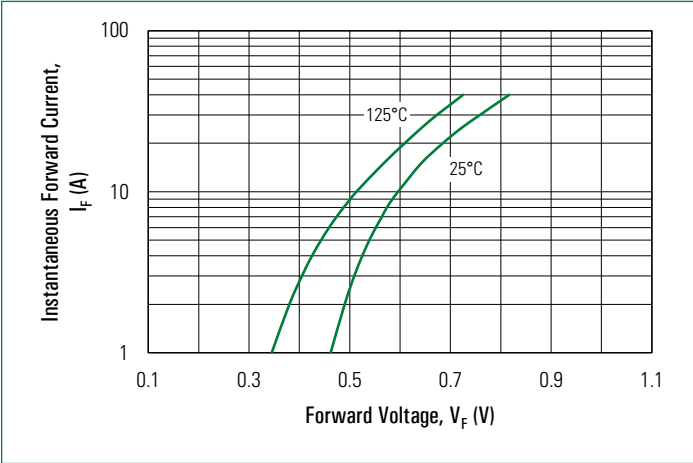


Fig. 2. Typical Reverse Characteristics

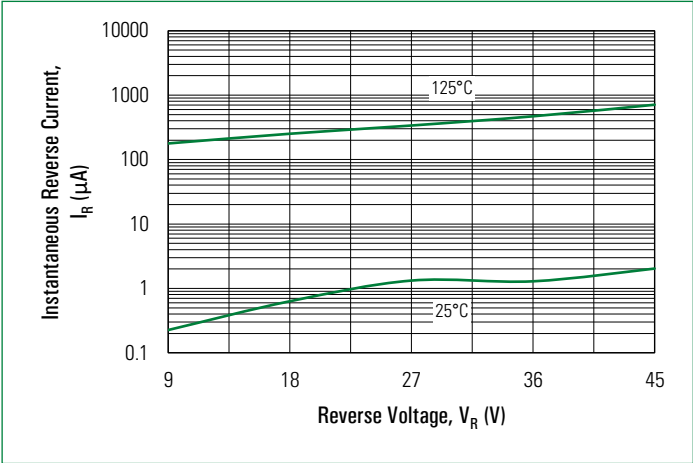
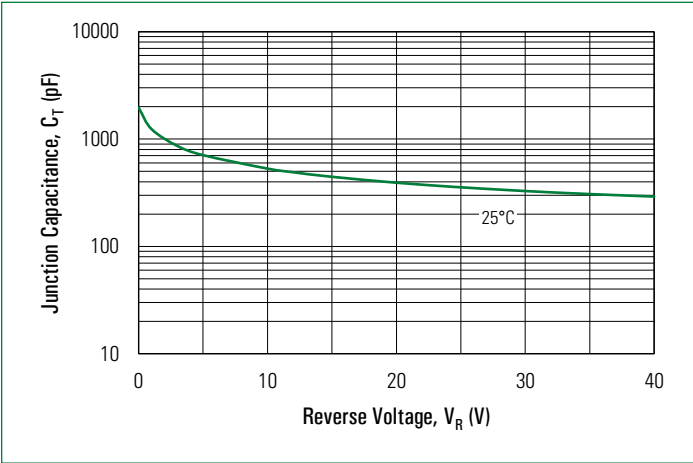
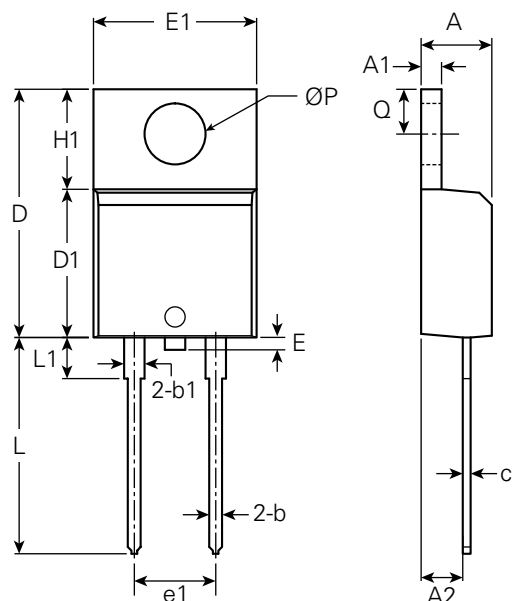


Fig. 3. Typical Junction Capacitance

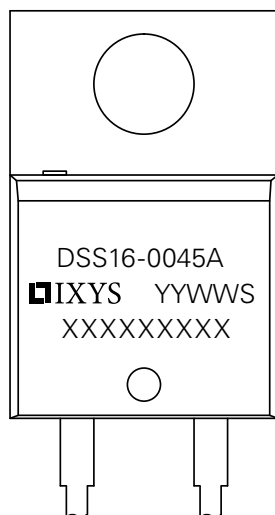


Part Outline Drawing (TO-220AC)



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

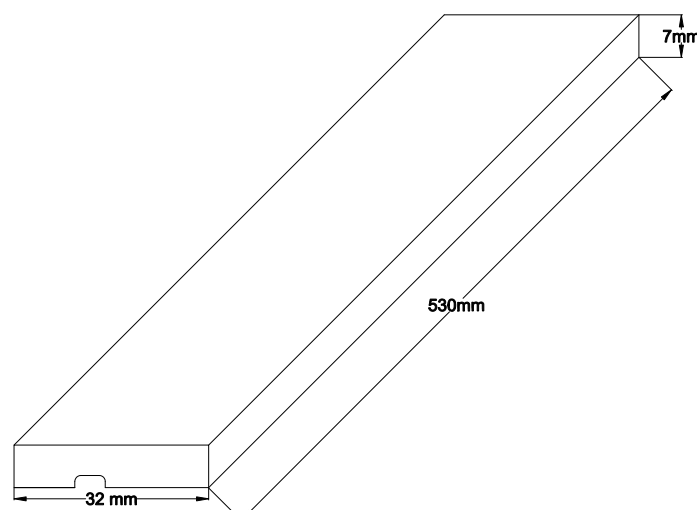


DS = Schottky Diode
 S = Product Generation
 16 = Current Rate
 0045 = Voltage Rating
 A = Package Code
 YY = Year
 WW = Work Week
 S = Plant Location Code
 XXXXXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSS16-0045A	DSS16-0045A	Tube	50 pcs/ tube

Packing Specifications



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