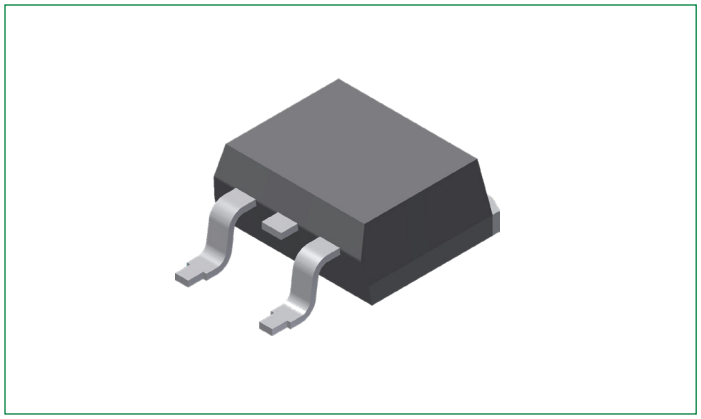
DSS16-01AS

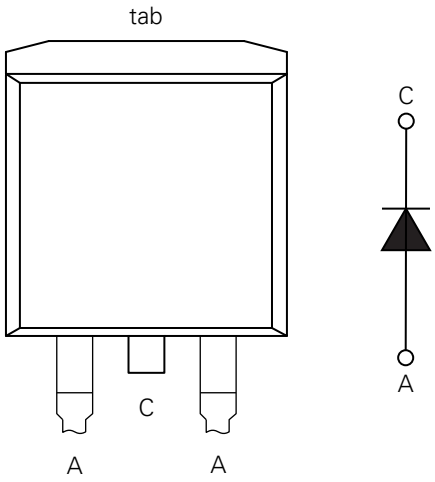
100 V, 16 A Schottky Rectifier Diode



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-263AB)



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

Applications:

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

Revised: TK.07/14/2023

Maximum Ratings (T_A = 25°C unless otherwise specified)

Symbol	Characteristics	Condition	Max.	Units
V_{RRM}	Peak Repetitive Reverse Voltage	–	100	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°C, rectangular wave form	16	A
I_{FSM}	Peak One Cycle Non-Repetitive Surge Current (Per Leg)	10 ms, Half Sine pulse, T_J=25°C	230	A
P_{tot}	Total power dissipation	T_C= 25°C	105	W
E_{AS}	Non-repetitive avalanche energy	I_{AS} = 10A, L = 100 µH, T_J = 25°C	5	mJ
I_{AR}	Repetitive avalanche current	V_A = 1.5, V_R typ., f = 1 kHz	1	A

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

Symbol	Characteristics	Conditions	Typ.	Max.	Units
V_{F1}	Forward Voltage Drop (Per Leg)[1]	@ 16A, Pulse, T_J = 25°C	–	0.83	V
V_{F2}		@ 16A, Pulse, T_J = 125°C	–	0.65	V
I_{R1}	Reverse Current (Per Leg)[1]	@V_R = rated V_R, T_J = 25°C	–	500	uA
I_{R2}		@V_R = rated V_R, T_J = 125°C	–	5	mA
C_T	Junction Capacitance (Per Leg)	@V_R = 12 V, T_C = 25 °C f_{SIG} = 1MHz	334	–	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	1.40	°C/W
$R_{\theta CS}$	Typical Thermal Resistance Case to Heat Sink	–	0.25	°C/W
wt	Approximate Weight	–	1.85	g

Characteristic Curves

Fig. 1. Typical Forward Characteristics

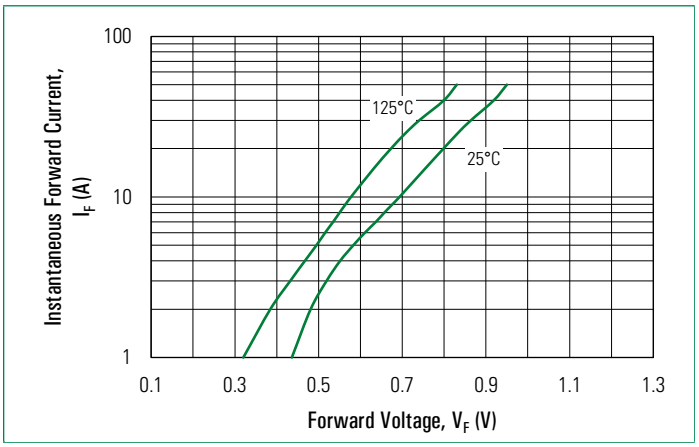


Fig. 2. Typical Reverse Characteristics

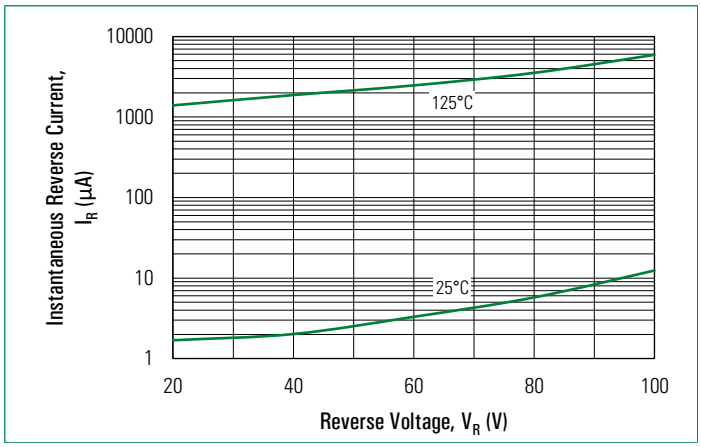
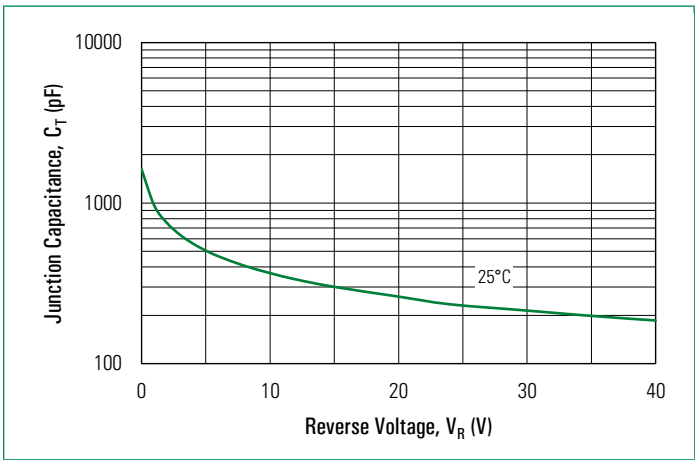
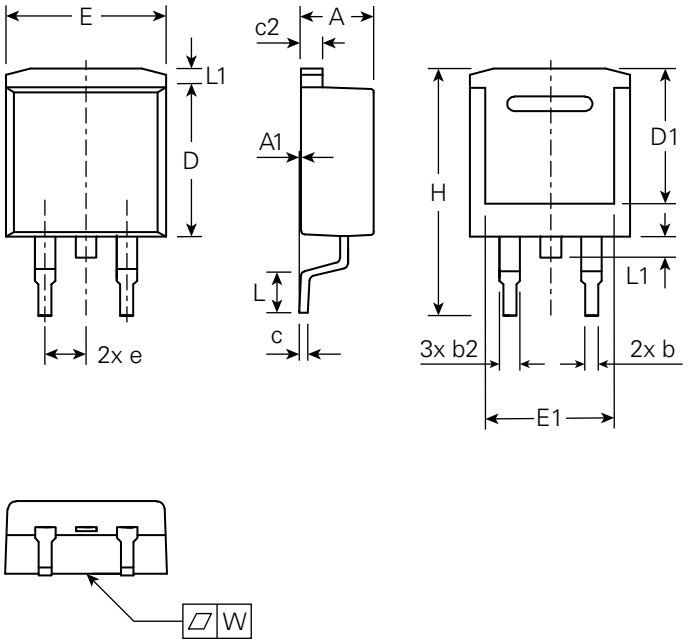


Fig. 3. Typical Junction Capacitance

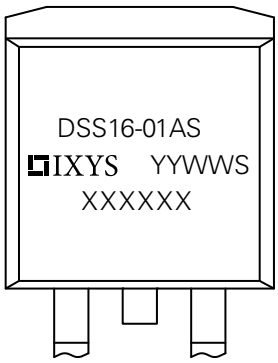


Part Outline Drawing (TO-263AB)



Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.16	–	0.19	4.06	–	4.83
A1	0	–	0.010	0	–	0.26
b	0.020	–	0.039	0.51	–	0.99
b1	0.045	–	0.070	1.14	–	1.78
c	0.012	–	0.029	0.31	–	0.74
c1	0.045	–	0.064	1.14	–	1.65
D	0.330	–	0.379	8.38	–	9.65
D1	0.251	–	–	6.40	–	–
E1	0.244	–	–	6.22	–	–
E2	0.379	–	0.420	9.65	–	10.67
e	0.100 BSC			2.54 BSC		
H	0.575	–	0.625	14.61	–	15.88
L	0.070	–	0.110	1.78	–	2.80
L1	–	–	0.066	–	–	1.68
L2	–	–	0.086	–	–	2.20
L3	0.010 BSC			0.255 BSC		

Part Number and Marking

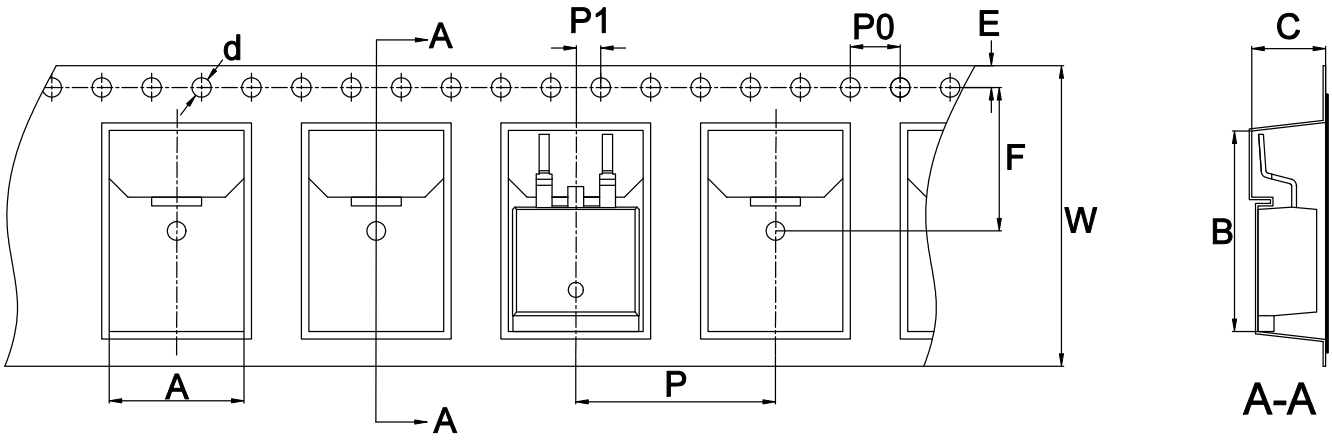


D = Diode
S = Schottky Diode
S Product Generation
16 = Current Rate
01 = Voltage Rating
AS = Package Code
YY = Year
WW = Work Week
S = Plant Location Code
XXXXXX = Lot Number

Ordering Information

Part Number	Marking	Packing Mode	Quantity
DSS16-01AS-TRL	DSS16-01AS	Reel	800 pcs/ reel

Carrier Tape Specification (TO-263AB)



Symbol	Inches			Millimeters		
	Min.	Typical	Max.	Min.	Typical	Max.
A	0.421	–	0.429	10.70	–	10.90
B	0.631	–	0.639	16.03	–	16.23
C	0.201	–	0.209	5.11	–	5.31
d	0.057	–	0.065	1.45	–	1.65
E	0.065	–	0.07	1.65	–	1.85
F	0.449	–	0.457	11.40	–	11.60
P0	0.153	–	0.161	3.90	–	4.10
P	0.626	–	0.664	15.90	–	16.10
P1	0.075	–	0.082	1.90	–	2.10
W	0.941	–	0.957	23.90	–	24.30