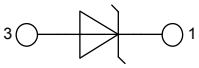
Schottky Diode

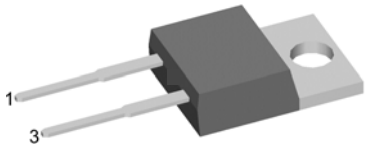
V_{RRM} = 25 V
I_{FAV} = 25 A
V_F = 0.45 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Single Diode

Part number

DSS25-0025B





Backside: cathode

Features / Advantages:

- Very low Vf
- Extremely low switching losses
- low Irm values
- Improved thermal behaviour
- High reliability circuit operation
- Low voltage peaks for reduced protection circuits
- Low noise switching

Applications:

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

Package:

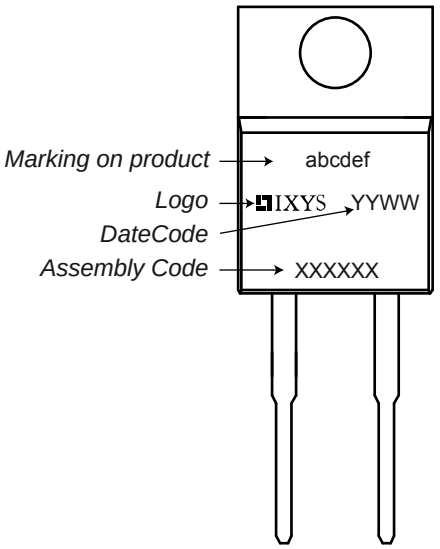
- Housing: TO-220
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

Symbol	Definition	Conditions		Ratings min.	typ.	max.	Unit
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25°C			25	V
I_R	*reverse current*	V_R = 25 V	T_{VJ} = 25°C			20	mA
		V_R = 25 V	T_{VJ} = 100°C			80	mA
V_F	*forward voltage*	I_F = 25 A	T_{VJ} = 25°C			0.52	V
		I_F = 50 A				0.67	V
		I_F = 25 A	T_{VJ} = 125°C			0.45	V
		I_F = 50 A				0.66	V
I_{FAV}	*average forward current*	rectangular, d = 0.5	T_C = 125°C			25	A
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			0.21	V
r_F	*slope resistance* }					8.8	mΩ
R_{thJC}	*thermal resistance junction to case*					1.40	K/W
T_{VJ}	*virtual junction temperature*			-55		150	°C
P_{tot}	*total power dissipation*		T_C = 25°C			90	W
I_{FSM}	*max. forward surge current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			330	A
E_{AS}	*non-repetitive avalanche energy*	I_{AS} = 20 A; L = 100 µH	T_{VJ} = 25°C			20	mJ
I_{AR}	*repetitive avalanche current*	V_A = 1.5·V_R typ.; f = 10 kHz				2	A

Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per pin [1]			35	A
R_{thCH}	*thermal resistance case to heatsink*			0.50		K/W
T_{stg}	*storage temperature*		-55		150	°C
Weight				2		g
M_D	*mounting torque*		0.4		0.8	Nm
F_C	*mounting force with clip*		20		60	N

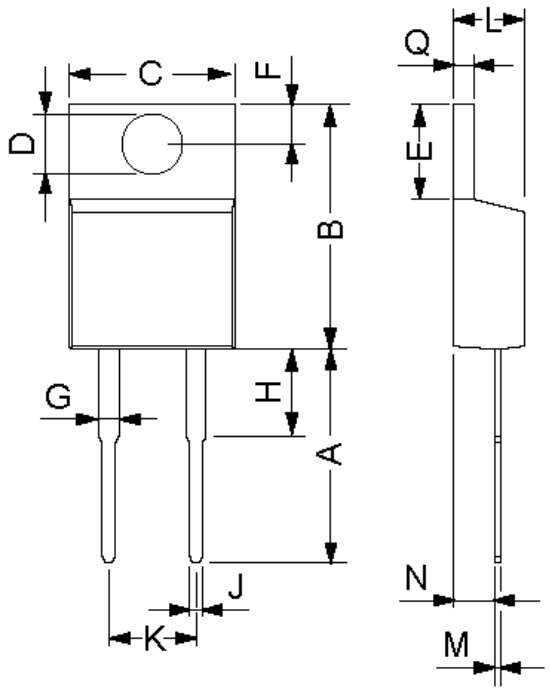
[1] I_{RMS} is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.
In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.

Product Marking



Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSS25-0025B	DSS25-0025B	Tube	50	475114

Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.7	14.73	0.5	0.58
B	14.23	16.51	0.56	0.65
C	9.66	10.66	0.38	0.42
D	3.54	4.08	0.139	0.161
E	5.85	6.85	2.3	0.42
F	2.54	3.42	0.1	0.135
G	1.15	1.77	0.045	0.07
H	-	6.35	-	0.25
J	0.64	0.89	0.025	0.035
K	4.83	5.33	0.19	0.21
L	3.56	4.82	0.14	0.19
M	0.51	0.76	0.02	0.03
N	2.04	2.49	0.08	0.115
Q	0.64	1.39	0.025	0.055

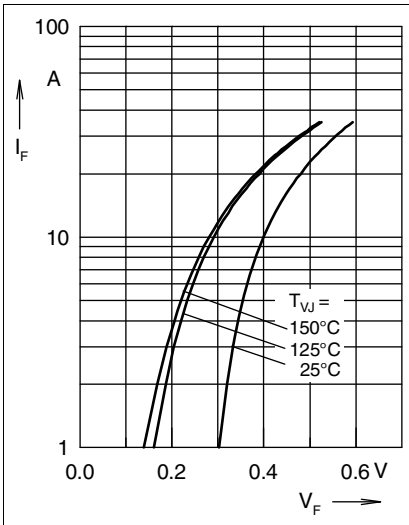


Fig. 1 Maximum forward voltage drop characteristics

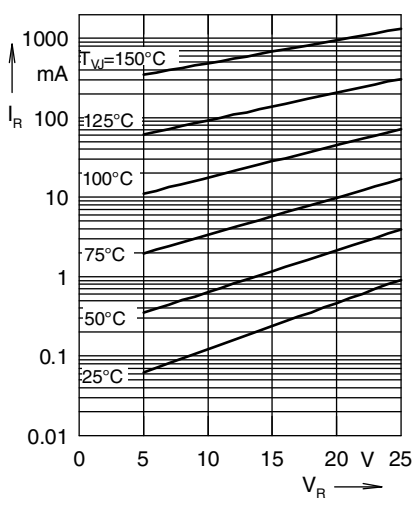


Fig. 2 Typ. value of reverse current I_R vs. reverse voltage V_R

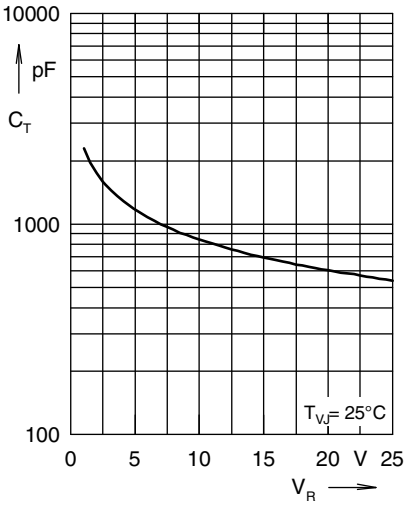


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

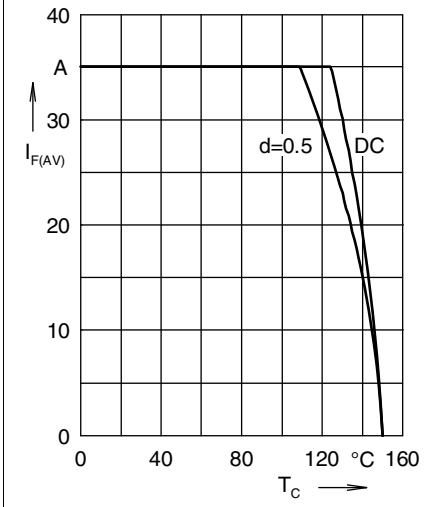


Fig. 4 Avg. forward current $I_{F(AV)}$ vs. case temperature T_C

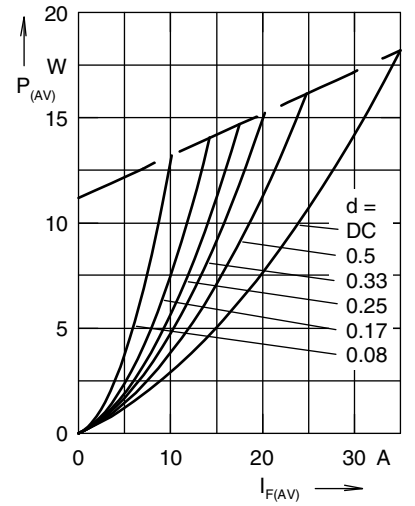


Fig. 5 Forward power loss characteristics

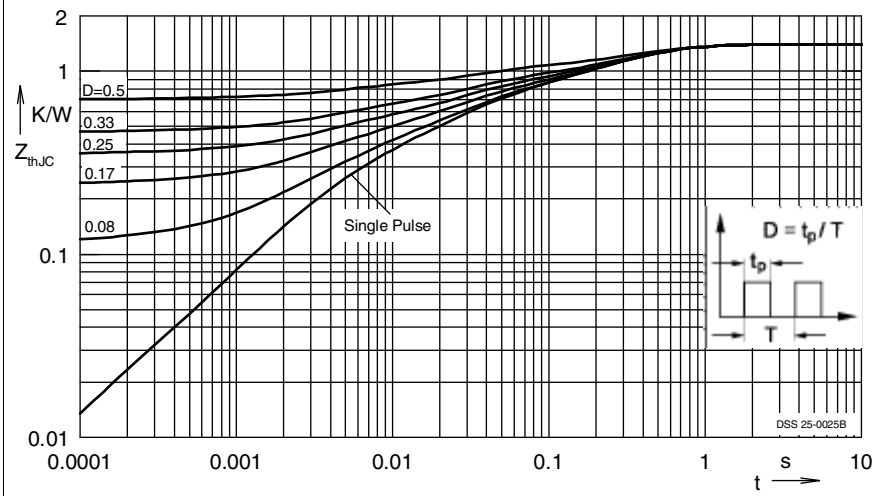


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode