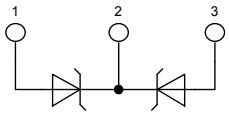
Schottky Diode

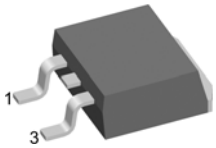
V_{RRM} = 30 V
I_{FAV} = 2x 25 A
V_F = 0.35 V

High Performance Schottky Diode
Low Loss and Soft Recovery
Common Cathode

Part number

DSSK48-003BS





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:

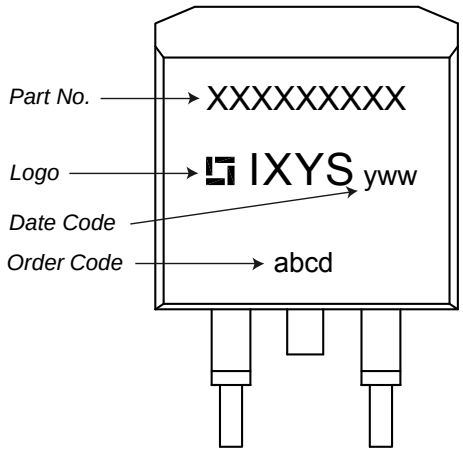
- Housing: TO-263 (D2Pak)
- Industry standard outline
- Epoxy meets UL 94V-0
- RoHS compliant

				Ratings			
Symbol	**Definition**	**Conditions**		**min.**	**typ.**	**max.**	**Unit**
V_{RRM}	*max. repetitive reverse voltage*		T_{VJ} = 25°C			30	V
I_R	*reverse current*	V_R = 30 V	T_{VJ} = 25°C			20	mA
		V_R = 30 V	T_{VJ} = 100°C			60	mA
V_F	*forward voltage*	I_F = 20 A	T_{VJ} = 25°C			0.44	V
		I_F = 40 A				0.54	V
		I_F = 20 A	T_{VJ} = 125°C			0.35	V
		I_F = 40 A				0.48	V
I_{FAV}	*average forward current*	rectangular d = 0.5	T_C = 130°C			25	A
V_{F0}	*threshold voltage* } *for power loss calculation only*		T_{VJ} = 150°C			0.19	V
r_F	*slope resistance* }					6.8	mΩ
R_{thJC}	*thermal resistance junction to case*					1.20	K/W
T_{VJ}	*virtual junction temperature*			-55		150	°C
P_{tot}	*total power dissipation*		T_C = 25°C			105	W
I_{FSM}	*max. forward surge current*	t = 10 ms (50 Hz), sine	T_{VJ} = 45°C			300	A
C_J	*junction capacitance*	V_R = 5 V; f = 1 MHz	T_{VJ} = 25°C		1.77		nF

Symbol	Definition	Conditions	Ratings min.	typ.	max.	Unit
I_{RMS}	*RMS current*	per pin [1]			35	A
R_{thCH}	*thermal resistance case to heatsink*			0.25		K/W
T_{stg}	*storage temperature*		-55		150	°C
Weight				2		g
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.

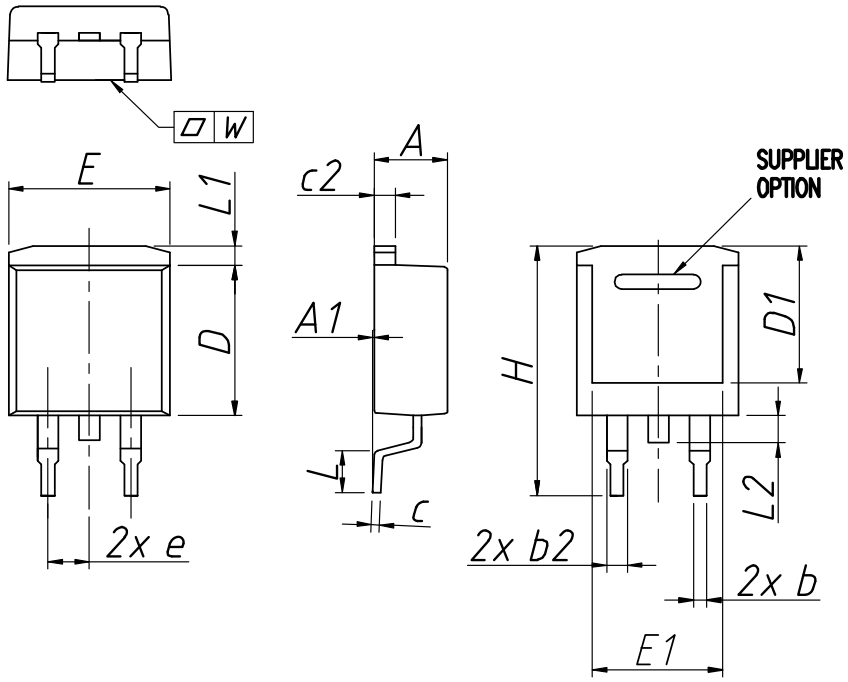
Product Marking



Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSSK48-003BS	DSSK48-003BS	Tape & Reel	800	484326

Similar Part	Package	Voltage class
DSSK48-003B	TO-220AB (3)	30
DSSK48-0025B	TO-220AB (3)	25

Outlines TO-263 (D2Pak)



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.06	4.83	0.160	0.190
A1	typ. 0.10		typ. 0.004	
b	0.51	0.99	0.020	0.039
b2	1.14	1.40	0.045	0.055
c	0.40	0.74	0.016	0.029
c2	1.14	1.40	0.045	0.029
D	8.38	9.40	0.330	0.370
D1	8.00	8.89	0.315	0.350
E	9.65	10.41	0.380	0.410
E1	6.22	8.20	0.245	0.323
e	2,54 BSC		0,100 BSC	
H	14.61	15.88	0.575	0.625
L	1.78	2.79	0.070	0.110
L1	1.02	1.68	0.040	0.066
L2	1.02	1.52	0.040	0.060
W	typ. 0.02	0.040	typ. 0.0008	0.0016

All dimensions conform with and/or are within JEDEC standard.

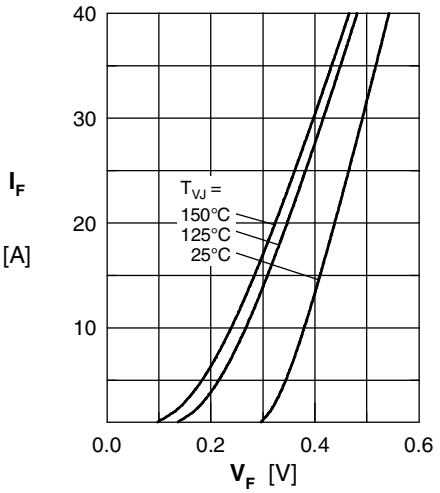


Fig. 1 Maximum forward voltage drop characteristics

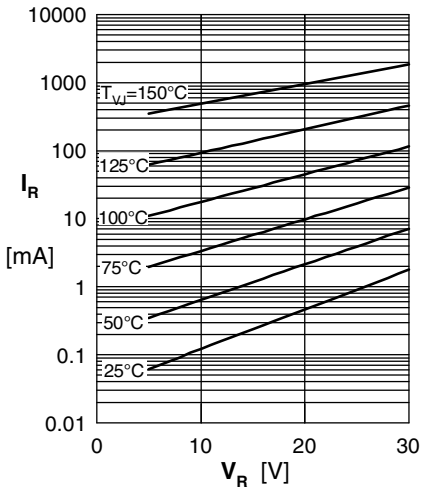


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

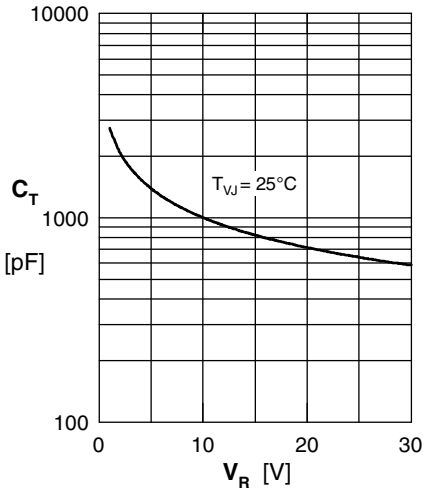


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

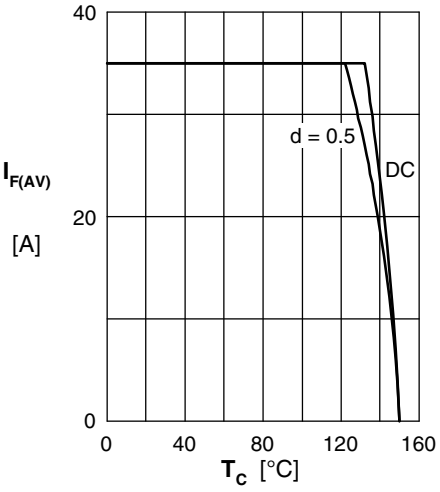


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temperature T_C

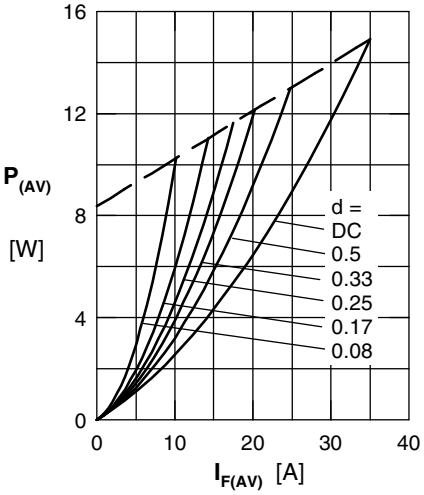


Fig. 5 Forward power loss characteristics

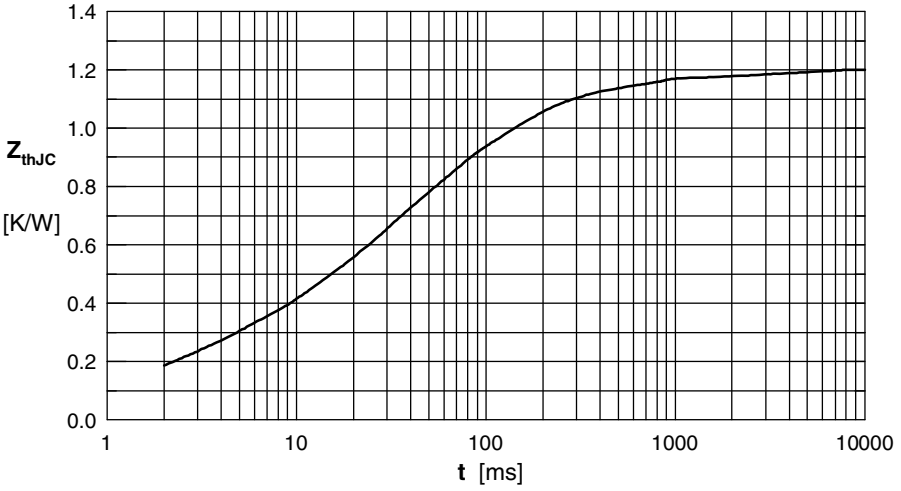


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode