

## **Excellent Integrated System Limited**

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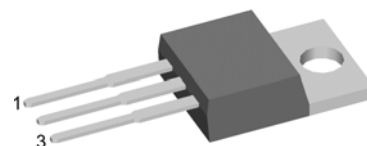
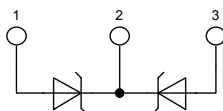
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## Schottky Diode

High Performance Schottky Diode  
 Low Loss and Soft Recovery  
 Common Cathode

Part number

DSSK48-003B



Backside: cathode

### Features / Advantages:

- Very low Vf
- Extremely low switching losses
- low I<sub>rm</sub> 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

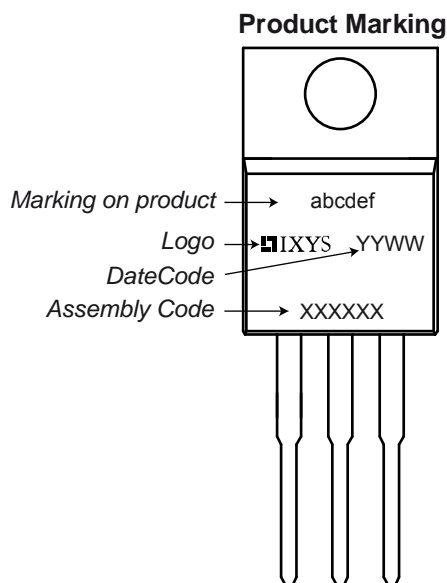
### Package:

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

Symbol	Definition	Conditions	Ratings			Unit	
			min.	typ.	max.		
V <sub>RRM</sub>	max. repetitive reverse voltage				30	V	
I <sub>R</sub>	reverse current	V <sub>R</sub> = 30V			20	mA	
		V <sub>R</sub> = 30V			60	mA	
V <sub>F</sub>	forward voltage	I <sub>F</sub> = 20A			0.44	V	
		I <sub>F</sub> = 40A			0.54	V	
		I <sub>F</sub> = 20A	T <sub>VJ</sub> = 125°C			0.35	V
		I <sub>F</sub> = 40A				0.48	V
I <sub>FAV</sub>	average forward current	rectangular d = 0.5			25	A	
V <sub>F0</sub>	threshold voltage				0.19	V	
r <sub>F</sub>	slope resistance				6.8	mΩ	
R <sub>thJC</sub>	thermal resistance junction to case				1.20	K/W	
T <sub>VJ</sub>	virtual junction temperature		-55		150	°C	
P <sub>tot</sub>	total power dissipation				105	W	
I <sub>FSM</sub>	max. forward surge current	t = 10 ms (50 Hz), sine			300	A	
C <sub>J</sub>	junction capacitance	V <sub>R</sub> = 5V; f = 1 MHz		1.77		nF	

Symbol	Definition	Conditions	Ratings			Unit
			min.	typ.	max.	
$I_{RMS}$	RMS current	per pin <sup>1)</sup>			35	A
$R_{thCH}$	thermal resistance case to heatsink			0.50		K/W
$T_{stg}$	storage temperature		-55		150	°C
<b>Weight</b>				2		g
$M_D$	mounting torque		0.4		0.6	Nm
$F_C$	mounting force with clip		20		60	N

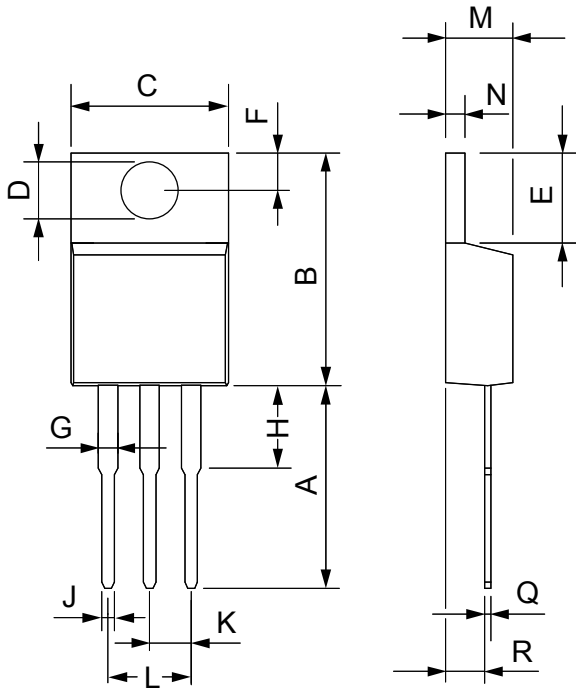
<sup>1)</sup>  $I_{RMS}$  is typically limited by: 1. pin-to-chip resistance; or by 2. current capability of the chip.  
 In case of 1, a common cathode/anode configuration and a non-isolated backside, the whole current capability can be used by connecting the backside.



Ordering	Part Name	Marking on Product	Delivering Mode	Base Qty	Code Key
Standard	DSSK48-003B	DSSK48-003B	Tube	50	484008

Similar Part	Package	Voltage class
DSSK48-003BS	TO-263AB (D2Pak)	30
DSSK48-0025B	TO-220AB (3)	25

Outlines TO-220



Dim.	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	12.70	13.97	0.500	0.550
B	14.73	16.00	0.580	0.630
C	9.91	10.66	0.390	0.420
D	3.54	4.08	0.139	0.161
E	5.85	6.85	0.230	0.270
F	2.54	3.18	0.100	0.125
G	1.15	1.65	0.045	0.065
H	2.79	5.84	0.110	0.230
J	0.64	1.01	0.025	0.040
K	2.54	BSC	0.100	BSC
M	4.32	4.82	0.170	0.190
N	1.14	1.39	0.045	0.055
Q	0.35	0.56	0.014	0.022
R	2.29	2.79	0.090	0.110

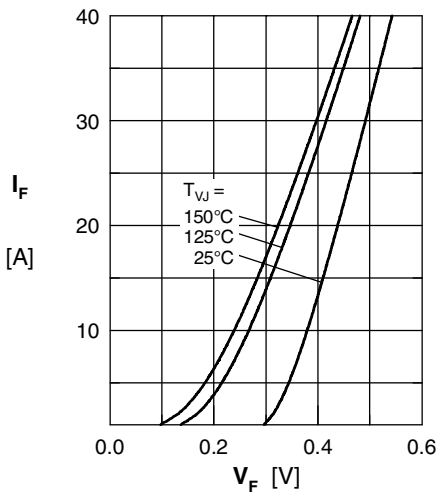


Fig. 1 Maximum forward voltage drop characteristics

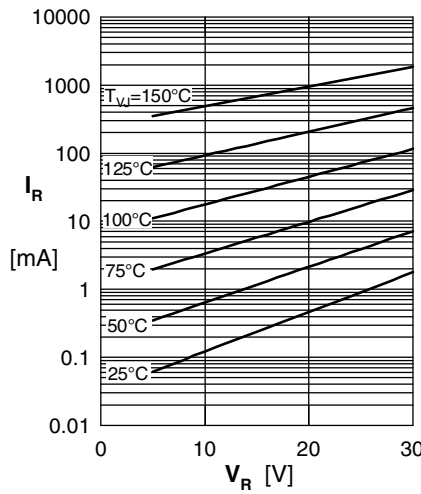


Fig. 2 Typ. reverse current  $I_R$  vs. reverse voltage  $V_R$

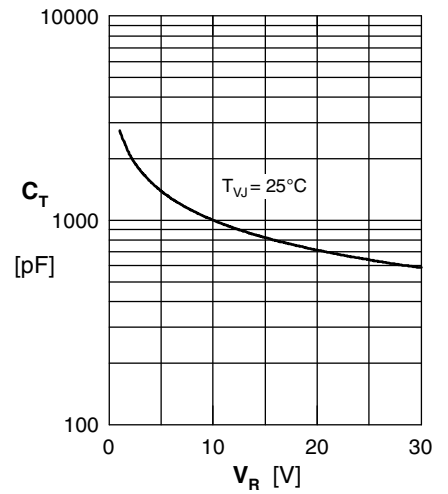


Fig. 3 Typ. junction capacitance  $C_T$  vs. reverse voltage  $V_R$

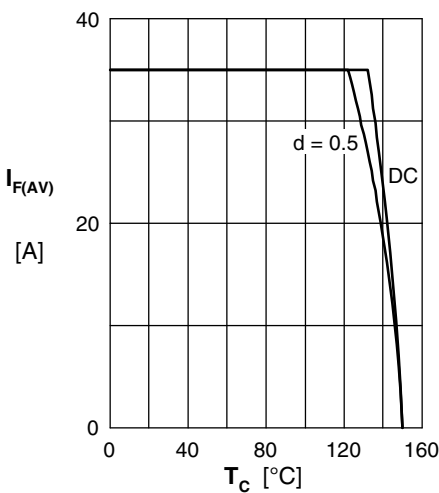


Fig. 4 Average forward current  $I_{F(AV)}$  vs. case temperature  $T_C$

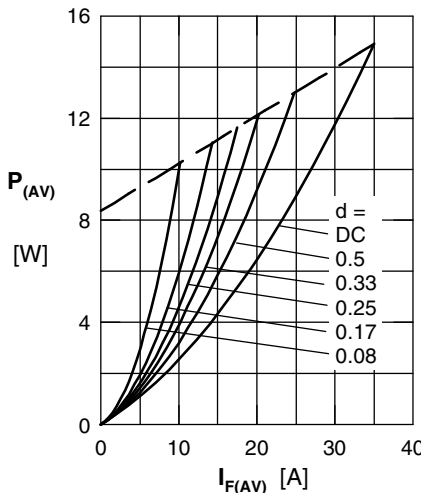


Fig. 5 Forward power loss characteristics

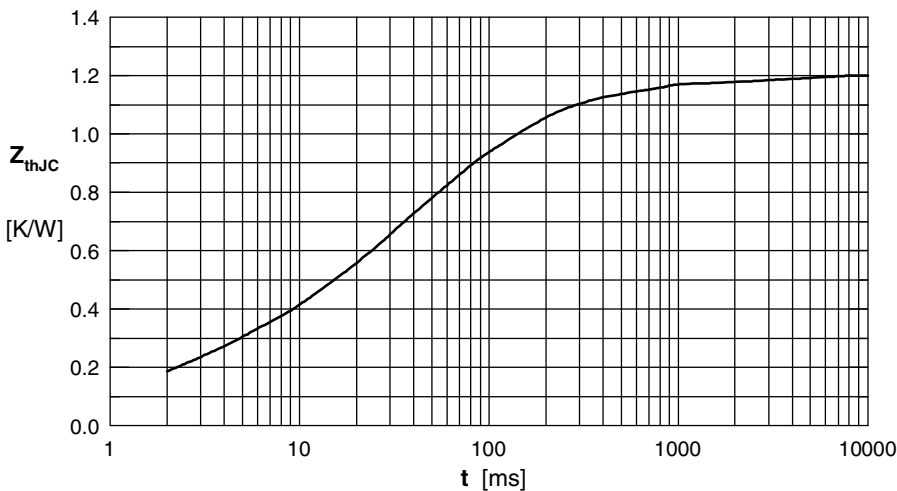


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode