

Schottky Diode

$$V_{RRM} = 60 \text{ V}$$

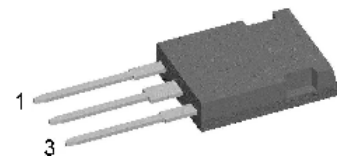
$$I_{FAV} = 2 \times 40 \text{ A}$$

$$V_F = 0,51 \text{ V}$$

High Performance Schottky Diode
 Low Loss and Soft Recovery
 Common Cathode

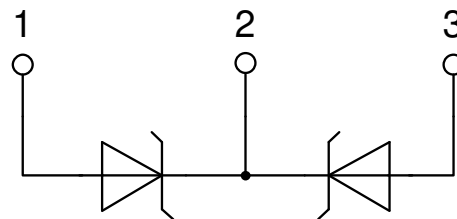
Part number

DSSK80-006BR



Backside: isolated

 E72873



Features / Advantages:

- Very low V_f
- Extremely low switching losses
- Low I_{rm} 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: ISOPLUS247

- Isolation Voltage: 3600 V~
- Industry standard outline
- RoHS compliant
- Epoxy meets UL 94V-0
- Soldering pins for PCB mounting
- Backside: DCB ceramic
- Reduced weight
- Advanced power cycling

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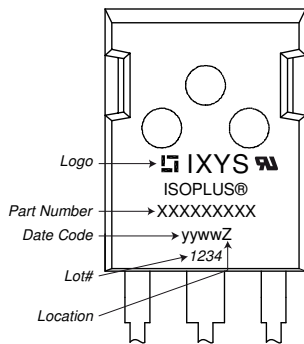


Schottky				Ratings			
Symbol	Definition	Conditions		min.	typ.	max.	Unit
V_{RSM}	max. non-repetitive reverse blocking voltage					60	V
V_{RRM}	max. repetitive reverse blocking voltage					60	V
I_R	reverse current, drain current	$V_R = 60\text{ V}$		$T_{VJ} = 25^\circ\text{C}$		2	mA
		$V_R = 60\text{ V}$		$T_{VJ} = 100^\circ\text{C}$		200	mA
V_F	forward voltage drop	$I_F = 40\text{ A}$		$T_{VJ} = 25^\circ\text{C}$		0,55	V
		$I_F = 80\text{ A}$				0,75	V
		$I_F = 40\text{ A}$		$T_{VJ} = 125^\circ\text{C}$		0,51	V
		$I_F = 80\text{ A}$				0,74	V
I_{FAV}	average forward current	$T_C = 115^\circ\text{C}$	rectangular	$T_{VJ} = 150^\circ\text{C}$		40	A
			d = 0.5				
V_{F0}	threshold voltage	} for power loss calculation only		$T_{VJ} = 150^\circ\text{C}$		0,27	V
r_F	slope resistance					5,7	mΩ
R_{thJC}	thermal resistance junction to case					0,8	K/W
R_{thCH}	thermal resistance case to heatsink				0,25		K/W
P_{tot}	total power dissipation			$T_C = 25^\circ\text{C}$		190	W
I_{FSM}	max. forward surge current	t = 10 ms; (50 Hz), sine; $V_R = 0\text{ V}$		$T_{VJ} = 45^\circ\text{C}$		700	A
C_J	junction capacitance	$V_R = 12\text{ V}$ f = 1 MHz		$T_{VJ} = 25^\circ\text{C}$		1,34	nF



Package ISOPLUS247		Ratings				
Symbol	Definition	Conditions	min.	typ.	max.	Unit
I_{RMS}	RMS current	per terminal ¹⁾			70	A
T_{VJ}	virtual junction temperature		-55		150	°C
T_{op}	operation temperature		-55		125	°C
T_{stg}	storage temperature		-55		150	°C
Weight				6		g
F_C	mounting force with clip		20		120	N
$d_{Spp/ App}$	creepage distance on surface / striking distance through air	terminal to terminal	2,7			mm
$d_{Spb/ Apb}$		terminal to backside	4,1			mm
V_{ISOL}	isolation voltage	t = 1 second	3600			V
		t = 1 minute	3000			V

Product Marking



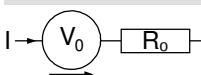
Ordering	Ordering Number	Marking on Product	Delivery Mode	Quantity	Code No.
Standard	DSSK80-006BR	DSSK80-006BR	Tube	30	499552

Similar Part	Package	Voltage class
DSSK80-006B	TO-247AD (3)	60

Equivalent Circuits for Simulation

** on die level*

$T_{VJ} = 150^{\circ}C$

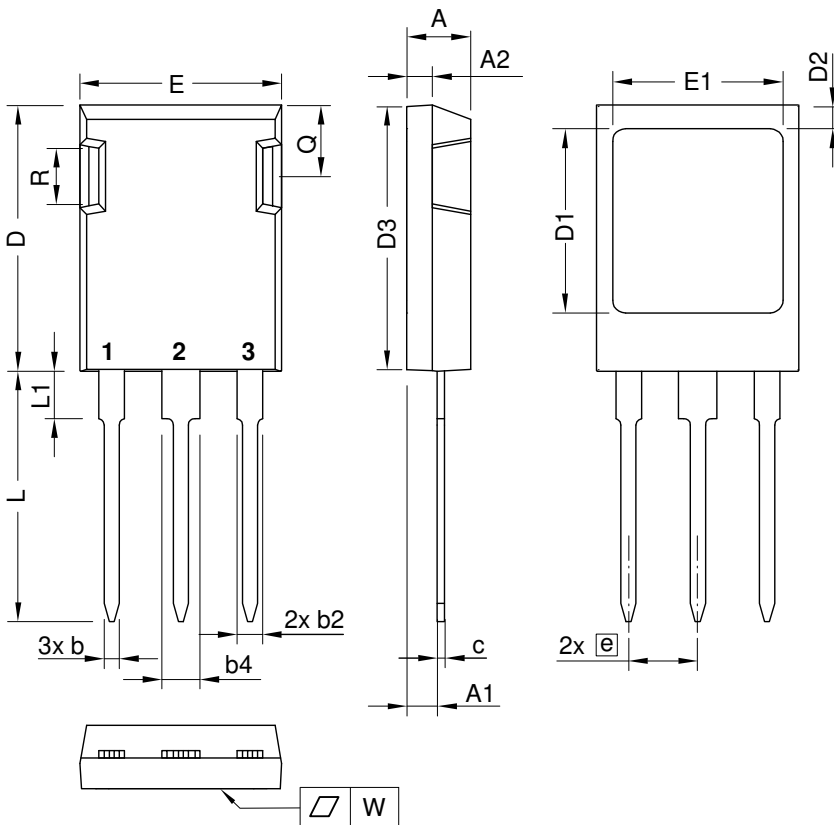


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$V_{0 \max}$	threshold voltage	0,27	V
$R_{0 \max}$	slope resistance *	3,1	mΩ



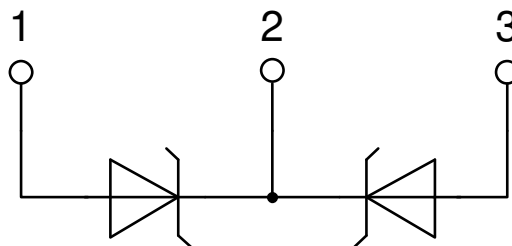
Outlines ISOPLUS247



Dim.	Millimeter		Inches	
	min	max	min	max
A	4.83	5.21	0.190	0.205
A1	2.29	2.54	0.090	0.100
A2	1.91	2.16	0.075	0.085
b	1.14	1.40	0.045	0.055
b2	1.91	2.20	0.075	0.087
b4	2.92	3.24	0.115	0.128
c	0.61	0.83	0.024	0.033
D	20.80	21.34	0.819	0.840
D1	15.75	16.26	0.620	0.640
D2	1.65	2.15	0.065	0.085
D3	20.30	20.70	0.799	0.815
E	15.75	16.13	0.620	0.635
E1	13.21	13.72	0.520	0.540
e	5.45 BSC		0.215 BSC	
L	19.81	20.60	0.780	0.811
L1	3.81	4.38	0.150	0.172
Q	5.59	6.20	0.220	0.244
R	4.25	5.50	0.167	0.217
W	-	0.10	-	0.004

Die konvexe Form des Substrates ist typ. < 0.04 mm über der Kunststoffoberfläche der Bauteilunterseite
The convex bow of substrate is typ. < 0.04 mm over plastic surface level of device bottom side

Die Gehäuseabmessungen entsprechen dem Typ TO-247 AD gemäß JEDEC außer Schraubloch und L_{max} .
This drawing will meet all dimensions requirement of JEDEC outline TO-247 AD except screw hole and except L_{max} .



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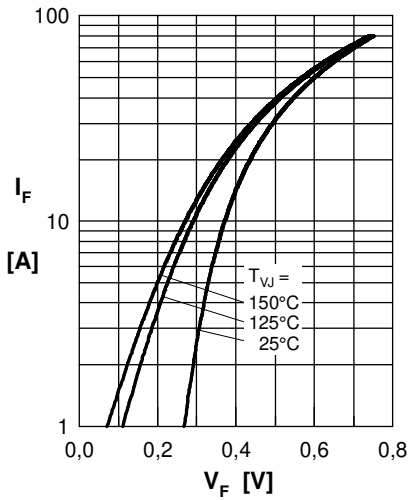


Fig. 1 Max. forward voltage drop characteristics

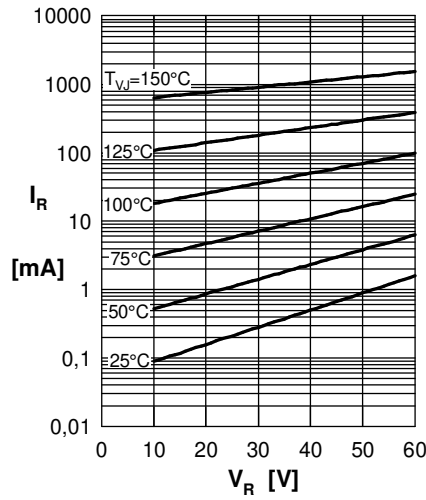


Fig. 2 Typ. reverse current I_R vs. reverse voltage V_R

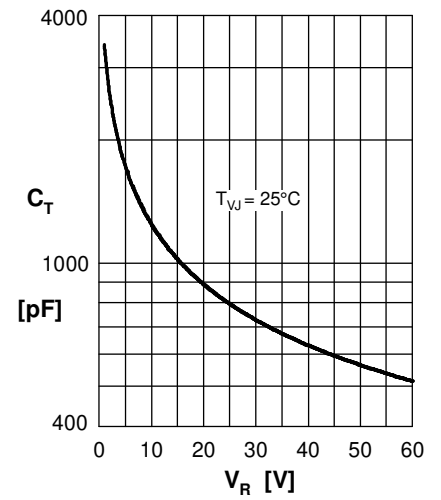


Fig. 3 Typ. junction capacitance C_T vs. reverse voltage V_R

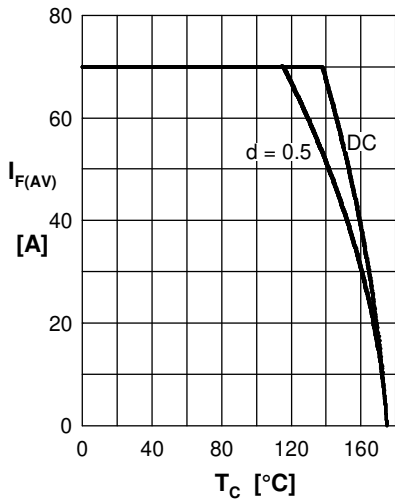


Fig. 4 Average forward current $I_{F(AV)}$ vs. case temp. T_C

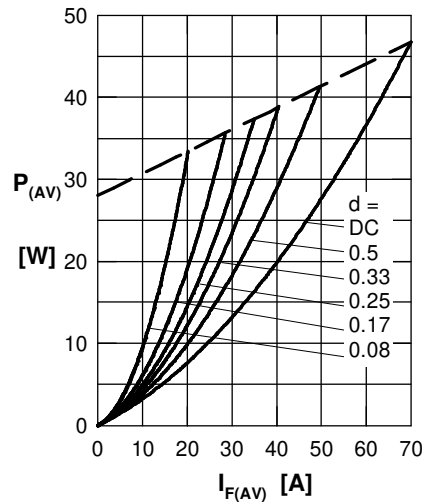


Fig. 5 Forward power loss characteristics

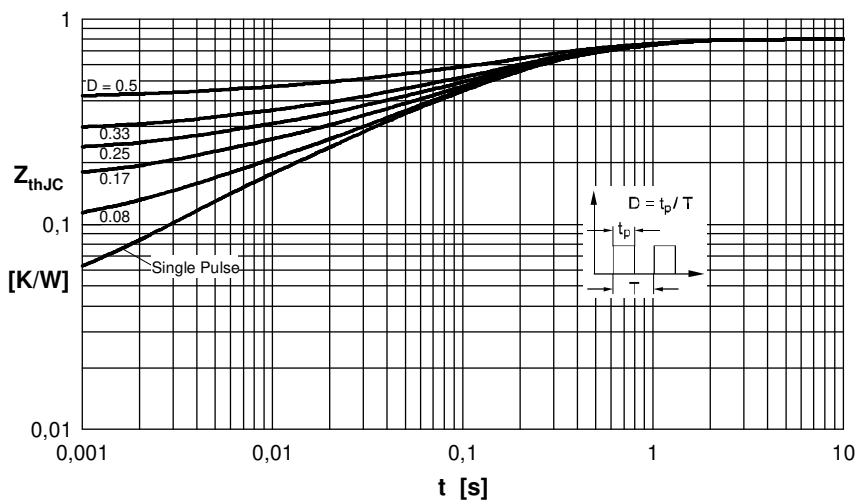


Fig. 6 Transient thermal impedance junction to case at various duty cycles

Note: All curves are per diode