Zakłady Elektronowe
LAMINA S.A.

DB3-4500
Diode

KKDB3-4500, November 2004 version

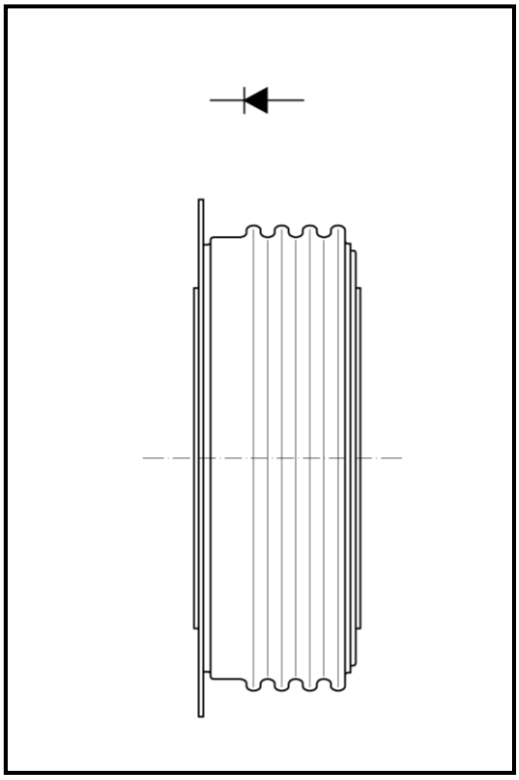
Diode type DB3-4500 are of modern design with pressure contacts, high alumina ceramic insulator and cold-welding encapsulation. Designed for use in power rectifying circuits and equipment under normal operating conditions.

KEY PARAMETERS

U_{RRM}	**up to 2000 V**
$I_{F(AV)}$	**4500 A**
I_{FSM}	**50000 A**

FEATURES

- all diffused design
- high current capabilities
- high surge current capabilities
- high rated voltages
- low thermal impedance
- tested according to IEC standards



Outline type code: JEDEC DO-200AE
See Package Details for further information

APPLICATION

- High Voltage Power Supplies
- Motor Control
- Battery Chargers
- Free Wheeling Diode
- Resistance Welding

Designed for use in high power industrial and commercial electronic circuits and equipment where high currents are encoutered and high reliability is essential. Low forward voltages let minimize energy loss.

ORDERING INFORMATION

When ordering please refer to device code builder presented below.
Please use the complete part number when ordering, quote or in any future correspondence relating to your order.

DB3-4500-□□

voltage class (hundreds of volts)

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ELECTRICAL PARAMETERS

Voltage ratings

Voltage class	U_{RRM}	U_{RSM}	I_{RRM}
	V	V	mA
12	1200	1300	100
14	1400	1500	
16	1600	1700	
18	1800	1900	
20	2000	2100	

Electrical properties

Parameter		Unit	Test conditions	Value
Average forward current @ case temperature	$I_{F(AV)}$	A		4500
	T_c	°C		80
RMS forward current	$I_{F(RMS)}$	A		7060
Surge current	I_{FSM}	A	T_j=175°C, U_R=0,8U_{RRM}, t_p=10ms	50000
I^2t – value	I^2t	kA^2s		12500
Forward voltage drop max.	U_{FM}	V	T_j=175°C, I_{FM}=4000A	1,03
Treshold voltage	$U_{F(T0)}$	V		0, 66
Slope resistance	r_F	mΩ		0,091
Reverse recovery time	t_{rr}	µs	T_j=25°C, I_{FM}=2000A, di_R/dt=25A/µs	25

Termal properties

Parameter		Unit	Test conditions	Value
Thermal resistance, junction to case	R_{thJC}	°C/W	two sided, DC	0,0115
Thermal resistance, case to heatsink	R_{thCS}	°C/W	two sided	0,002
Operating junction temperature	T_{jmin}...T_{jmax}	°C		-40...+175
Storage temperature	T_{stg}	°C		-40...+175

Mechanical properties

Parameter		Unit	Value
Clamping force	F_M	kN	27... 45
Weight	m	g	1130

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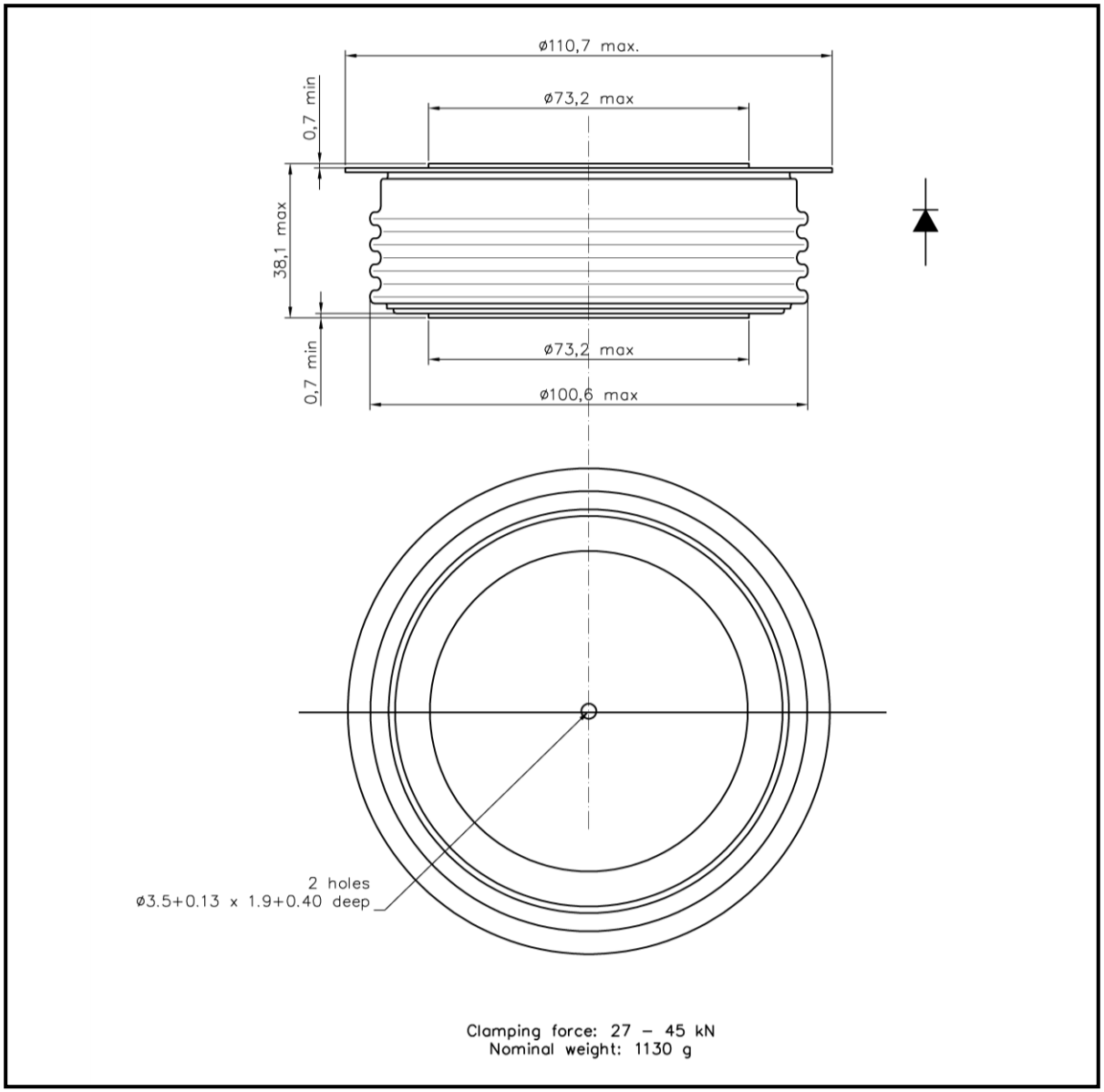
Package details



For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.
Do not scale.

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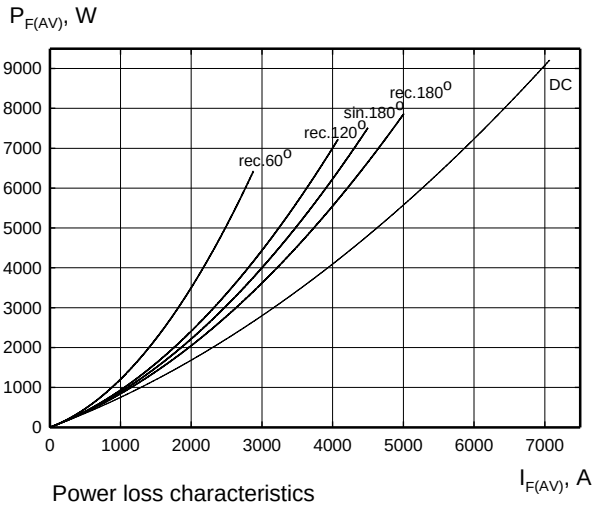
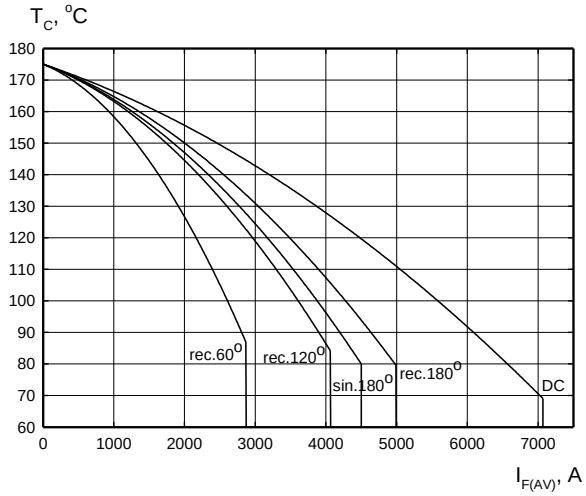
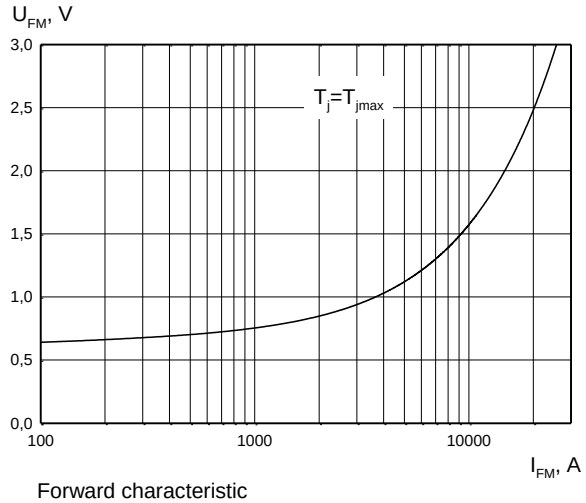
CHARACTERISTICS



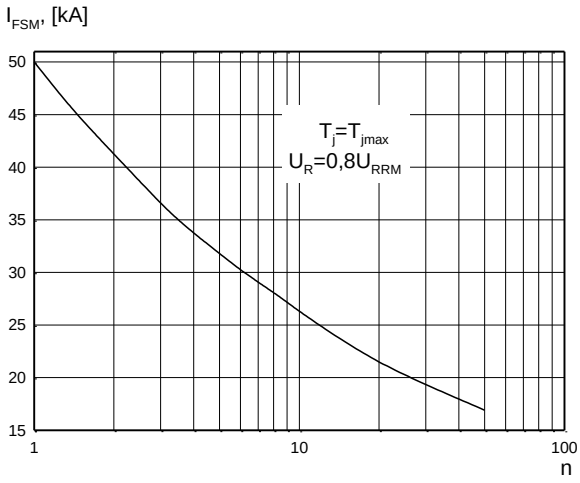
Power loss characteristics



Case temperature ratings



Forward characteristic



Non-repetitive surge current rating

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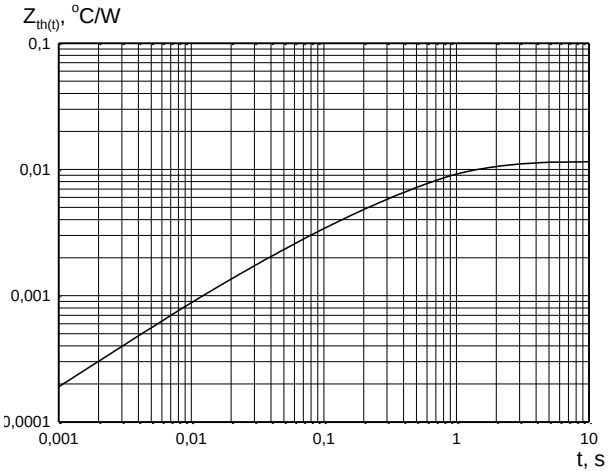

Transient thermal impedance

HEATSINKS

LAMINA S.I. has its own proprietary range of extruded aluminium heatsinks designed to optimise the performance of our semiconductors with natural and forced air flow. High efficiency water cooled copper heatsinks are also available.

DEVICE CLAMPS

Disc devices require the correct clamping force to ensure their best operation. LAMINA S.I. offers a wide selection of clamps to suit all of our manufactured devices.

POWER ASSEMBLY CAPABILITY

LAMINA S.I. provides a support for those customers requiring more than a basic semiconductor and offers precisely assembled Power Blocks according to factory or customer standards.

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