

Dual Diode Power Modules are designed for use in power electronic circuits and equipment under normal operating conditions.

### KEY PARAMETERS

$U_{RRM}$	up to 1600 V
$I_{F(AV)}$	170 A
$I_{FSM}$	5000 A



See package details for further information

### APPLICATION

- High Voltage Power Supplies
- Motor Control
- Battery Chargers
- Resistance Welding

### FEATURES

- electrically isolated base
- high current capabilities
- high surge current capabilities
- high rates voltages
- low thermal impedance (Aluminium Nitride Insulators)
- tested according to IEC standards
- compact size and small weight

Designed for use in high power industrial and commercial power electronic circuits and equipment where high currents are encountered and high reliability is essential.

### 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.

**MD**  **-170-**

Voltage class (hundred volts)  
 Elements configuration (see drawings)

# MD\_-170 Dual Diode Power Module



Zakłady Elektronowe  
**LAMINA S.A.**

KKMDx170, July 2009 version

## ELECTRICAL PARAMETERS

### Voltage ratings

Voltage class	$U_{RRM}$	$U_{RSM}$	$I_{RRM}$
	V	V	mA
04	400	500	30
06	600	700	
08	800	900	
10	1000	1100	
12	1200	1300	
14	1400	1500	
16	1600	1700	

### Electrical properties

Parameter	Unit	Test conditions	Value
Average forward current @ case temperature	$I_{F(AV)}$	A	170
	$T_C$	°C	100
RMS forward current	$I_{F(RMS)}$	A	265
Surge current	$I_{FSM}$	A	$T_j = T_{jmax}$ , $U_R = 0,8U_{RRM}$ , $t_p = 10ms$
$I^2t$ – value	$I^2t$	$kA^2s$	125
Forward voltage drop max.	$U_{FM}$	V	$T_j = 25^\circ C$ , $I_{FM} = 800A$
Threshold voltage	$U_{F(T0)}$	V	0,85
Slope resistance	$r_F$	$m\Omega$	1,60
RMS isolation voltage	$U_{isol}$	V	1 s, circuit to base, all terminals shorted

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# MD\_-170 Dual Diode Power Module

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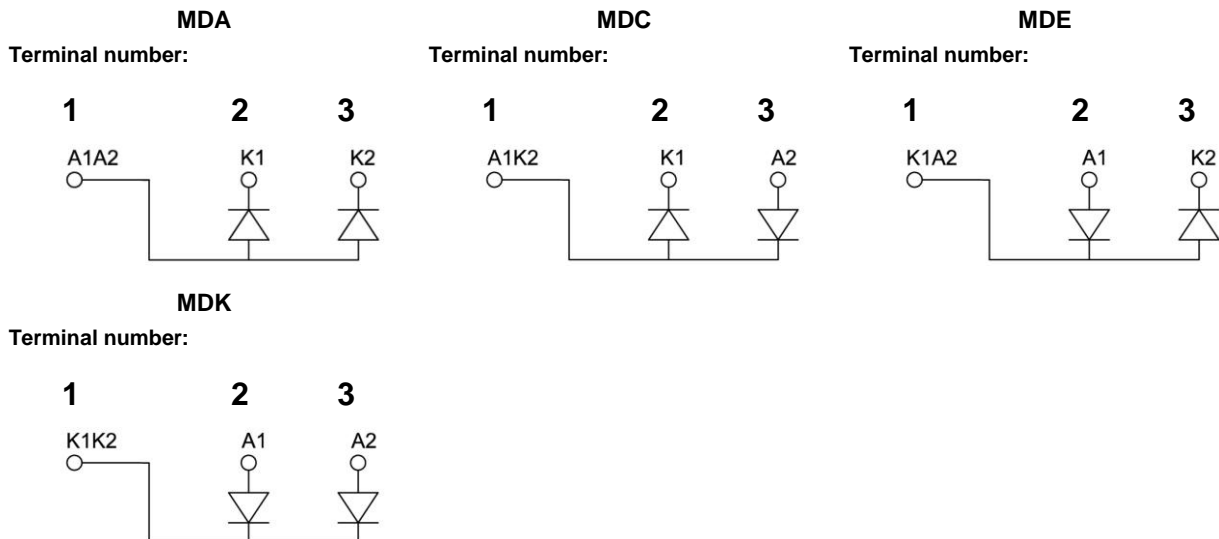
## Thermal properties

Parameter	Unit	Test conditions	Value	
Thermal resistance, junction to case per diode/per module	$R_{thjc}$	°C/W	DC	0,18 / 0,09
Thermal resistance, case to heatsink per diode/per module	$R_{thch}$	°C/W		0,10 / 0,05
Operating junction temperature	$T_{jmin}...T_{jmax}$	°C		-40...+150
Storage temperature	$T_{stg}$	°C		-40...+150

## Mechanical properties

Parameter	Unit	Value	
Mounting torque (M6)	M1	Nm	6,00 ±15%
Terminal connection torque (M6)	M2	Nm	6,00 ±15%
Weight	M	g	360

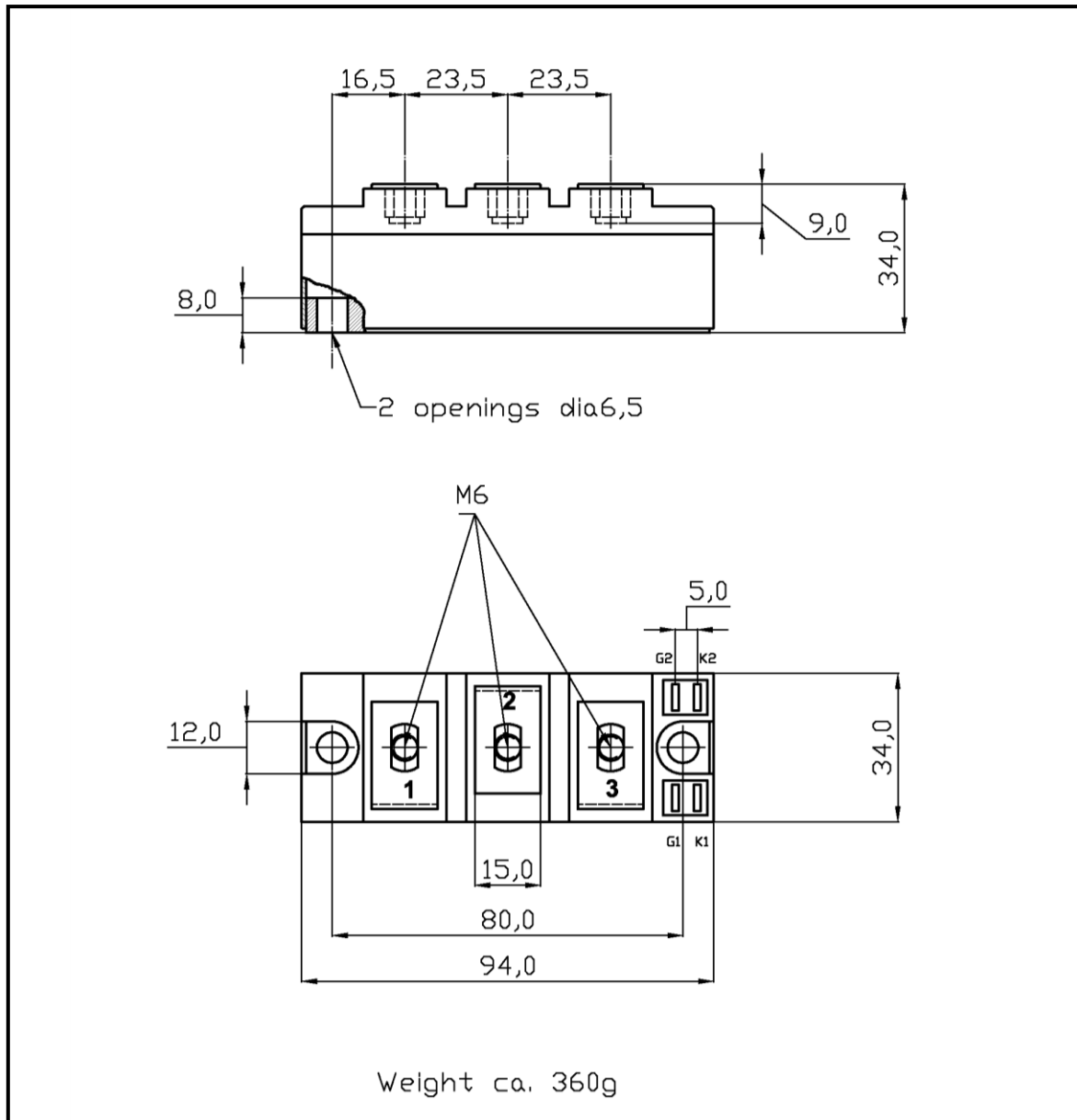
## Configurations



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## Package details



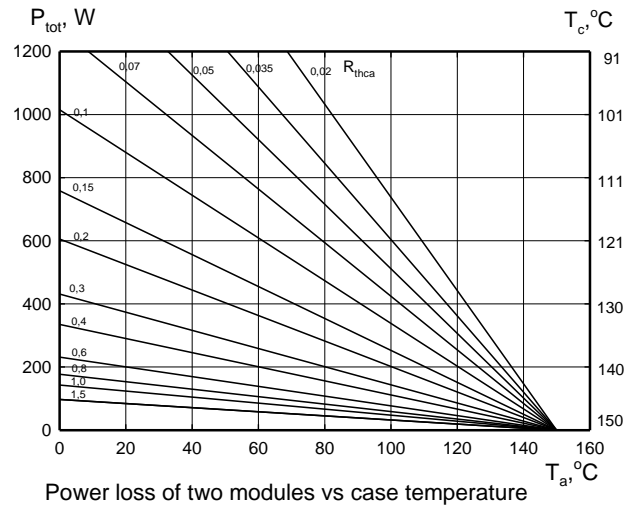
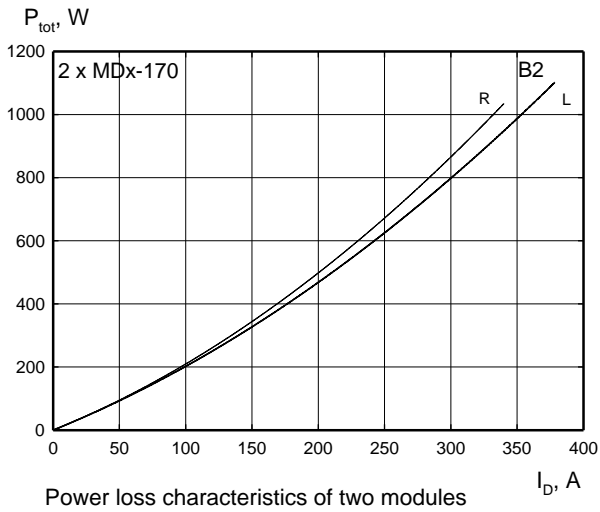
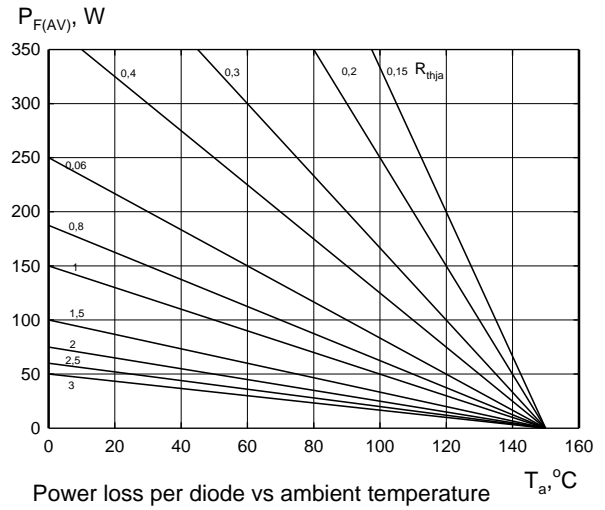
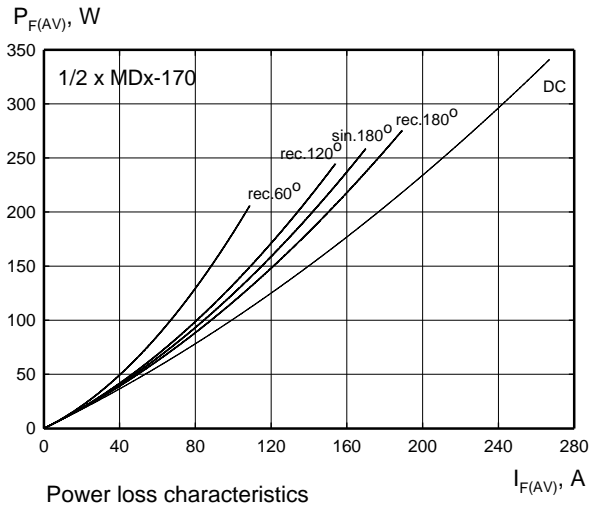
For further package information, please contact Sales & Marketing Department. All dimensions in mm, unless stated otherwise.  
Do not scale.

# MD\_-170 Dual Diode Power Module



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## CHARACTERISTICS

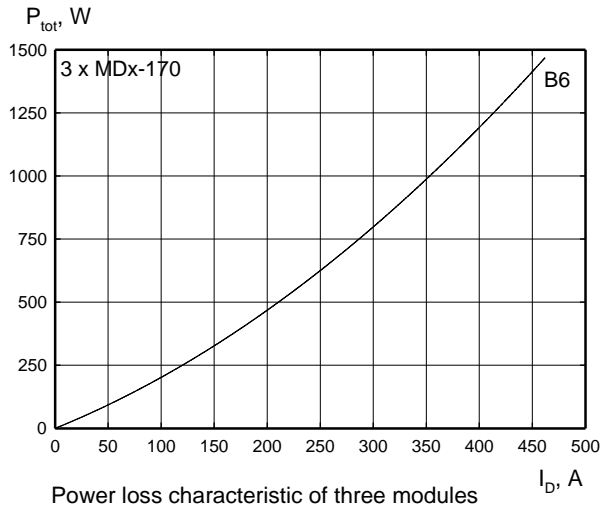


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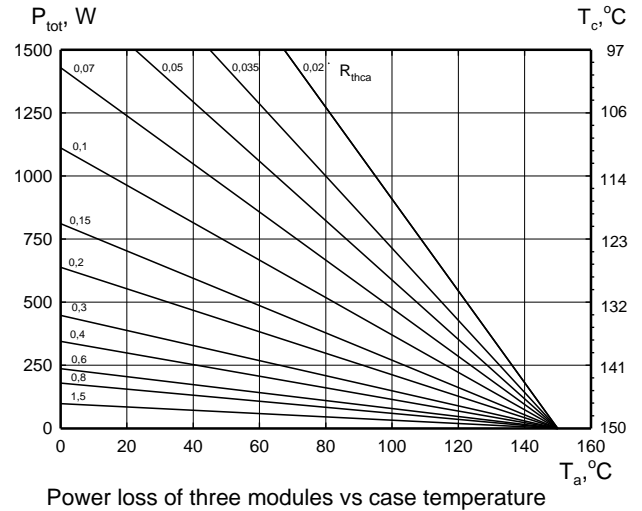
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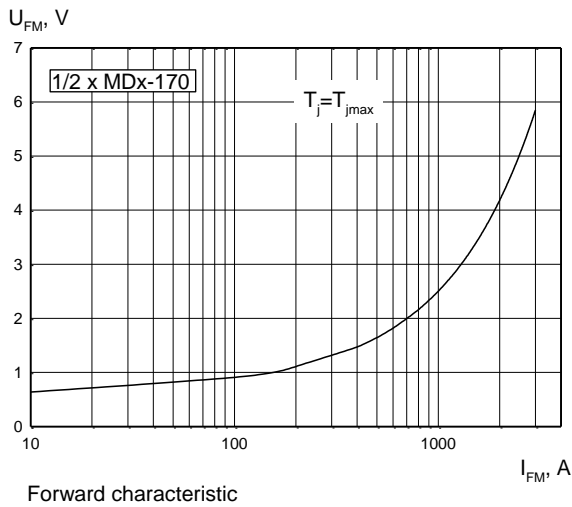
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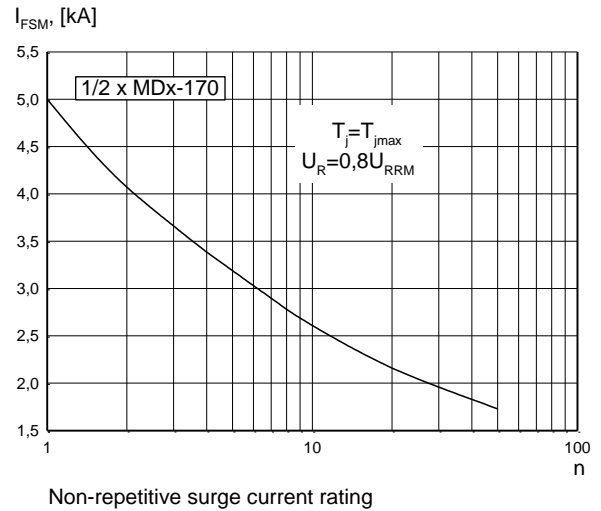
Power loss characteristic of three modules



Power loss of three modules vs case temperature



Forward characteristic

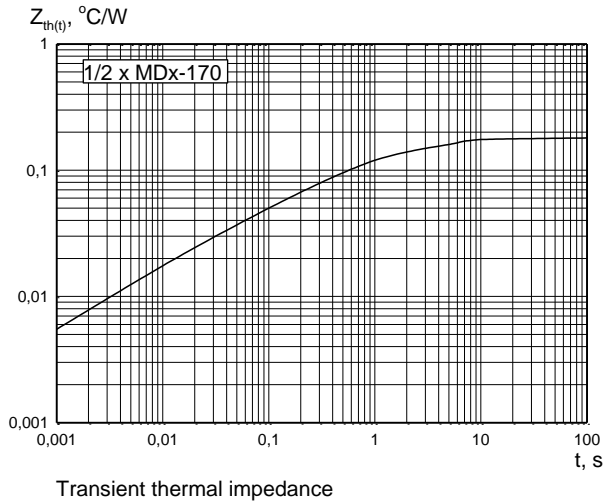


Non-repetitive surge current rating

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## HEATSINKS

ZE LAMINA S.A. has its own proprietary range of extruded aluminium heatsinks designed to optimise the performance of our semiconductors with natural and forced air flow.

## POWER ASSEMBLY CAPABILITY

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