



## PHASE CONTROL DIODE MODULES

### MDD-160

<ul style="list-style-type: none"> <li>◆ <math>V_{RRM} = \underline{400\text{ V-1600 V}}</math></li> <li>◆ <math>I_{F(AV)} = \underline{160\text{ A}}</math> (<math>T_C = 89\text{ °C}</math>)</li> <li>◆ <math>I_{FSM} = \underline{6\text{ kA}}</math> (<math>T_j = 125\text{ °C}</math>)</li> </ul>		
<ul style="list-style-type: none"> <li>◆ Presspack construction</li> <li>◆ Heat transfer through AlN ceramic isolated metal baseplate</li> <li>◆ High reliability at thermal cycles (<math>10^5</math> at <math>\Delta T_C = 70\text{ °C}</math>)</li> <li>◆ Case width 34 mm</li> </ul>		

#### MAXIMUM RATED VALUES

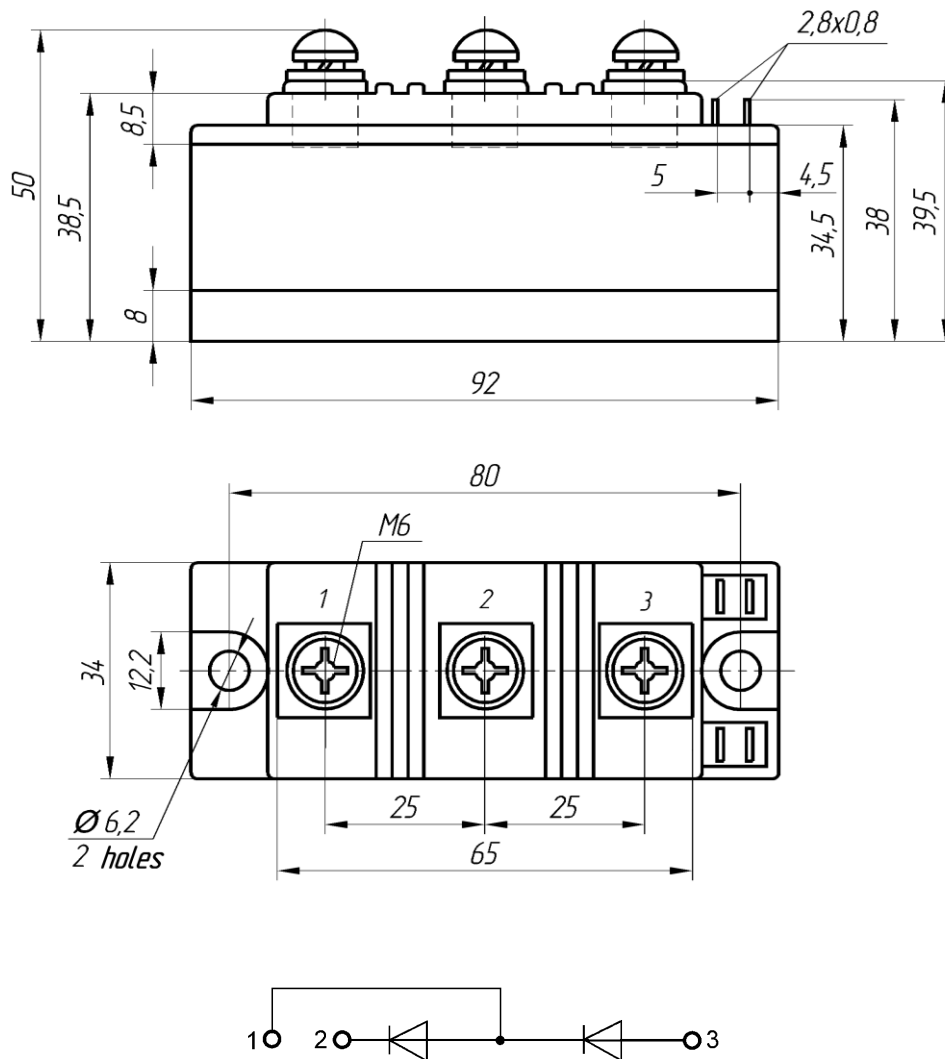
Parameter and conditions	Symbol	Values	Units
Repetitive peak reverse voltage, $T_j = -40 \dots +125\text{ °C}$	$V_{RRM}$	400-1600	V
Non- repetitive peak reverse voltage, $T_j = -40 \dots +125\text{ °C}$	$V_{RSM}$	500-1700	
Repetitive peak reverse current, $T_j = 125\text{ °C}, V_R = V_{RRM}$	$I_{RRM}$	30	mA
Maximum average on-state current, $f = 50\text{ Hz},$ $T_C = 89\text{ °C}$	$I_{F(AV)}$	160	A
RMS on-state current, $T_C = 89\text{ °C}$	$I_{FRMS}$	251	
Surge non-repetitive current, $T_j = 125\text{ °C}, t_p = 10\text{ ms}, V_R = 0$	$I_{FSM}$	6	kA
Safety factor	$I^2t$	$0,180 \cdot 10^6$	$A^2s$
Operation junction temperature range	$T_j$	-40 ... +125	°C
Storage temperature range	$T_{stg}$	-40 ... +50	

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<b>ELECTRICAL CHARACTERISTICS</b>					
Parameter and conditions	Symbol	Values			Units
		min	type	max	
Maximum peak forward voltage, $T_j = 25\text{ °C}$ , $I_F = 500\text{ A}$ ,	$V_{FM}$	-	-	1,25	V
On-state threshold voltage, $T_j = 125\text{ °C}$ , $I_F = 250 - 700\text{ A}$	$V_{F(TO)}$	-	-	0,90	
On-state slope resistance, $T_j = 125\text{ °C}$ , $I_F = 250 - 700\text{ A}$	$r_T$	-	-	0,55	mΩ
Electrical isolated baseplate (RMS), $f = 50\text{ Hz}$ , $t = 1\text{ sec/1min}$	$V_{isol}$	-	-	3000/2500	V
<b>THERMAL PARAMETERS</b>					
Thermal resistance junction to case	$R_{th(j-c)}$	-	-	0,180	°C/W
Thermal resistance case to heatsink	$R_{th(c-h)}$	-	-	0,010	
<b>MECHANICAL PARAMETERS</b>					
Weight	w	-	0,45	-	kg
Heatsink mounting torque	$M_s$	4	-	6	Nm
Terminal connection torque	$M_t$	1,5	-	3,5	Nm
Maximum acceleration (at nominal mounting force)	a	-	-	50	m/s <sup>2</sup>



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1 – Anode /Cathode; 2 – Cathode; 3 – Anode

### Device Outline Drawing

(dimensions in mm)



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