



## FAST RECTIFIER DIODE

### DF173-1600

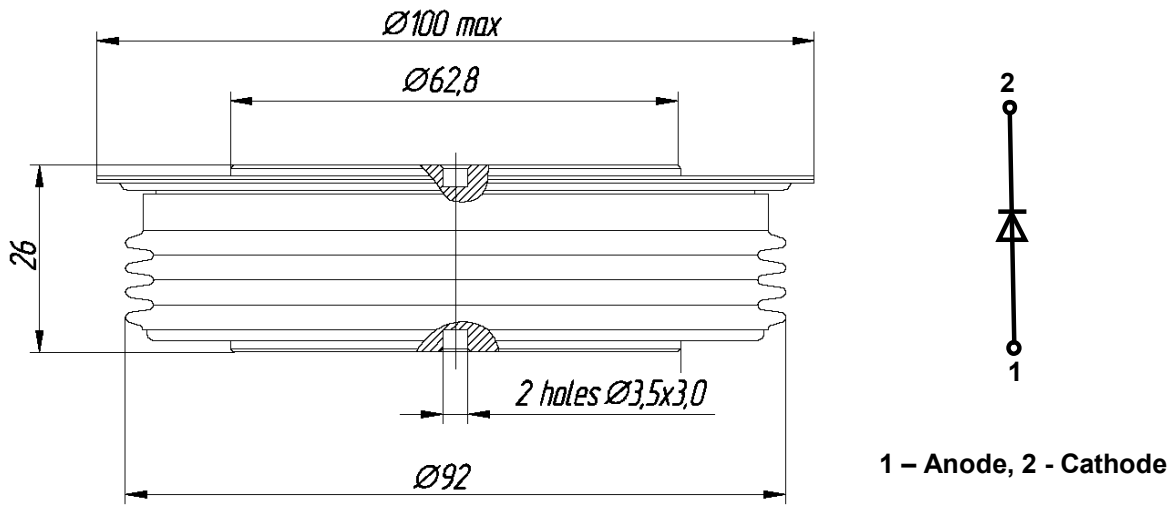
<ul style="list-style-type: none"> <li>◆ <math>V_{RRM} = \underline{3000-45000\text{ B}}</math></li> <li>◆ <math>I_{F(AV)} = \underline{1700\text{ A}}</math> (<math>T_C = 85\text{ °C}</math>)</li> <li>◆ <math>I_{FSM} = \underline{32\text{ kA}}</math> (<math>t_p=10\text{ms}</math>)</li> </ul>			
<ul style="list-style-type: none"> <li>◆ Small recovered time and charge</li> <li>◆ Acceptable for series and parallel connections (low dispersion <math>Q_{rr}</math>, <math>V_{FM}</math>, <math>I_{RRM}</math>)</li> <li>◆ Press-pack design</li> </ul>			
<b>MAXIMUM RATED VALUES</b>			
Parameter and conditions	Symbol	Values	Units
Repetitive peak reverse voltage, $T_j = -60 \dots +140\text{ °C}$	$V_{RRM}$	3000-4500	V
Non- repetitive peak reverse voltage, $T_j = -60 \dots +140\text{ °C}$	$V_{RSM}$	3100-4600	
Repetitive peak reverse current, $T_j = 140\text{ °C}$ , $V_R = V_{RRM}$	$I_{RRM}$	100	mA
Maximum average forward current, $T_C = 85\text{ °C}$ , $f = 50\text{ Hz}$	$I_{F(AV)}$	1700	A
RMS forward current, $T_C = 85\text{ °C}$ , $f = 50\text{ Hz}$	$I_{FRMS}$	2670	
Surge non-repetitive current, $T_j = 140\text{ °C}$ , $V_R = 0$ , $t_p = 10\text{ ms}$	$I_{FSM}$	32	kA
Safety factor	$I^2t$	$5120 \cdot 10^3$	$A^2s$
Operation junction temperature range	$T_j$	-60 ... +140	°C
Storage temperature range	$T_{stg}$	-60 ... +50	

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<b>ELECTRICAL CHARACTERISTICS</b>					
Parameter and conditions	Symbol	Values			Units
		min	typ.	max	
Maximum peak forward voltage, $T_j = 25\text{ °C}$ , $I_F = 5000\text{ A}$	$V_{FM}$	-	-	2,77	V
On-state threshold voltage, $T_j = 140\text{ °C}$ , $I_F = 2000 - 6000\text{ A}$	$V_{TO}$	-	-	1,4	
On-state slope resistance, $T_j = 140\text{ °C}$ , $I_F = 2000 - 6000\text{ A}$	$r_T$	-	-	0,305	mΩ
Reverse recovery time $T_j = 125\text{ °C}$ , $I_F = 1600\text{ A}$ , $di_F/dt = -100\text{ A}/\mu\text{s}$ , $V_R \geq 100\text{ V}$	$t_{rr}$	-	-	8,0	μs
<b>THERMAL PARAMETERS</b>					
Thermal resistance junction to case, DC per diode double side cooled anode side cooled cathode side cooled	$R_{th(j-c)}$	-	-	0,012 0,024 0,024	°C/W
Thermal resistance case to heatsink, double side cooled single side cooled	$R_{th(c-h)}$	-	-	0,003 0,006	
<b>MECHANICAL PARAMETERS</b>					
Weight	w	-	1,1	-	kg
Mounting force	F	40		50	kN m/s <sup>2</sup>
Maximum acceleration (at nominal mounting force)	a	-	-	100	



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**Fig. 1. Device Outline Drawing**  
(dimensions in mm)



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