



## FAST RECTIFIER DIODE

### DF443-250

<ul style="list-style-type: none"> <li>◆ <math>V_{RRM} = \underline{4000-6000\text{ V}}</math></li> <li>◆ <math>I_{F(AV)} = \underline{620\text{ A}}</math> (<math>T_C = 85^\circ\text{C}</math>)</li> <li>◆ <math>I_{FSM} = \underline{4,0\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, $T_j = -60 \dots +140\text{ }^\circ\text{C}$	$V_{RRM}$	4000-6000	V
Non-repetitive peak reverse voltage, $T_j = -60 \dots +140\text{ }^\circ\text{C}$	$V_{RSM}$	4100-6100	
Repetitive peak reverse current, $T_j = 140\text{ }^\circ\text{C}$ , $V_R = V_{RRM}$	$I_{RRM}$	70	mA
Maximum average forward current, $T_C = 85\text{ }^\circ\text{C}$ , $f = 50\text{ Hz}$	$I_{F(AV)}$	620	A
RMS forward current, $T_C = 85\text{ }^\circ\text{C}$ , $f = 50\text{ Hz}$	$I_{FRMS}$	973	
Surge non-repetitive current, $T_j = 140\text{ }^\circ\text{C}$ , $V_R = 0$ , $t_p = 10\text{ ms}$	$I_{FSM}$	4,0	kA
Safety factor	$I^2t$	$80 \cdot 10^3$	$\text{A}^2\text{s}$
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, $T_j = 25\text{ °C}$ , $I_F = 780\text{ A}$	$V_{FM}$	-	-	3,5	V
On-state threshold voltage, $T_j = 140\text{ °C}$ , $I_F = 390 - 1180\text{ A}$	$V_{TO}$	-	-	1,60	
On-state slope resistance, $T_j = 140\text{ °C}$ , $I_F = 390 - 1180\text{ A}$	$r_T$	-	-	0,60	mΩ
Reverse recovery time $T_j = 140\text{ °C}$ , $I_F = 250\text{ A}$ , $di_F/dt = -100\text{ A}/\mu\text{s}$ , $V_R \geq 100\text{ V}$	$t_{rr}$	-	-	8,0	μs
<b>THERMAL PARAMETERS</b>					
Thermal resistance junction to case, DC per diode double side cooled anode side cooled cathode side cooled	$R_{th(j-c)}$	-	-	0,035 0,070 0,070	°C/W
Thermal resistance case to heatsink, double side cooled single side cooled	$R_{th(c-h)}$	-	-	0,010 0,020	
<b>MECHANICAL PARAMETERS</b>					
Weight	w	-	0,24	-	kg
Mounting force	F	13,5		16,5	kN
Maximum acceleration (at nominal mounting force)	a	-	-	100	m/s <sup>2</sup>



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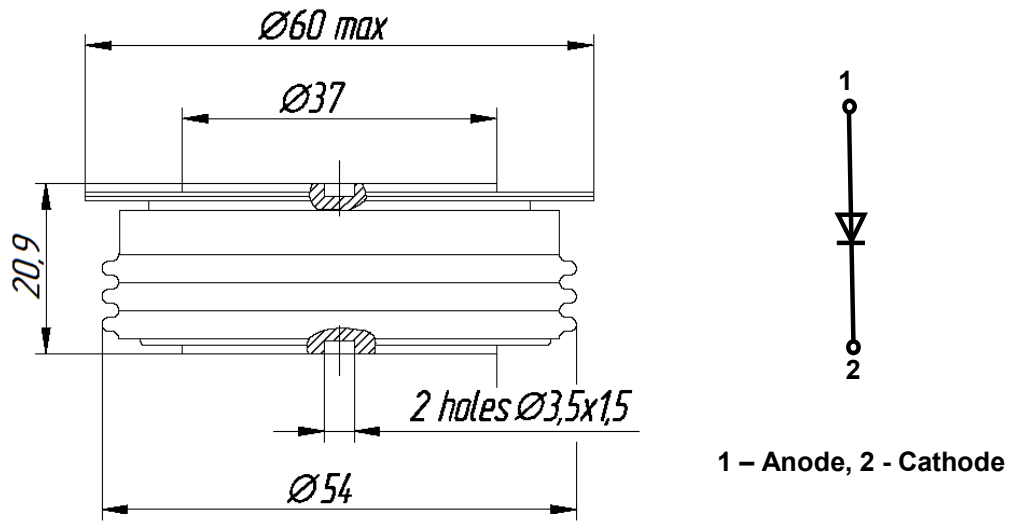


Fig. 1. Device Outline Drawing  
(dimensions in mm)



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