Low switching losses
Low reverse recovery charge
High power cycling capability

Fast Recovery Diode
Type DF253-1000-24

Average forward current		I_{FAV}	1000 A
Repetitive peak reverse voltage		V_{RRM}	2000 ÷ 2400 V
Reverse recovery time		t_{rr}	4.0 μs
V_{RRM}, V	2000	2200	2400
Voltage code	20	22	24
T_j, °C	– 60 ÷ 125		

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	1000 1645	T_c=89 °C; Double side cooled; T_c=55 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	1570	T_c=89 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	22.0 25.0	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; 50 Hz (t_p=10 ms); single pulse; V_R=0 V;
			24.0 28.0	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; 60 Hz (t_p=8.3 ms); single pulse; V_R=0 V;
I^2t	Safety factor	$A^2s\cdot10^3$	2420 3125	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; 50 Hz (t_p=10 ms); single pulse; V_R=0 V;
			2390 3250	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; 60 Hz (t_p=8.3 ms); single pulse; V_R=0 V;
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	2000÷2400	$T_{j\,min}$< T_j <$T_{j\,max}$; 180° half-sine wave; 50 Hz;	
V_{RSM}	Non-repetitive peak reverse voltages	V	2100÷2500	$T_{j\,min}$< T_j <$T_{j\,max}$; 180° half-sine wave; 50 Hz;single pulse;	
V_R	Reverse continuous voltages	V	0.75·V_{RRM}	T_j=$T_{j\,max}$;	
THERMAL					
T_{stg}	Storage temperature	°C	– 60 ÷ 125		
T_j	Operating junction temperature	°C	– 60 ÷ 125		
MECHANICAL					
F	Mounting force	kN	24.0 ÷ 28.0		
a	Acceleration	m/s^2	50 100	Device unclamped Device clamped	

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E-mail: eletex@eletex.ru / eltex@orel.ru; I-net: www.eletex.ru

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	2.20	T_j=25 °C; I_{FM}=3140 A	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.35	$T_j=T_{j\ max}$; 0.5 π I_{FAV} < I_T < 1.5 π I_{FAV}	
r_T	Forward slope resistance, max	mΩ	0.250		
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	150	$T_j=T_{j\ max}$; $V_R=V_{RRM}$	
SWITCHING					
Q_{rr}	Total recovered charge, max	μC	440	$T_j=T_{j\ max}$; I_{FM}= I_{FAV}; di_R/dt=-100 A/μs; V_R=100 V;	
t_{rr}	Reverse recovery time, max	μs	4.0		
I_{rrM}	Peak reverse recovery current, max	A	220		
THERMAL					
R_{thjc}	Thermal resistance, junction to case, max	°C/W	0.0180	Direct current	Double side cooled
R_{thjc-A}			0.0396		Anode side cooled
R_{thjc-K}			0.0324		Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	°C/W	0.0040	Direct current	
MECHANICAL					
w	Weight, typ	g	510		
D_s	Surface creepage distance	mm (inch)	38.84 (1.529)		
D_a	Air strike distance	mm (inch)	22.50 (0.886)		

PART NUMBERING GUIDE

DF	253	1000	24	H4	N
1	2	3	4	5	6

1. Fast recovery diode
2. Design version
3. Average forward current, A
4. Voltage code
5. Group of reverse recovery time
6. Ambient conditions: N – normal; T – tropical

GROUP OF RECOVERY TIME

Group Symbol	H4
t_{rr}, μs	4.0

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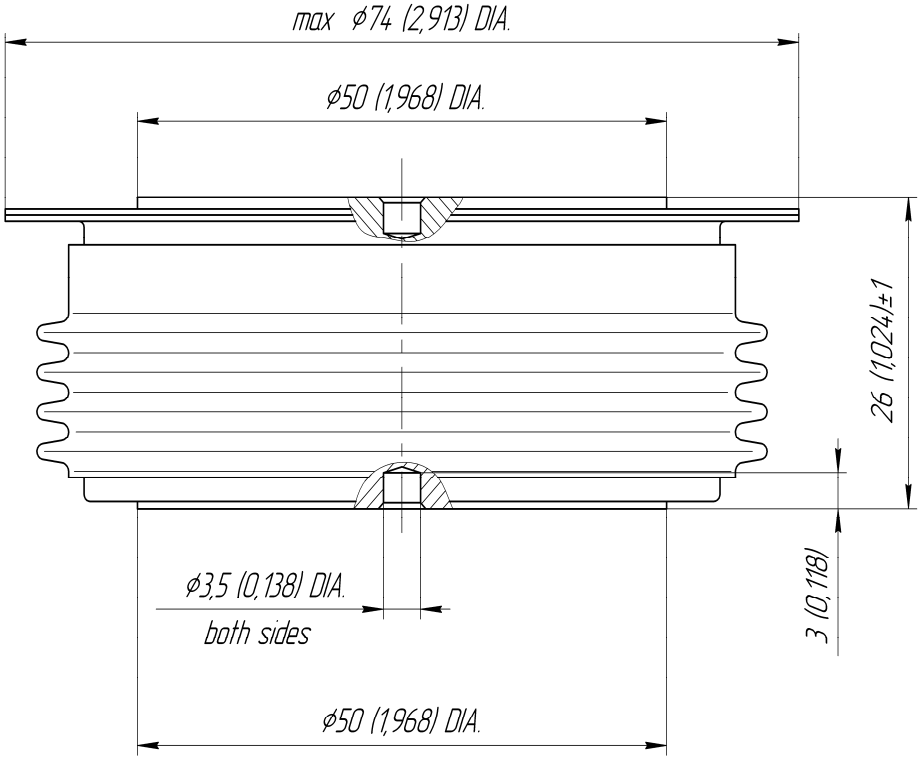
OVERALL DIMENSIONS

Package type: D.D3



All dimensions in millimeters (inches)

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