



TET ESTEL AS
ESTONIA

July
2013

Series
DF453-630

Fast Recovery Press-Pack
Diode
Type DF453-630

For use as high-power inverters,
fly-wheel diodes in DC choppers,
power supplies as high frequency rectifier

Maximum mean forward current	I_{FAV}						630 A	
Maximum repetitive peak reverse voltage	U_{RRM}						3200 ÷ 4400 V	
Reverse recovery time	t_{rr}						5,0; 6,3; 8,0 μs	
U_{RRM}, V	3200	3400	3600	3800	4000	4200	4400	
Voltage code	32	34	36	38	40	42	44	
$T_{vj}, °C$	- 60 ÷ 125							

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	DF453-630	Conditions
I_{FAV}	Mean forward current	A	630 1020	$T_c=90 °C$, $T_c=55 °C$, 180° half-sine wave, 50 Hz
I_{FRMS}	RMS forward current	A	989	$T_c=90 °C$
I_{FSM}	Surge forward current	kA	14 16	$T_{vj}=125 °C$ $T_{vj}= 25 °C$ tp=10 ms
I^2t	Limiting load integral	kA ² s	980 1280	$T_{vj}=125 °C$ $T_{vj}= 25 °C$ UR=0
U_{RRM}	Repetitive peak reverse voltage	V	3200÷4400	$T_j \min \leq T_{vj} \leq T_{jM}$ 180° half-sine wave, 50 Hz
U_{RSM}	Non-repetitive peak reverse voltage	V	3300÷4500	$T_j \min \leq T_{vj} \leq T_{jM}$ 180° half-sine wave tp=10 ms, Single pulse
T_{stg}	Storage temperature	°C	-60÷80	
T_{vj}	Junction temperature	°C	-60÷125	

CHARACTERISTICS

U_{FM}	Peak forward voltage	V	3,0	$T_{vj}=25 °C$, $I_{FM}=3,14 I_{FAV}$
$U_{F(TO)}$	Threshold voltage	V	1,4	$T_{vj}=125 °C$ 1,57 $I_{FAV} < I_F < 4,71 I_{FAV}$
R_T	Forward slope resistance	mΩ	0,8	
I_{RRM}	Repetitive peak reverse current	mA	100	$T_{vj}=125 °C$, $U_R = U_{RRM}$

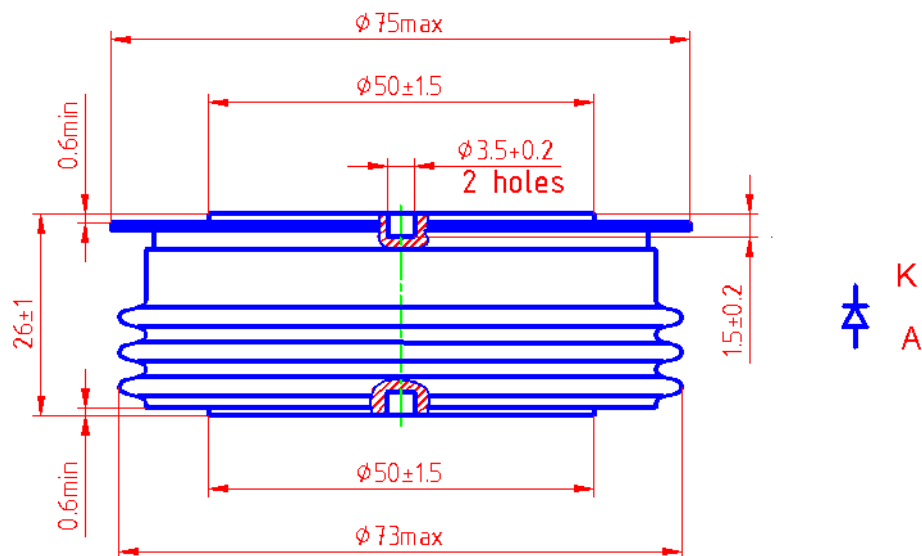
CHARACTERISTICS

Symbols and parameters		Units	DF453-630	Conditions
trr	Reverse recovery time	μs	5,0 ÷ 8,0 4,0 ÷ 6,3 3,2 ÷ 5,0	$T_{vj}=125^{\circ}\text{C}$, $I_F=630\text{A}$, $U_R=100\text{V}$ $dI_R/dt = 50\text{A}/\mu\text{s}$ $dI_R/dt = 100\text{A}/\mu\text{s}$ $dI_R/dt = 200\text{A}/\mu\text{s}$
Qrr	Recovered charge	μC	450 ÷ 720 600 ÷ 950 800 ÷ 1250	$T_{vj}=125^{\circ}\text{C}$, $I_F=630\text{A}$, $U_R=100\text{V}$ $dI_R/dt = 50\text{A}/\mu\text{s}$ $dI_R/dt = 100\text{A}/\mu\text{s}$ $dI_R/dt = 200\text{A}/\mu\text{s}$
Rthjc	Thermal resistance junction to case	$^{\circ}\text{C}/\text{W}$	0,02	Direct current, double side cooled

ORDERING

	DF	453	630	40	C4	
	1	2	3	4	5	

1. Fast recovery diode
2. Design version
3. Mean forward current, A
4. Voltage code (40 = 4000 V)
5. Group of reverse recovery time (B4 \leq 8,0 μs ; C4 \leq 6,3 μs ; 1 \leq 5,0 μs)



Mounting force : 19 ÷ 28 kN

Weight : 580 grams