



TET ESTEL AS
ESTONIA

September
2015

Series
DF053-1600

Fast Recovery Press-Pack
Diode
Type DF053-1600

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

Maximum mean forward current	I_{FAV}					1600 A	
Maximum repetitive peak reverse voltage	U_{RRM}					200 ÷ 800 V	
Reverse recovery time	trr					2,5; 3,2; 4,0 μs	
U_{RRM}, V	200	300	400	500	600	700	800
Voltage code	2	3	4	5	6	7	8
$T_{vj}, °C$	- 60 ÷ 125						

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	DF053-1600	Conditions	
I_{FAV}	Mean forward current	A	1600 2520	$T_c=85°C$, $T_c=55°C$, 180° half-sine wave, 50 Hz	
I_{FRMS}	RMS forward current	A	2512	$T_c=85°C$	
I_{FSM}	Surge forward current	kA	30 33	$T_{vj}=125°C$ $T_{vj}= 25°C$	tp=10 ms $U_R=0$
I^2t	Limiting load integral	kA^2s	4500 5445	$T_{vj}=125°C$ $T_{vj}= 25°C$	
U_{RRM}	Repetitive peak reverse voltage	V	200÷800	$T_j \min \leq T_{vj} \leq T_{jM}$ 180° half-sine wave, 50 Hz	
U_{RSM}	Non-repetitive peak reverse voltage	V	300÷900	$T_j \min \leq T_{vj} \leq T_{jM}$ 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	1,5	$T_{vj}=25°C$, $I_{FM}=3,14 I_{FAV}$
$U_{F(TO)}$	Threshold voltage	V	0,93	$T_{vj}=125°C$ $1,57 I_{FAV} < I_F < 4,71 I_{FAV}$
R_T	Forward slope resistance	mΩ	0,07	
I_{RRM}	Repetitive peak reverse current	mA	50	$T_{vj}=125°C$, $U_R = U_{RRM}$

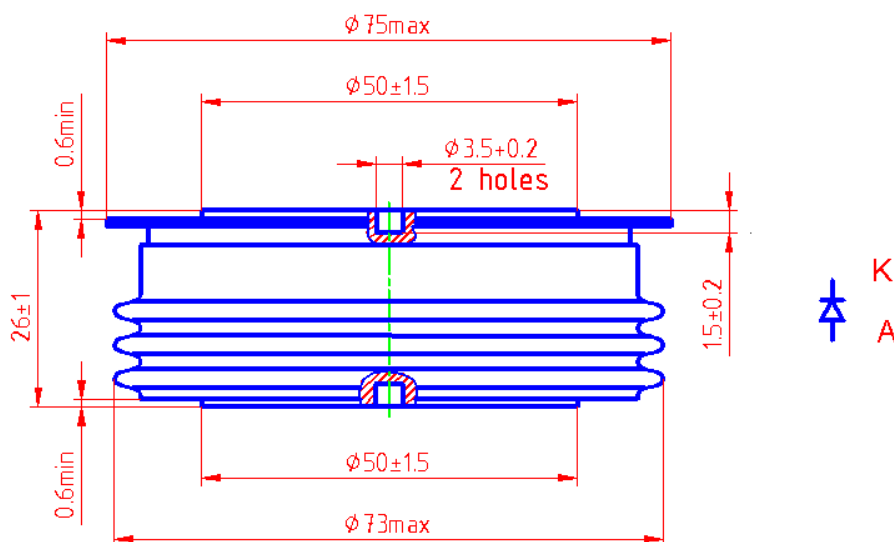
CHARACTERISTICS

Symbols and parameters		Units	DF053-1600	Conditions
trr	Reverse recovery time	μs	2,5 ÷ 4,0 2,0 ÷ 3,2 1,6 ÷ 2,5	$T_{vj}=125^{\circ}\text{C}$, $I_F=1600\text{A}$, $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$ $di_R / dt = 200\text{A}/\mu\text{s}$
Qrr	Recovered charge	μC	120 ÷ 200 170 ÷ 270 240 ÷ 380	$T_{vj}=125^{\circ}\text{C}$, $I_F=1600\text{A}$, $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$ $di_R / dt = 200\text{A}/\mu\text{s}$
Rthjc	Thermal resistance junction to case	$^{\circ}\text{C}/\text{W}$	0,02	Direct current, double side cooled

ORDERING

	DF	053	1600	5	4	
	1	2	3	4	5	

1. Fast recovery diode.
2. Design version.
3. Mean forward current, A.
4. Voltage code (5 = 500 V).
5. Group of reverse recovery time ($2 \leq 4,0 \mu\text{s}$ $3 \leq 3,2 \mu\text{s}$; $4 \leq 2,5 \mu\text{s}$).



Mounting force : 19 ÷ 28 kN
Weight : 580 grams