



**TET ESTEL AS**  
ESTONIA

**September**  
**2015**

**Series**  
**DF133-500**

**Fast Recovery Press-Pack**  
**Diode**  
**Type DF133-500**

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

Maximum mean forward current	$I_{FAV}$		<b>500 A</b>						
Maximum repetitive peak reverse voltage	$U_{RRM}$		<b>800 ÷ 1600 V</b>						
Reverse recovery time	$t_{rr}$		<b>2,0; 2,5; 3,2 μs</b>						
$U_{RRM}, V$	800	900	1000	1100	1200	1300	1400	1500	1600
Voltage code	8	9	10	11	12	13	14	15	16
$T_{vj}, °C$	- 60 ÷ 125								

**MAXIMUM ALLOWABLE RATINGS**

Symbols and parameters		Units	DF133-500	Conditions
$I_{FAV}$	Mean forward current	A	500 750	$T_c=90°C$ , $T_c=55°C$ , 180° half-sine wave, 50 Hz
$I_{FRMS}$	RMS forward current	A	785	$T_c=90°C$
$I_{FSM}$	Surge forward current	kA	12,0 13,0	$T_{vj}=125°C$ $T_{vj}= 25°C$ tp=10 ms
$I^2t$	Limiting load integral	kA <sup>2</sup> s	720 845	$T_{vj}=125°C$ $T_{vj}= 25°C$ UR=0
$U_{RRM}$	Repetitive peak reverse voltage	V	800÷1600	$T_j \min \leq T_{vj} \leq T_{jM}$ 180° half-sine wave, 50 Hz
$U_{RSM}$	Non-repetitive peak reverse voltage	V	900÷1700	$T_j \min \leq T_{vj} \leq T_{jM}$ 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	1,9	$T_{vj}=25°C$ , $I_{FM}=3,14 I_{FAV}$
$U_{F(TO)}$	Threshold voltage	V	1,15	$T_{vj}=125°C$ $1,57 I_{FAV} < I_F < 4,71 I_{FAV}$
$R_T$	Forward slope resistance	mΩ	0,4	
$I_{RRM}$	Repetitive peak reverse current	mA	40	$T_{vj}=125°C$ , $U_R = U_{RRM}$

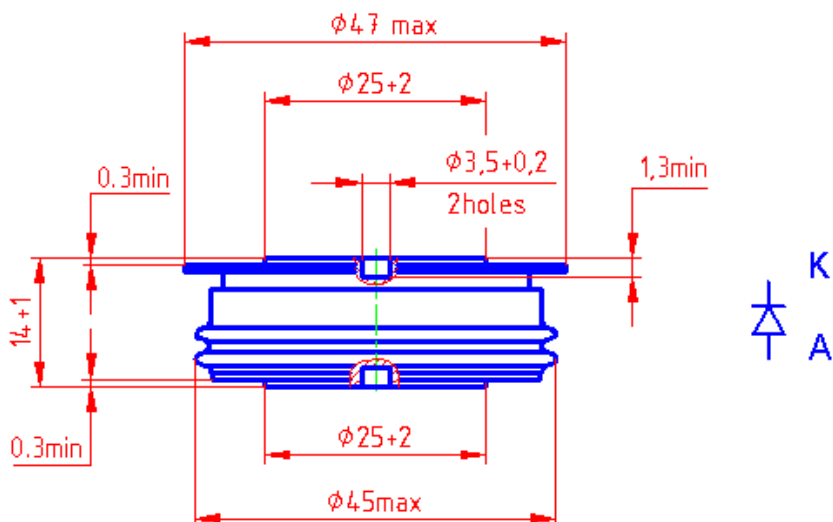
## CHARACTERISTICS

Symbols and parameters		Units	DF133-500	Conditions
trr	Reverse recovery time	$\mu\text{s}$	2,0 ÷ 3,2 2,0 ÷ 2,5 1,6 ÷ 2,0	$T_{vj}=125^{\circ}\text{C}$ , $I_F=500\text{A}$ , $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$ $di_R / dt = 200\text{A}/\mu\text{s}$
Qrr	Recovered charge	$\mu\text{C}$	70 ÷ 100 100 ÷ 130 130 ÷ 190	$T_{vj}=125^{\circ}\text{C}$ , $I_F=500\text{A}$ , $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$ $di_R / dt = 200\text{A}/\mu\text{s}$
Rthjc	Thermal resistance junction to case	$^{\circ}\text{C}/\text{W}$	0,04	Direct current, double side cooled

## ORDERING

	DF	133	500	14	4	
	1	2	3	4	5	

1. Fast recovery diode
2. Design version
3. Mean forward current, A
4. Voltage code (14 = 1400 V)
5. Group of reverse recovery time (3  $\leq$  3,2  $\mu\text{s}$ ; 4  $\leq$  2,5  $\mu\text{s}$ ; 5  $\leq$  2,0  $\mu\text{s}$ )



Mounting force : 8 ÷ 12 kN  
Weight : 120 grams