

Fast Recovery Stud-Mounted Diodes Type DF251-160, DF251-160X

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

Maximum mean forward current		I_{FAV}		160 A					
Maximum repetitive peak reverse voltage		U_{RRM}		600 ÷ 1400V					
Reverse recovery time		trr		2,5; 3,2; 4,0 μs					
U_{RRM} , V	600	700	800	900	1000	1100	1200	1300	1400
Voltage code	6	7	8	9	10	11	12	13	14
T_{vj} , °C	- 60 ÷ 170								

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	DF251-160 DF251-160X	Conditions
I_{FAV}	Mean forward current	A	160 235	$T_c=103^\circ\text{C}$, $T_c=55^\circ\text{C}$, 180° half-sine wave, 50 Hz
I_{FRMS}	RMS forward current	A	250	$T_c=103^\circ\text{C}$
I_{FSM}	Surge forward current	kA	3,5 3,8	$T_{vj}=170^\circ\text{C}$ $T_{vj}=25^\circ\text{C}$ tp=10 ms $U_R=0$
I^2t	Limiting load integral	kA^2s	61 72	$T_{vj}=170^\circ\text{C}$ $T_{vj}=25^\circ\text{C}$
U_{RRM}	Repetitive peak reverse voltage	V	600÷1400	$T_{j \min} \leq T_{vj} \leq T_{jM}$ 180° half-sine wave, 50 Hz
U_{RSM}	Non-repetitive peak reverse voltage	V	660÷1540	$T_{j \min} \leq T_{vj} \leq T_{jM}$ 180° half-sine wave tp=10 ms, Single pulse
T_{stg}	Storage temperature	°C	-60÷80	
T_{vj}	Junction temperature	°C	-60÷170	

CHARACTERISTICS

U_{FM}	Peak forward voltage	V	2,4	$T_{vj}=25^\circ\text{C}$, $I_{FM}=3,14 I_{FAV}$
$U_{F(TO)}$	Threshold voltage	V	1,4	$T_{vj}=170^\circ\text{C}$
R_T	Forward slope resistance	m Ω	1,56	1,57 $I_{FAV} < I_F < 4,71 I_{FAV}$
I_{RRM}	Repetitive peak reverse current	mA	20	$T_{vj}=170^\circ\text{C}$, $U_R = U_{RRM}$

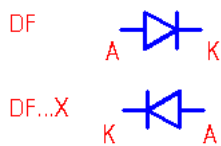
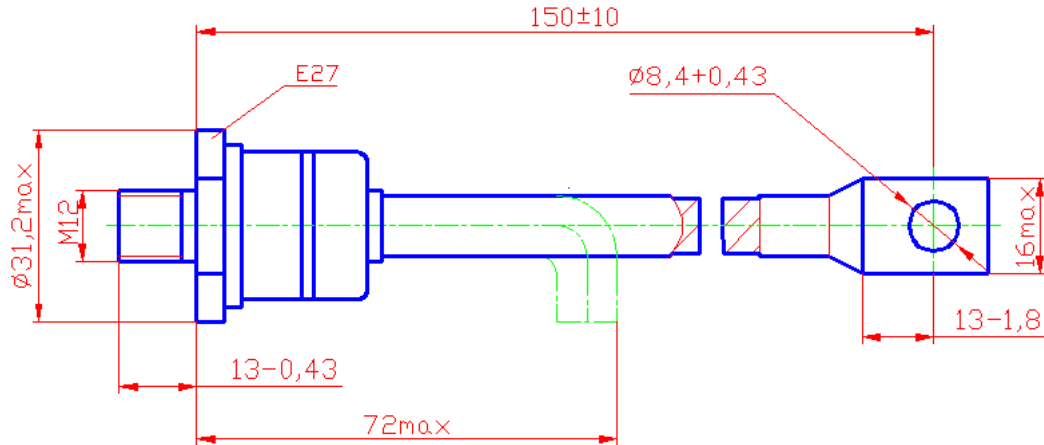
CHARACTERISTICS

Symbols and parameters		Units	DF251-160 DF251-160X	Conditions
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trr	Reverse recovery time	μs	2,5 ÷ 4,0 2,0 ÷ 3,2	$T_{vj}=170^{\circ}\text{C}$, $I_F=160\text{A}$, $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$
Qrr	Recovered charge	μC	150 ÷ 250 220 ÷ 350	$T_{vj}=170^{\circ}\text{C}$, $I_F=160\text{A}$, $U_R=100\text{V}$ $di_R / dt = 50\text{A}/\mu\text{s}$ $di_R / dt = 100\text{A}/\mu\text{s}$
Rthjc	Thermal resistance junction to case	$^{\circ}\text{C}/\text{W}$	0,21	Direct current

ORDERING						
	DF	251	160	X	14	3
	1	2	3	4	5	6

1. Fast recoveri diode.
2. Design version.
3. Mean forward current, A.
4. Reverse polarity (cathode stud mounted), withoud X-normal polarity.
5. Voltage code (14 = 1400V).
6. Group of reverse recovery time ($2 \leq 4,0 \mu\text{s}$; $3 \leq 3,2 \mu\text{s}$; $4 \leq 2,5 \mu\text{s}$).



Tightening torque: 12 ÷ 18 Nm
Weight : 150 grams