



PROTON-ELECTROTEX RUSSIA

High power cycling capability
Low on-state and switching losses
Optimized for line frequency rectifiers
Designed for traction and industrial applications

Rectifier Diode Chip Type DR24-500-18

Maximum allowable average forward current ¹⁾				I_{FAV}		500 A		
Repetitive peak reverse voltage				V_{RRM}		1000...1800 V		
V_{RRM} , V	1000	1100	1200	1300	1400	1500	1600	1800
Voltage code	10	11	12	13	14	15	16	18
T_j , °C	-60...+190							

MAXIMUM ALLOWABLE RATINGS

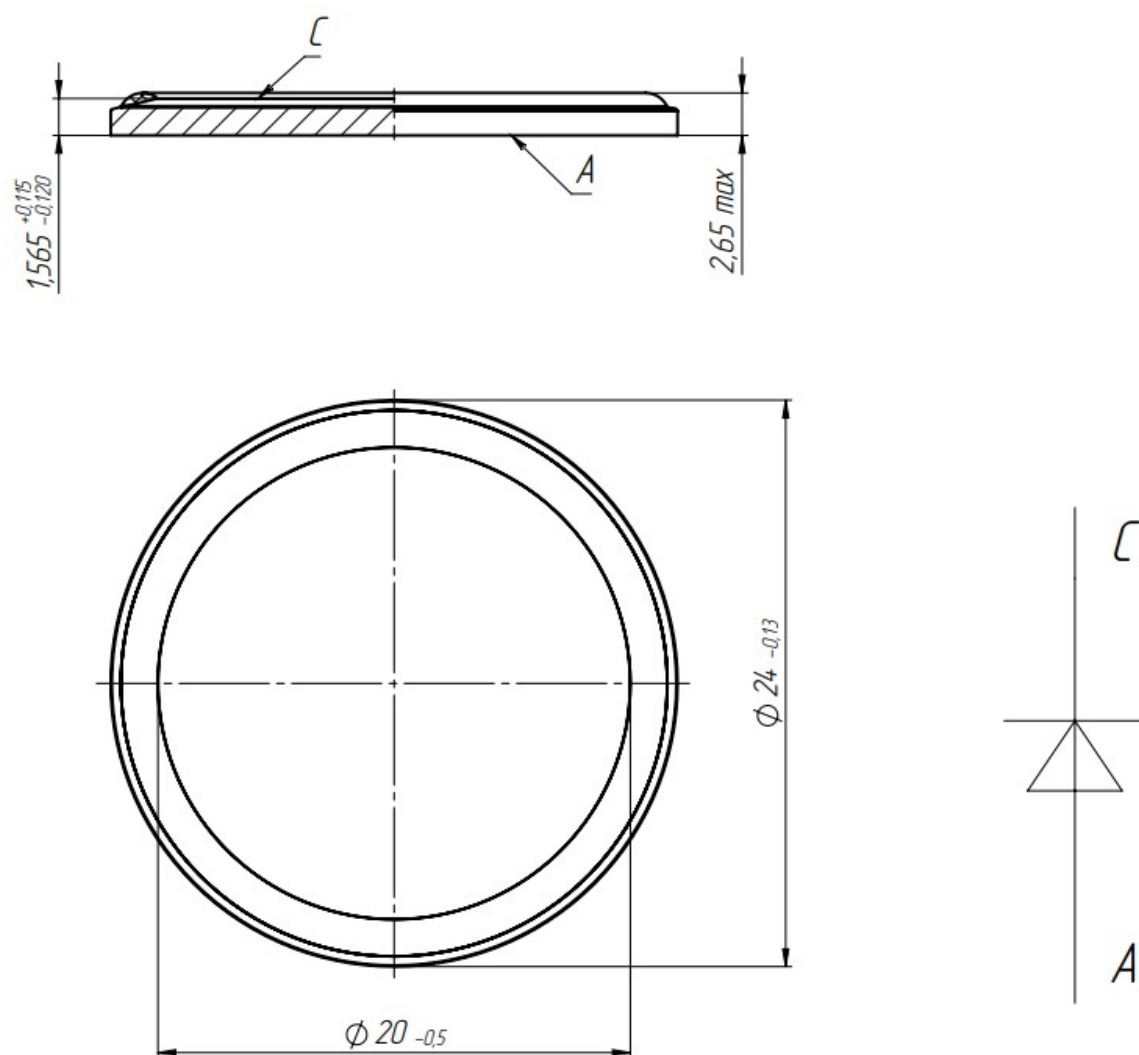
Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I _{FAV}	Maximum allowable average forward current ¹⁾	A	500 744	T _c =139 °C; Double side cooled; T _c =100 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I _{FRMS}	RMS forward current ¹⁾	A	785	T _c =139 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I _{FSM}	Surge forward current ¹⁾	kA	7.5 8.6	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =10 ms; single pulse; V _R =0 V
			8.0 9.5	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =8.3 ms; single pulse; V _R =0 V
I ² t	Safety factor ¹⁾	A ² s·10 ³	280 360	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =10 ms; single pulse; V _R =0 V
			260 370	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =8.3 ms; single pulse; V _R =0 V
BLOCKING					
V _{RRM}	Repetitive peak reverse voltages	V	1000...1800	T _{j min} < T _j < T _{j max} ; 180° half-sine wave; 50 Hz	
V _{RSM}	Non-repetitive peak reverse voltages	V	1100...1900	T _{j min} < T _j < T _{j max} ; 180° half-sine wave; single pulse	
V _R	Reverse continuous voltages	V	0.6·V _{RRM}	T _j =T _{j max}	
THERMAL					
T _{stg}	Storage temperature	°C	−60...+50		
T _j	Operating junction temperature	°C	−60...+190		
MECHANICAL					
F	Mounting force ¹⁾	kN	5.0...7.0		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V _{FM}	Peak forward voltage ¹⁾ , max	V	1.55	T _j =25 °C; I _{FM} =1570 A	
V _{F(TO)}	Forward threshold voltage, max	V	0.874	T _j =T _{j max} ;	
r _T	Forward slope resistance ¹⁾ , max	mΩ	0.467	0.5 π I _{FAV} < I _T < 1.5 π I _{FAV}	
BLOCKING					
I _{RRM}	Repetitive peak reverse current, max	mA	35	T _j =T _{j max} ; V _R =V _{RRM}	
THERMAL					
R _{thjc}	Thermal resistance, junction to case ¹⁾ , max	°C/W	0.070	Direct current	Double side cooled
R _{thjc-A}			0.154		Anode side cooled
R _{thjc-K}			0.126		Cathode side cooled
MECHANICAL					
m	Weight, max	g	6.20		

PART NUMBERING GUIDE				NOTES
DR	24	500	18	1) Depending on the specifications of the housing used. The specified values are relevant when using the Proton-Electrotex D.A1 housing.
1	2	3	4	
1. Rectifier Diode Chip				
2. Maximum diameter, mm				
3. Average forward current, A				
4. Voltage code				

OVERALL DIMENSIONS



All dimensions in millimeters

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