



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 DR56-1600-36

Maximum allowable average forward current ¹⁾		I_{FAV}	1600 A
Repetitive peak reverse voltage		V_{RRM}	3000...3600 V
V_{RRM} , V	3000	3200	3400
Voltage code	30	32	34
T_j , °C	-60...+175		

MAXIMUM ALLOWABLE RATINGS

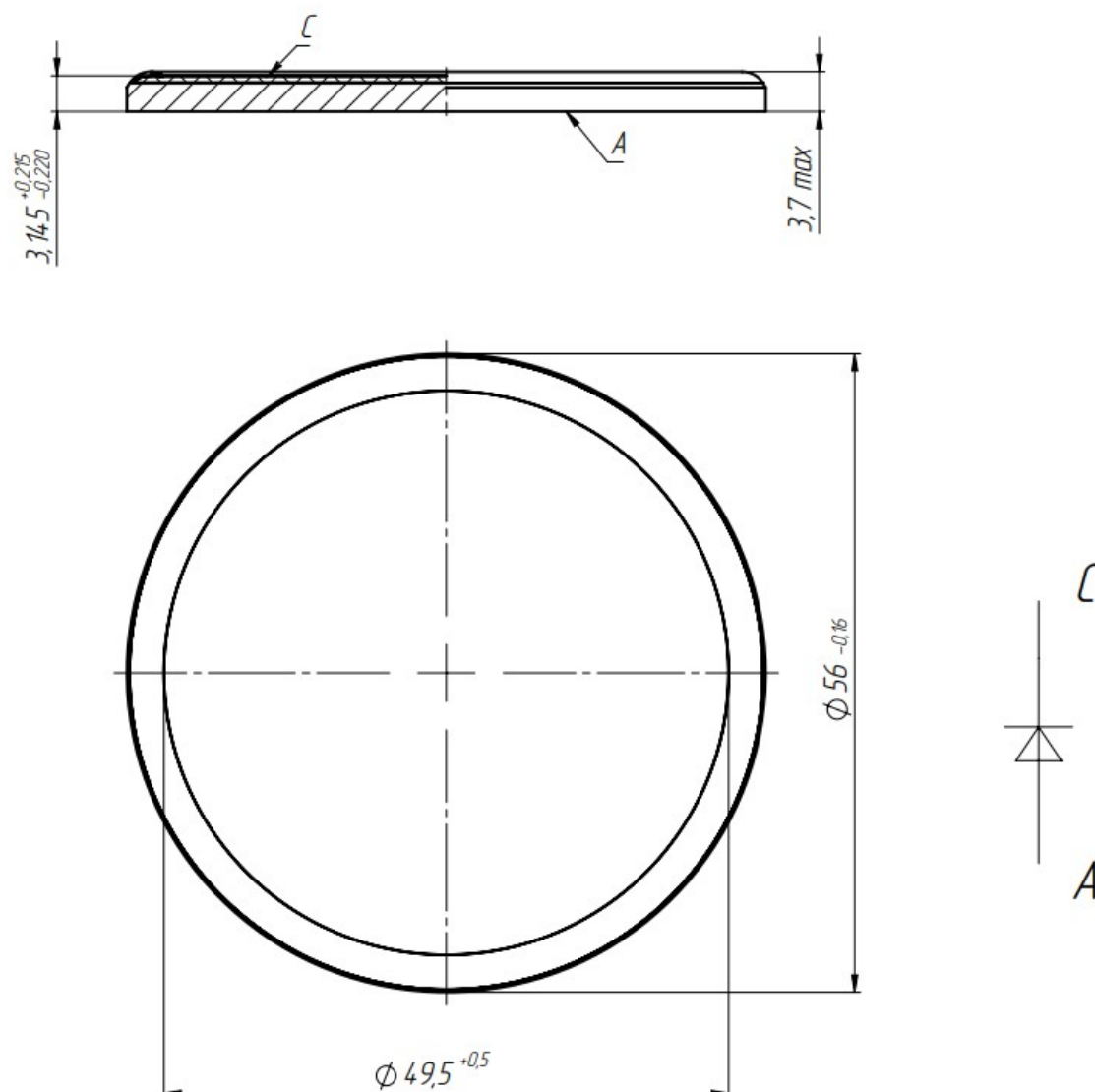
Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I _{FAV}	Maximum allowable average forward current ¹⁾	A	1600 1945	T _c =119 °C; Double side cooled; T _c =100 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I _{FRMS}	RMS forward current ¹⁾	A	2512	T _c =119 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I _{FSM}	Surge forward current ¹⁾	kA	30.0 36.0	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =10 ms; single pulse; V _R =0 V
			32.0 38.0	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	4500 6400	T _j =T _{j max} T _j =25 °C	180° half-sine wave; t _p =10 ms; single pulse; V _R =0 V
			4200 5900	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	3000...3600	T _{j min} < T _j < T _{j max} ; 180° half-sine wave; 50 Hz	
V _{RSM}	Non-repetitive peak reverse voltages	V	3100...3700	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...+175		
MECHANICAL					
F	Mounting force ¹⁾	kN	24.0...28.0		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V _{FM}	Peak forward voltage ¹⁾ , max	V	1.90	T _j =25 °C; I _{FM} =5024 A	
V _{F(TO)}	Forward threshold voltage, max	V	0.954	T _j =T _{j max} ;	
r _T	Forward slope resistance ¹⁾ , max	mΩ	0.249	0.5 π I _{FAV} < I _T < 1.5 π I _{FAV}	
BLOCKING					
I _{RRM}	Repetitive peak reverse current, max	mA	100	T _j =T _{j max} ; V _R =V _{RRM}	
THERMAL					
R _{thjc}	Thermal resistance, junction to case ¹⁾ , max	°C/W	0.0180	Direct current	Double side cooled
R _{thjc-A}			0.0396		Anode side cooled
R _{thjc-K}			0.0324		Cathode side cooled
MECHANICAL					
m	Weight, max	g	71.80		

PART NUMBERING GUIDE				NOTES
DR	56	1600	36	1) Depending on the specifications of the housing used. The specified values are relevant when using the Proton-Electrotex D.D3 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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