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 DR24-250-44

Maximum allowable average forward current[1)]		I_{FAV}	250 A	
Repetitive peak reverse voltage		V_{RRM}	3800...4400 V	
V_{RRM}, V	3800	4000	4200	4400
Voltage code	38	40	42	44
T_j, °C	–60...+150			

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Maximum allowable average forward current[1)]	A	250 299	T_c=111 °C; Double side cooled; T_c=100 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current[1)]	A	392	T_c=111 °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current[1)]	kA	4.0 4.4	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; t_p=10 ms; single pulse; V_R=0 V
			4.0 4.5	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^2t	Safety factor[1)]	$A^2s\cdot10^3$	80 100	T_j=$T_{j\,max}$ T_j=25 °C	180° half-sine wave; t_p=10 ms; single pulse; V_R=0 V
			60 80	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	3800...4400	$T_{j\,min}$< T_j <$T_{j\,max}$; 180° half-sine wave; 50 Hz	
V_{RSM}	Non-repetitive peak reverse voltages	V	3900...4500	$T_{j\,min}$< 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...+150		
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	2.00	T_j=25 °C; I_{FM}=785 A	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.310	$T_j=T_{j\,max}$; 0.5 π I_{FAV} < I_T < 1.5 π I_{FAV}	
r_T	Forward slope resistance[1)], max	mΩ	1.471		
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	6.40		

PART NUMBERING GUIDE

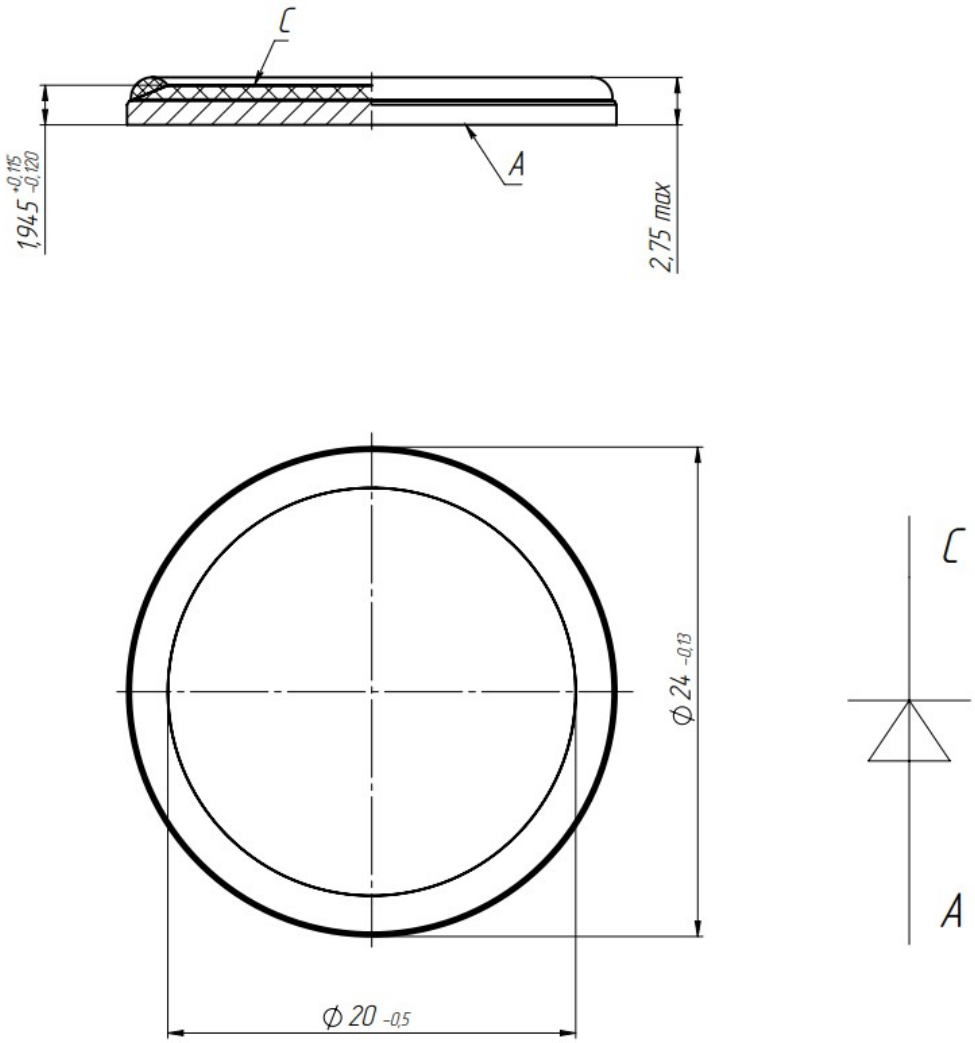
DR	24	250	44
1	2	3	4

1. Rectifier Diode Chip
2. Maximum diameter, mm
3. Average forward current, A
4. Voltage code

NOTES

[1)] Depending on the specifications of the housing used. The specified values are relevant when using the Proton-Electrotex D.A1 housing.

OVERALL DIMENSIONS



All dimensions in millimeters

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