

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

Power Rectifier Avalanche Diodes Type DA243-1000-24

Average forward current		I_{FAV}		1000 A	
Repetitive peak reverse voltage		V_{RRM}		1600 ÷ 2400 V	
V_{RRM} , V	1600	1800	2000	2200	2400
Voltage code	16	18	20	22	24
T_j , °C	- 60 ÷ 175				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	1000 1100	$T_c=110$ °C; Double side cooled; $T_c=100$ °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	1570	$T_c=110$ °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	18.0 19.5	$T_j=T_{j\max}$ $T_j=25$ °C	180° half-sine wave; $t_p=10$ ms; single pulse; $V_R=0$ V;
			19.0 23.0	$T_j=T_{j\max}$ $T_j=25$ °C	180° half-sine wave; $t_p=8.3$ ms; single pulse; $V_R=0$ V;
I^2t	Safety factor	$A^2s \cdot 10^3$	1600 1900	$T_j=T_{j\max}$ $T_j=25$ °C	180° half-sine wave; $t_p=10$ ms; single pulse; $V_R=0$ V;
			1400 2100	$T_j=T_{j\max}$ $T_j=25$ °C	180° half-sine wave; $t_p=8.3$ ms; single pulse; $V_R=0$ V;
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	1600÷2400	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz;	
$V_{(BR)}$	Breakdown voltage	V	2000÷2850	$T_j=25$ °C; $I_{(BR)}=100$ mA; $t_p=10$ ms; 5 Hz	
V_R	Reverse continuous voltages	V	$0.75 \cdot V_{RRM}$	$T_j=T_{j\max}$;	
P_{RSM}	Surge reverse power dissipation	kW	16	$T_j= T_{j\max}$; $t_p = 100$ μs; 180° half-sine current waveforms; single pulse	
THERMAL					
T_{stg}	Storage temperature	°C	- 60 ÷ 50		
T_j	Operating junction temperature	°C	- 60 ÷ 175		
MECHANICAL					
F	Mounting force	kN	14.0 ÷ 16.0		
a	Acceleration	m/s^2	50	Device unclamped	
			100	Device clamped	

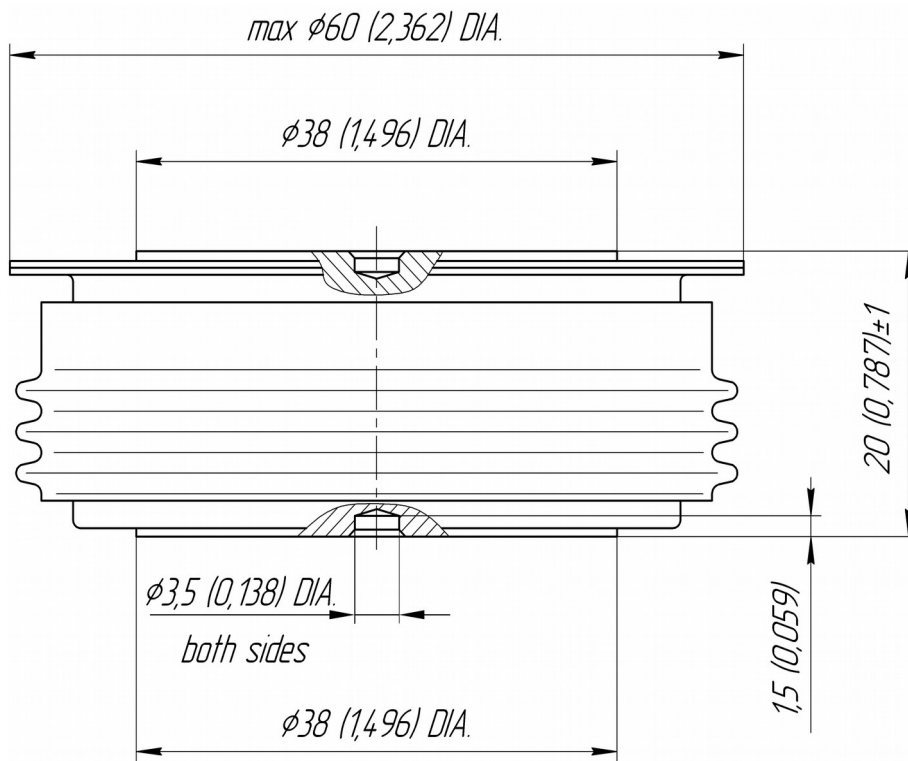
CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	2.00	$T_j=25\text{ }^\circ\text{C}; I_{FM}=3140\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.00	$T_j=T_{j,max};$	
r_T	Forward slope resistance, max	$m\Omega$	0.470	$0.5 \pi I_{FAV} < I_T < 1.5 \pi I_{FAV}$	
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	60	$T_j=T_{j,max};$ $V_R=V_{RRM}$	
THERMAL					
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0300	Direct current	Double side cooled
R_{thjc-A}			0.0660		Anode side cooled
R_{thjc-K}			0.0540		Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.0060	Direct current	
MECHANICAL					
w	Weight, typ	g	260		
D_s	Surface creepage distance	mm (inch)	23.69 (0.933)		
D_a	Air strike distance	mm (inch)	19.10 (0.752)		

PART NUMBERING GUIDE

DA	243	1000	24	N
1	2	3	4	5

1. DA — Avalanche Diode
2. Design version
3. Average forward current, A
4. Voltage code
5. Ambient conditions: N – normal; T – tropical



All dimensions in millimeters (inches)