

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

Rectifier Diode Type D123-200-60

Average forward current				I_{FAV}	200 A				
Repetitive peak reverse voltage				V_{RRM}	4600 ÷ 6000 V				
V_{RRM}, V	4600	4800	5000	5200	5400	5600	5800	6000	
Voltage code	46	48	50	52	54	56	58	60	
$T_j, ^\circ C$	-60 ÷ 150								

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	200 255	$T_c=116\text{ }^\circ C$; Double side cooled; $T_c=100\text{ }^\circ C$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	314	$T_c=116\text{ }^\circ C$; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	3.0 3.5	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^\circ C$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V}$;
			4.0 4.6	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^\circ C$	180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V}$;
I^2t	Safety factor	$A^2s \cdot 10^3$	45 60	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^\circ C$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V}$;
			65 85	$T_j=T_{j\text{ max}}$ $T_j=25\text{ }^\circ C$	180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V}$;
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	4600 ÷ 6000	$T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; 50 Hz;	
V_{RSM}	Non-repetitive peak reverse voltages	V	4700 ÷ 6100	$T_{j\text{ min}} < T_j < T_{j\text{ max}}$; 180° half-sine wave; 50 Hz; single pulse;	
V_R	Reverse continuous voltages	V	$0.75 \cdot V_{RRM}$	$T_j = T_{j\text{ max}}$;	
THERMAL					
T_{stg}	Storage temperature	$^\circ C$	-60 ÷ 50		
T_j	Operating junction temperature	$^\circ C$	-60 ÷ 150		
MECHANICAL					
F	Mounting force	kN	5.0 ÷ 7.0		
a	Acceleration	m/s^2	50	Device unclamped	
			100	Device clamped	

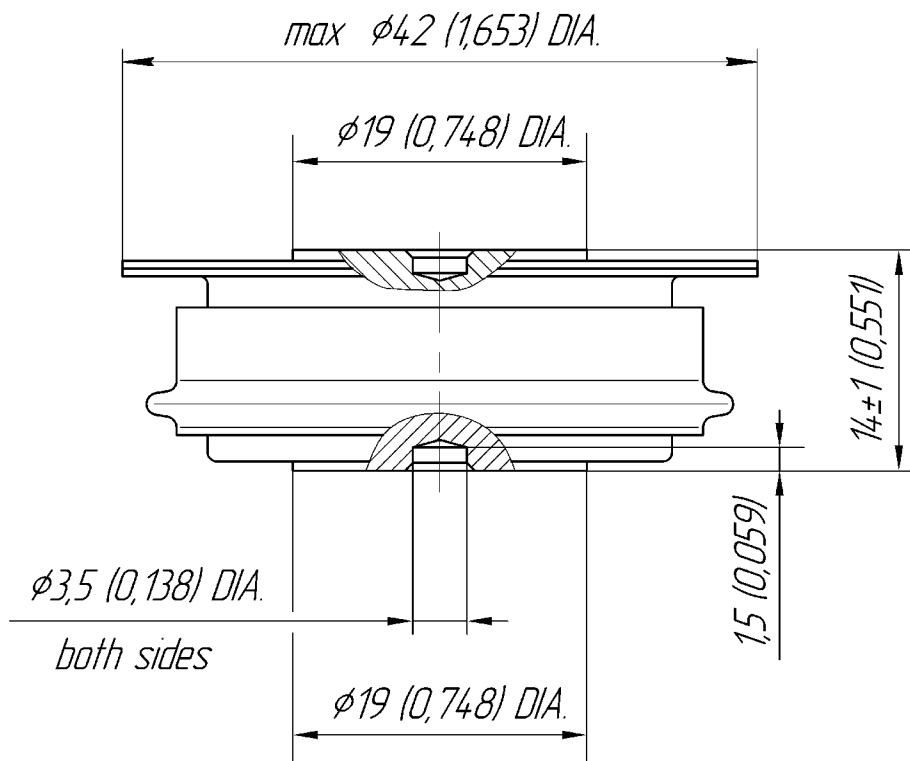
CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	2.50	$T_j=25\text{ }^\circ\text{C}; I_{FM}=628\text{ A}$
$V_{F(TO)}$	Forward threshold voltage, max	V	1.10	$T_j=T_{j\text{ max}}$;
r_T	Forward slope resistance, max	m Ω	2.600	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	35	$T_j=T_{j\text{ max}}$; $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.070	Double side cooled
R_{thjc-A}			0.154	Direct current
R_{thjc-K}			0.126	Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.010	Direct current
MECHANICAL				
w	Weight, typ	g	65	
D_s	Surface creepage distance	mm (inch)	11.74 (0.462)	
D_a	Air strike distance	mm (inch)	11.60 (0.457)	

PART NUMBERING GUIDE

D	123	200	60	N
1	2	3	4	5

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



All dimensions in millimeters (inches)