



Avalanche Stud Diode
Type DA161-200-18

Optimum power handling
Low on-state and switching losses
Optimized for line frequency rectifiers
Designed for traction and industrial applications

Mean on-state current		I_{TAV}		200 A	
Repetitive peak reverse voltage		V_{RRM}		1000 ÷ 1800 V	
V_{RRM} , V	1000	1200	1400	1600	1800
Voltage code	10	12	14	16	18
T_j , °C	- 60 ÷ 150				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	200 310	$T_c=123\text{ °C};$ $T_c=100\text{ °C};$ 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	310	$T_c=123\text{ °C};$ 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	7.5 8.6	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V};$
			8.0 9.2	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V};$
I^2t	Safety factor	$A^2s\cdot 10^3$	280 365	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V};$
			265 350	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	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	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; 50 Hz;single pulse;	
V_R	Reverse continuous voltages	V	$0.75\cdot V_{RRM}$	$T_j=T_{j\max};$	
P_{RSM}	Surge reverse power dissipation	kW	16	$T_j= T_{j\max}; t_p = 100\ \mu s;$ 180° half-sine wave, 50 Hz, single pulse	
THERMAL					
T_{stg}	Storage temperature	°C	- 60 ÷ 150		
T_j	Operating junction temperature	°C	- 60 ÷ 150		
MECHANICAL					
M	Tightening torque	Nm	20 ÷ 30		
a	Acceleration	m/s^2	100		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	1.40	$T_j=25\text{ }^\circ\text{C}; I_{FM}=628\text{ A}$
$V_{F(TO)}$	Forward threshold voltage, max	V	0.80	$T_j=T_{j\text{ max}}$
r_T	Forward slope resistance, max	m Ω	1.050	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	25	$T_j=T_{j\text{ max}}$ $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.1000	Direct current
MECHANICAL				
w	Weight, typ	g	250	
D_s	Surface creepage distance	mm (inch)	12.4 (4.882)	
D_a	Air strike distance	mm (inch)	12.4 (4.882)	

PART NUMBERING GUIDE

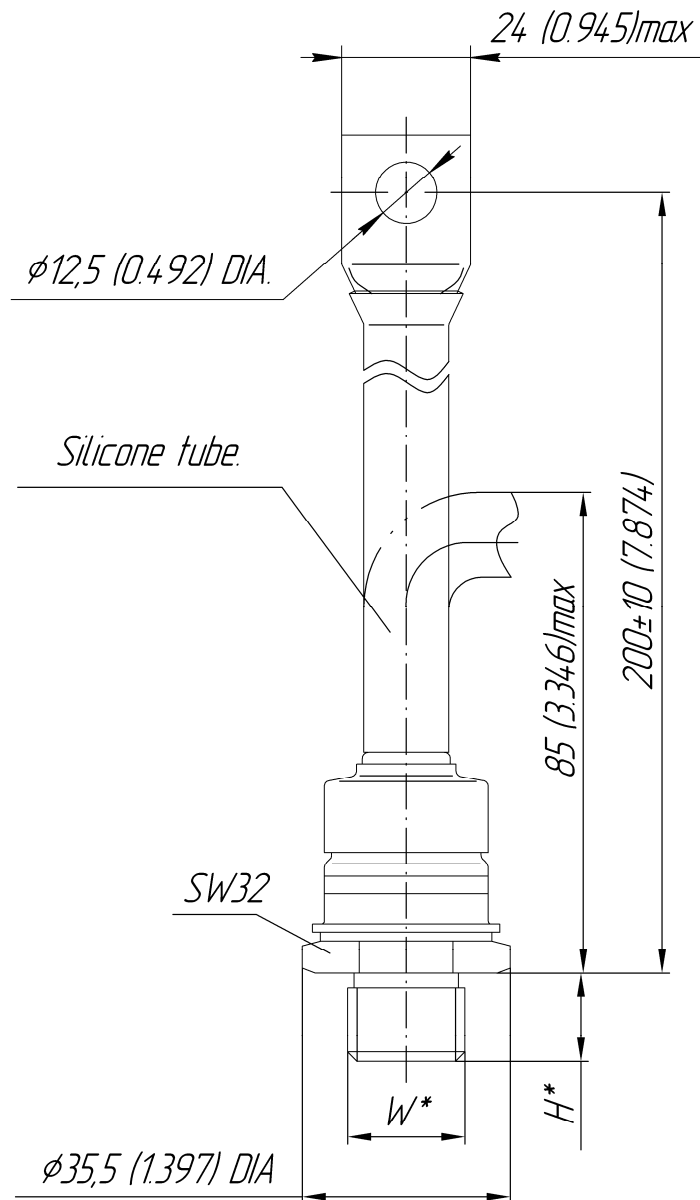
DA	161	200	18	N
1	2	3	4	5

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

JSC "PROTON-ELECTROTEX"

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Type of screw	W	H
Metric Screw Type B	M20x1,5	16
Metric Screw Type A (upon request)	M16x1,5	13

Polarity		Example of code designation	Reference designation	Colors	
				Anode	Cathode
Normal	Anode to stud	DA161-200-18		-	Red tube
Reverse	Cathode to stud	DA161-200X-18		Black tube	-

All dimensions in millimeters (inches)

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In the interest of product improvement, Proton-Electrotex reserves the right to change data sheet without notice.

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