



**Rectifier Stud Diode
Type D161-250-18**

Optimum power handling
Low on-state and switching losses
Designed for traction and industrial applications

Mean on-state current	I_{FAV}		250 A		
Repetitive peak reverse voltage	V_{RRM}		1000 ÷ 1800V		
V_{RRM}, V	1000	1200	1400	1600	1800
Voltage code	10	12	14	16	18
$T_j, ^\circ C$	- 60 ÷ 190				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions
ON-STATE				
I_{FAV}	Average forward current	A	250 490	$T_c=155\ ^\circ C$; $T_c=100\ ^\circ C$; 180° half-sine wave; 50 Hz
I_{FRMS}	RMS forward current	A	393	$T_c=155\ ^\circ C$; 180° half-sine wave; 50 Hz
I_{FSM}	Surge forward current	kA	6.4 7.4	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$ 180° half-sine wave; 50 Hz ($t_p=10\ ms$); single pulse; $V_R=0\ V$;
			7.0 8.1	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$ 180° half-sine wave; 60 Hz ($t_p=8.3\ ms$); single pulse; $V_R=0\ V$;
I^2t	Safety factor	$A^2s \cdot 10^3$	200 270	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$ 180° half-sine wave; 50 Hz ($t_p=10\ ms$); single pulse; $V_R=0\ V$;
			200 270	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$ 180° half-sine wave; 60 Hz ($t_p=8.3\ ms$); single pulse; $V_R=0\ V$;
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	$0.75 \cdot V_{RRM}$	$T_j = T_{j\ max}$;
THERMAL				
T_{stg}	Storage temperature	$^\circ C$	- 60 ÷ 190	
T_j	Operating junction temperature	$^\circ C$	- 60 ÷ 190	
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	1.35	$T_j=25\text{ }^\circ\text{C}; I_{FM}=785\text{ A}$
$V_{F(TO)}$	Forward threshold voltage, max	V	0.90	$T_j=T_{j\text{ max}};$ $0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$
r_T	Forward slope resistance, max	m Ω	0.770	
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	50	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$
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

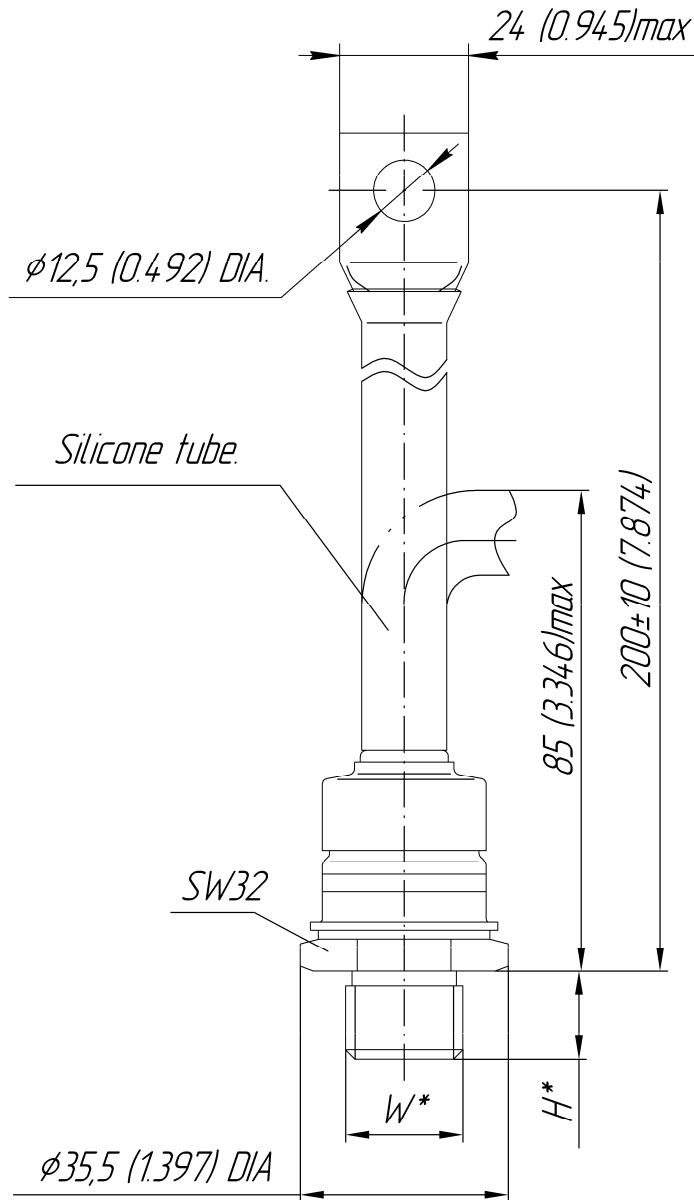
D	161	250		18	N
1	2	3	4	5	6

1. D — Rectifier Diode
2. Design version
3. Average forward current, A
4. Polarity: X – Cathode to Stud; Anode to Stud – no symbol
5. Voltage code
6. Ambient conditions: N – normal; T – tropical

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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	D161-250-18	-	Red tube
Reverse	Cathode to stud	D161-250X-18	Black tube	-

All dimensions in millimeters (inches)

The information contained herein is confidential and protected by Copyright. In the interest of product improvement, Proton-Electrotex reserves the right to change data sheet without notice.

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