



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

Rectifier Stud Diode
Type D175-400-18

Mean on-state current	I_{TAV}		400 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 , °C	- 60 ÷ 190				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	400 690	$T_c=149\text{ °C};$ $T_c=100\text{ °C};$ 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	628	$T_c=149\text{ °C};$ 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	15.0 17.0	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V};$
			16.0 18.0	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 60 Hz ($t_p=8.3\text{ ms}$); single pulse; $V_R=0\text{ V};$
I^2t	Safety factor	$A^2s\cdot 10^3$	1125 1445	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	180° half-sine wave; 50 Hz ($t_p=10\text{ ms}$); single pulse; $V_R=0\text{ V};$
			1060 1340	$T_j=T_{j\max}$ $T_j=25\text{ °C}$	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	$0.75\cdot V_{RRM}$	$T_j=T_{j\max};$	
THERMAL					
T_{stg}	Storage temperature	°C	- 60 ÷ 190		
T_j	Operating junction temperature	°C	- 60 ÷ 190		
MECHANICAL					
F	Mounting force	kN	1.5 ÷ 2.5		
a	Acceleration	m/s^2	100		

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	1.60	$T_J=25\text{ }^\circ\text{C}; I_{FM}=1256\text{ A}$
$V_{F(TO)}$	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	0.560	
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	70	$T_J=T_{J\text{ max}};$ $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0700	Direct current
MECHANICAL				
w	Weight, typ	g	500	
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

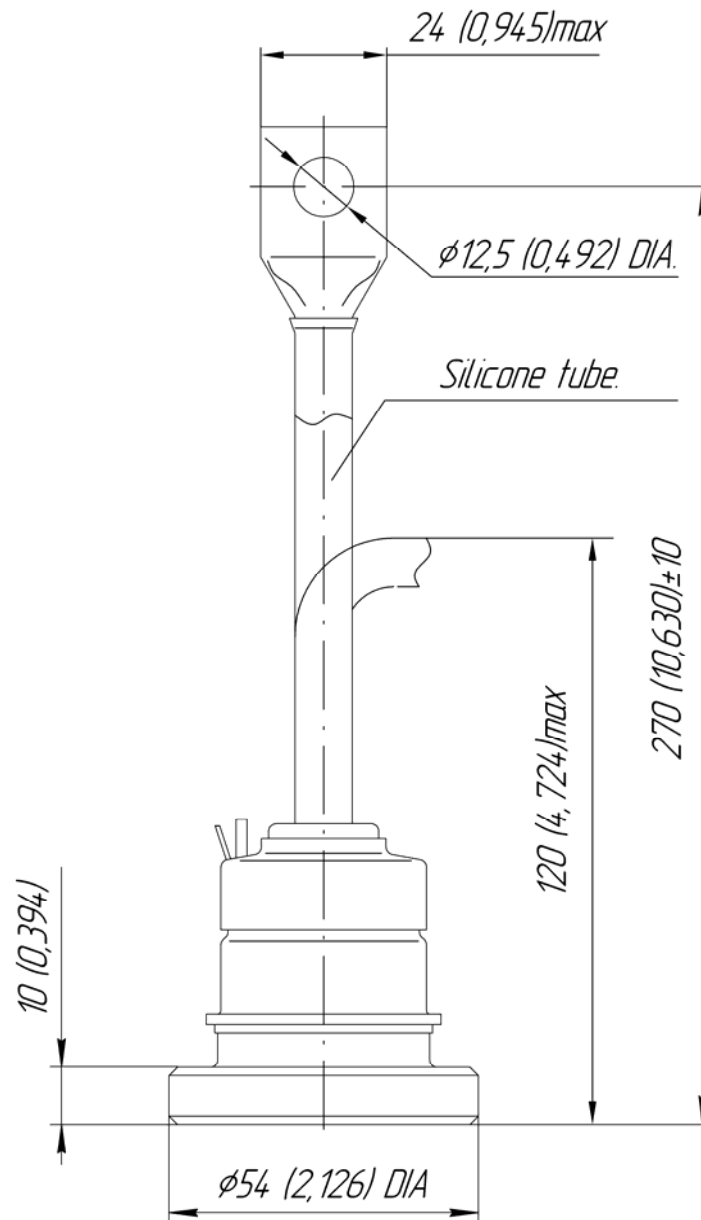
D	175	400		18	N
1	2	3	4	5	6

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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Polarity		Example of code designation	Reference designation	Colors	
				Anode	Cathode
Normal	Anode to stud	D175-400-18		-	Red tube
Reverse	Cathode to stud	D175-400X-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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