



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

**Rectifier Stud Diode
Type D171-400-18**

Mean on-state current	I_{FAV}		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
$T_{jv}, ^\circ C$	- 60 ÷ 190				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	400 635	$T_c=143\ ^\circ C$; $T_c=100\ ^\circ C$; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	628	$T_c=143\ ^\circ C$; 180° half-sine wave; 50 Hz	
I_{FSM}	Surge forward current	kA	14.0 16.0	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$	180° half-sine wave; 50 Hz ($t_p=10\ ms$); single pulse; $V_R=0\ V$;
			15.0 17.0	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$	180° half-sine wave; 60 Hz ($t_p=8.3\ ms$); single pulse; $V_R=0\ V$;
I^2t	Safety factor	$A^2s \cdot 10^3$	980 1280	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$	180° half-sine wave; 50 Hz ($t_p=10\ ms$); single pulse; $V_R=0\ V$;
			930 1195	$T_j=T_{j\ max}$ $T_j=25\ ^\circ C$	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	25 ÷ 35		
a	Acceleration	m/s^2	100		

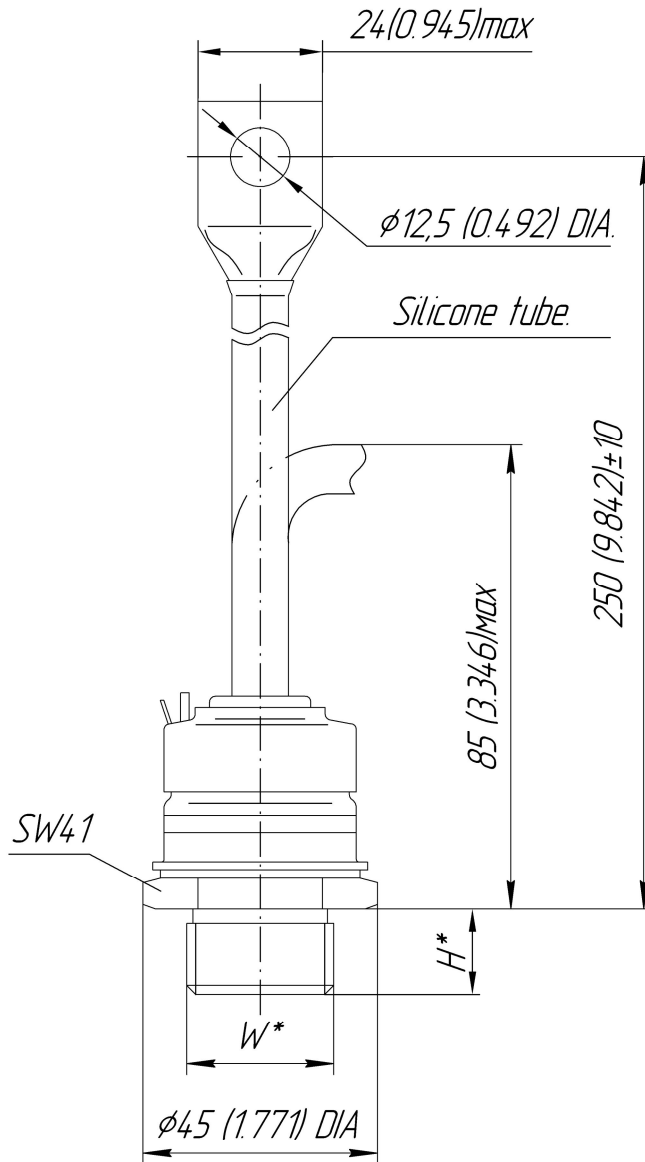
CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	1.45	$T_j=25\text{ }^\circ\text{C}; I_{FM}=1256\text{ A}$
$V_{F(TO)}$	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	$m\Omega$	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	$^\circ\text{C/W}$	0.0800	Direct current
MECHANICAL				
w	Weight, typ	g	440	
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	171	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



Type of screw	W	H
Metric Screw Type C	M24x1,5	19
Metric Screw Type B (upon request)	M20x1,5	15

Polarity		Example of code designation	Reference designation	Colors	
				Anode	Cathode
Normal	Anode to stud	D171-400-18		-	Red tube
Reverse	Cathode to stud	D171-400X-18		Black tube	-

All dimensions in millimeters (inches)