



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

**Rectifier Diode**  
**Type D443-1000-26**

Average forward current		$I_{FAV}$	1000 A	
Repetitive peak reverse voltage		$V_{RRM}$	2000 ÷ 2600 V	
$V_{RRM}$ , V	2000	2200	2400	2600
Voltage code	20	22	24	26
$T_j$ , °C	-60 ÷ 175			

**MAXIMUM ALLOWABLE RATINGS**

Symbols and parameters		Units	Values	Test conditions
<b>ON-STATE</b>				
$I_{FAV}$	Average forward current	A	1000 1205	$T_c=117$ °C; Double side cooled; $T_c=100$ °C; Double side cooled; 180° half-sine wave; 50 Hz
$I_{FRMS}$	RMS forward current	A	1570	$T_c=117$ °C; Double side cooled; 180° half-sine wave; 50 Hz
$I_{FSM}$	Surge forward current	kA	18.0 21.0	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ( $t_p=10$ ms); single pulse; $V_R=0$ V;
			19.0 22.0	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ( $t_p=8.3$ ms); single pulse; $V_R=0$ V;
$I^2t$	Safety factor	$A^2s \cdot 10^3$	1620 2205	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 50 Hz ( $t_p=10$ ms); single pulse; $V_R=0$ V;
			1495 2005	$T_j=T_{j\max}$ $T_j=25$ °C 180° half-sine wave; 60 Hz ( $t_p=8.3$ ms); single pulse; $V_R=0$ V;
<b>BLOCKING</b>				
$V_{RRM}$	Repetitive peak reverse voltages	V	2000 ÷ 2600	$T_{j\min} < T_j < T_{j\max}$ ; 180° half-sine wave; 50 Hz;
$V_{RSM}$	Non-repetitive peak reverse voltages	V	2100 ÷ 2700	$T_{j\min} < T_j < T_{j\max}$ ; 180° half-sine wave; 50 Hz; single pulse;
$V_R$	Reverse continuous voltages	V	$0.75 \cdot V_{RRM}$	$T_j = T_{j\max}$ ;
<b>THERMAL</b>				
$T_{stg}$	Storage temperature	°C	-60 ÷ 175	
$T_j$	Operating junction temperature	°C	-60 ÷ 175	
<b>MECHANICAL</b>				
F	Mounting force	kN	14.0 ÷ 16.0	
a	Acceleration	$m/s^2$	50	Device unclamped
			100	Device clamped

## CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
<b>ON-STATE</b>					
$V_{FM}$	Peak forward voltage, max	V	1.65	$T_j=25\text{ }^\circ\text{C}; I_{FM}=3140\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	0.95	$T_j=T_{j\text{ max}};$	
$r_T$	Forward slope resistance, max	m $\Omega$	0.280	$0.5 \pi I_{FAV} < I_T < 1.5 \pi I_{FAV}$	
<b>BLOCKING</b>					
$I_{RRM}$	Repetitive peak reverse current, max	mA	70	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$	
<b>THERMAL</b>					
$R_{thjc}$	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0350	Direct current	Double side cooled
$R_{thjc-A}$			0.0770		Anode side cooled
$R_{thjc-K}$			0.0630		Cathode side cooled
$R_{thck}$	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.0060	Direct current	
<b>MECHANICAL</b>					
w	Weight, typ	g	280		
$D_s$	Surface creepage distance	mm (inch)	33.30 (1.311)		
$D_a$	Air strike distance	mm (inch)	22.50 (0.886)		

### PART NUMBERING GUIDE

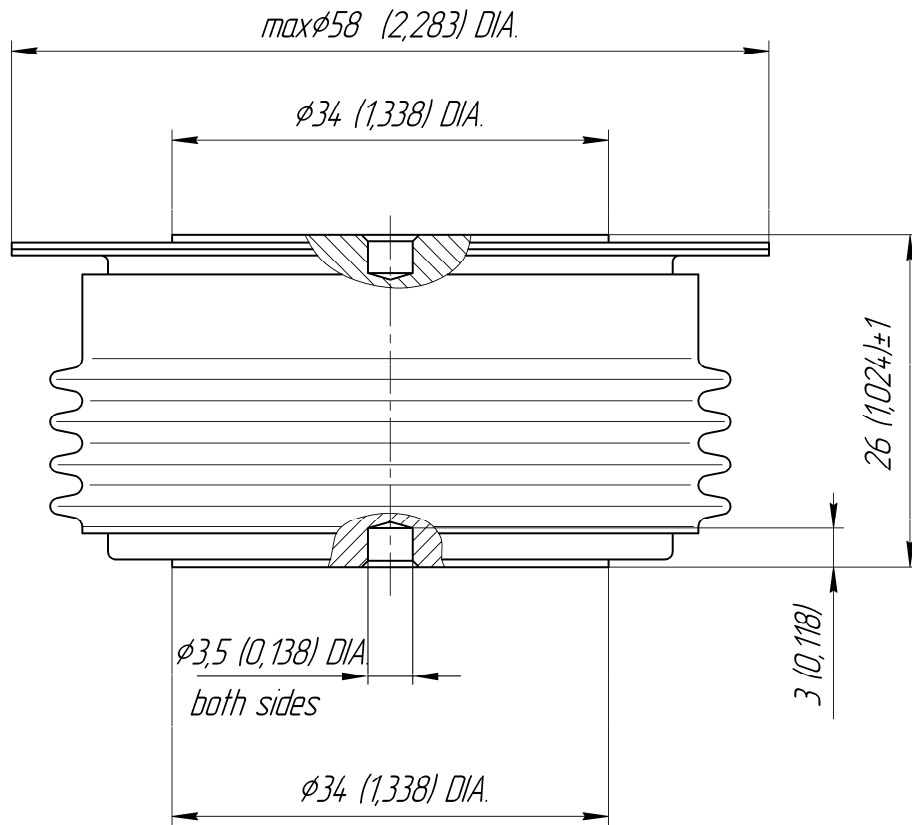
D	443	1000	26	N
1	2	3	4	5

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

### JSC "PROTON-ELECTROTEX"

19 Leskova, 302027, Orel, RUSSIA, Fax : +7 (4862) 41-00-56 Phones : +7 (4862) 43-41-39 / 43-41-40

E-mail: [eletex@eletex.ru](mailto:eletex@eletex.ru) / [eltex@orel.ru](mailto:eltex@orel.ru); I-net: [www.eletex.ru](http://www.eletex.ru)



All dimensions in millimeters (inches)

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E-mail: [eletex@eletex.ru](mailto:eletex@eletex.ru) / [eltex@orel.ru](mailto:eltex@orel.ru); I-net: [www.eletex.ru](http://www.eletex.ru)