



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

Rectifier Diode
Type D353-800-60

Average forward current				I_{FAV}	800 A			
Repetitive peak reverse voltage				V_{RRM}	4600 ÷ 6000 V			
V_{RRM}, V	4600	4800	5000	5200	5400	5600	5800	6000
Voltage code	46	48	50	52	54	56	58	60
$T_j, °C$	-60 ÷ 140							

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions
ON-STATE				
I_{FAV}	Average forward current	A	800	$T_c=100 °C$; Double side cooled; 180° half-sine wave; 50 Hz
I_{FRMS}	RMS forward current	A	1256	
I_{FSM}	Surge forward current	kA	12.0 14.0	$T_j=T_{jmax}$ $T_j=25 °C$ 180° half-sine wave; 50 Hz ($t_p=10 ms$); single pulse; $V_R=0 V$;
			13.0 15.0	$T_j=T_{jmax}$ $T_j=25 °C$ 180° half-sine wave; 60 Hz ($t_p=8.3 ms$); single pulse; $V_R=0 V$;
I^2t	Safety factor	$A^2s \cdot 10^3$	720 980	$T_j=T_{jmax}$ $T_j=25 °C$ 180° half-sine wave; 50 Hz ($t_p=10 ms$); single pulse; $V_R=0 V$;
			700 930	$T_j=T_{jmax}$ $T_j=25 °C$ 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	4600 ÷ 6000	$T_{jmin} < T_j < T_{jmax}$; 180° half-sine wave; 50 Hz;
V_{RSM}	Non-repetitive peak reverse voltages	V	4700 ÷ 6100	$T_{jmin} < T_j < T_{jmax}$; 180° half-sine wave; 50 Hz; single pulse;
V_R	Reverse continuous voltages	V	$0.75 \cdot V_{RRM}$	$T_j=T_{jmax}$;
THERMAL				
T_{stg}	Storage temperature	°C	-60 ÷ 140	
T_j	Operating junction temperature	°C	-60 ÷ 140	
MECHANICAL				
F	Mounting force	kN	24.0 ÷ 28.0	
a	Acceleration	m/s^2	50	Device unclamped
			100	Device clamped

CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	2.40	$T_j=25\text{ }^\circ\text{C}; I_{FM}=2512\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.31	$T_j=T_{j\text{ max}};$	
r_T	Forward slope resistance, max	m Ω	0.740	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$	
BLOCKING					
I_{RRM}	Repetitive peak reverse current, max	mA	100	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$	
THERMAL					
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0180	Direct current	Double side cooled
R_{thjc-A}			0.0396		Anode side cooled
R_{thjc-K}			0.0324		Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.0040	Direct current	
MECHANICAL					
w	Weight, typ	g	510		
D_s	Surface creepage distance	mm (inch)	38.84 (1.529)		
D_a	Air strike distance	mm (inch)	22.50 (0.886)		

PART NUMBERING GUIDE

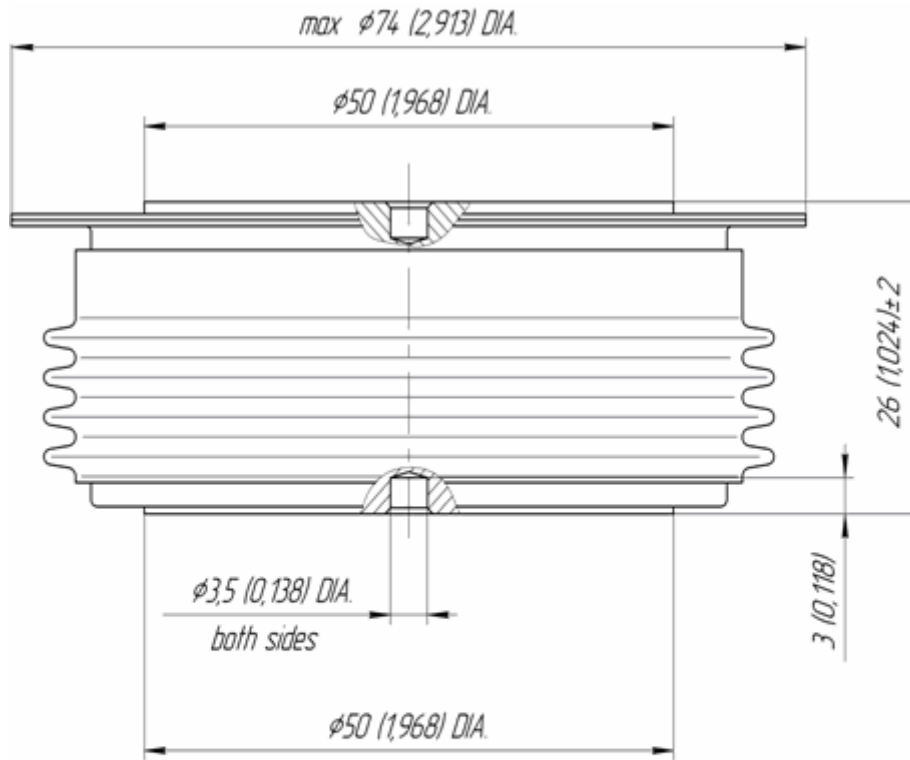
D	353	800	60	N
1	2	3	4	5

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"

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All dimensions in millimeters (inches)

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