

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

Rectifier Diode Type D353-1250-34

Average forward current		I_{FAV}	1250 A
Repetitive peak reverse voltage		V_{RRM}	3000 ÷ 3400 V
V_{RRM} , V	3000	3200	3400
Voltage code	30	32	34
T_j , °C	-60 ÷ 175		

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions	
ON-STATE					
I_{FAV}	Average forward current	A	1250	$T_c=100$ °C; Double side cooled; 180° half-sine wave; 50 Hz	
I_{FRMS}	RMS forward current	A	1962		
I_{FSM}	Surge forward current	kA	24.0 26.0	$T_j=T_{j\ max}$ $T_j=25$ °C	180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V;
			26.0 29.9	$T_j=T_{j\ max}$ $T_j=25$ °C	180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V;
I^2t	Safety factor	$A^2s \cdot 10^3$	2880 3805	$T_j=T_{j\ max}$ $T_j=25$ °C	180° half-sine wave; 50 Hz ($t_p=10$ ms); single pulse; $V_R=0$ V;
			2805 3710	$T_j=T_{j\ max}$ $T_j=25$ °C	180° half-sine wave; 60 Hz ($t_p=8.3$ ms); single pulse; $V_R=0$ V;
BLOCKING					
V_{RRM}	Repetitive peak reverse voltages	V	3000 ÷ 3400	$T_{j\ min} < T_j < T_{j\ max}$; 180° half-sine wave; 50 Hz;	
V_{RSM}	Non-repetitive peak reverse voltages	V	3100 ÷ 3500	$T_{j\ min} < T_j < T_{j\ max}$; 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 ÷ 50		
T_j	Operating junction temperature	°C	-60 ÷ 175		
MECHANICAL					
F	Mounting force	kN	24.0 ÷ 28.0		
a	Acceleration	m/s^2	50	Device unclamped	
			100	Device clamped	

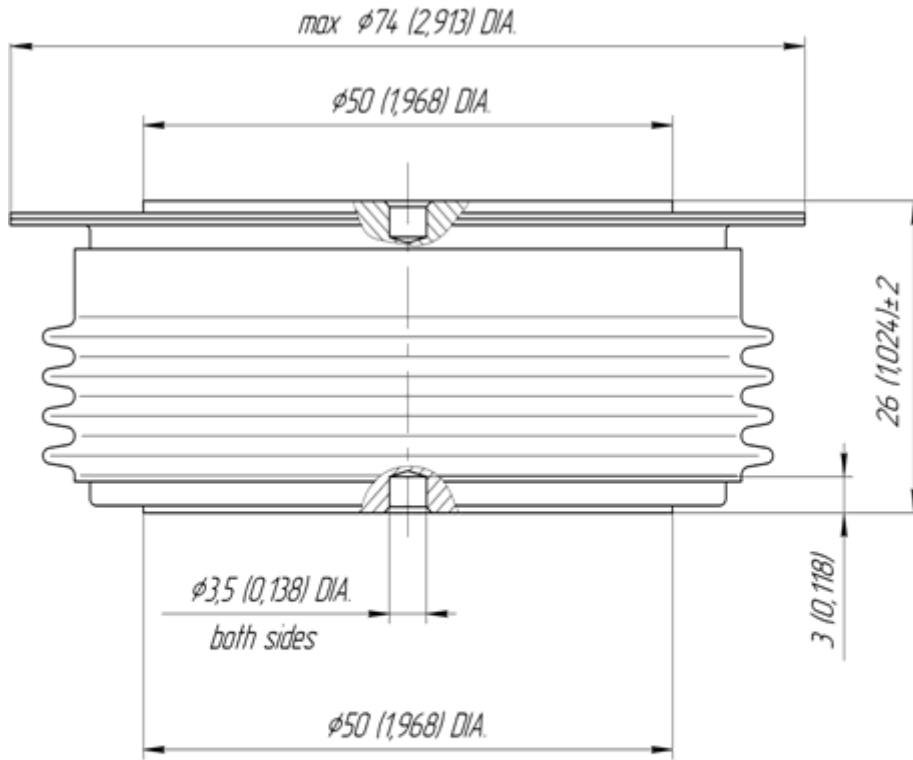
CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions	
ON-STATE					
V_{FM}	Peak forward voltage, max	V	2.20	$T_j=25\text{ }^\circ\text{C}; I_{FM}=3925\text{ A}$	
$V_{F(TO)}$	Forward threshold voltage, max	V	1.10	$T_j=T_{j\text{ max}}$;	
r_T	Forward slope resistance, max	m Ω	0.720	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$	
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	
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	1250	34	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



All dimensions in millimeters (inches)