

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

Power Rectifier Avalanche Diodes Type DA353-1600-34

Average forward current		I_{FAV}		1600 A	
Repetitive peak reverse voltage		V_{RRM}		2200÷3400 V	
V_{RRM}, V	1600	1800	2000	2200	2400
Voltage code	16	18	20	22	24
$T_j, ^\circ C$	- 60 ÷ 175				

MAXIMUM ALLOWABLE RATINGS

Symbols and parameters		Units	Values	Test conditions
ON-STATE				
I_{FAV}	Average forward current	A	1600	$T_c=100\text{ }^\circ C$; Double side cooled; 180° half-sine wave; 50 Hz
I_{FRMS}	RMS forward current	A	2512	
I_{FSM}	Surge forward current	kA	26.0 28.0	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ C$ 180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_R=0\text{ V}$;
			27.0 32.0	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ C$ 180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_R=0\text{ V}$;
I^2t	Safety factor	$A^2s\cdot 10^3$	3300 3900	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ C$ 180° half-sine wave; $t_p=10\text{ ms}$; single pulse; $V_R=0\text{ V}$;
			3000 4200	$T_j=T_{j\max}$ $T_j=25\text{ }^\circ C$ 180° half-sine wave; $t_p=8.3\text{ ms}$; single pulse; $V_R=0\text{ V}$;
BLOCKING				
V_{RRM}	Repetitive peak reverse voltages	V	2200÷3400	$T_{j\min} < T_j < T_{j\max}$; 180° half-sine wave; 50 Hz;
$V_{(BR)}$	Breakdown voltage	V	2650÷3850	$T_j=25\text{ }^\circ C$; $I_{(BR)}=100\text{ mA}$; $t_p=10\text{ ms}$; 5 Hz
V_R	Reverse continuous voltages	V	$0.75\cdot V_{RRM}$	$T_j=T_{j\max}$;
P_{RSM}	Surge reverse power dissipation	kW	16	$T_j= T_{j\max}$; $t_p = 100\text{ }\mu s$; 180° half-sine current waveforms; single pulse
THERMAL				
T_{stg}	Storage temperature	$^\circ C$	- 60 ÷ 50	
T_j	Operating junction temperature	$^\circ C$	- 60 ÷ 175	
MECHANICAL				
F	Mounting force	kN	22.0÷26.0	
a	Acceleration	m/s^2	50	Device unclamped
			100	Device clamped

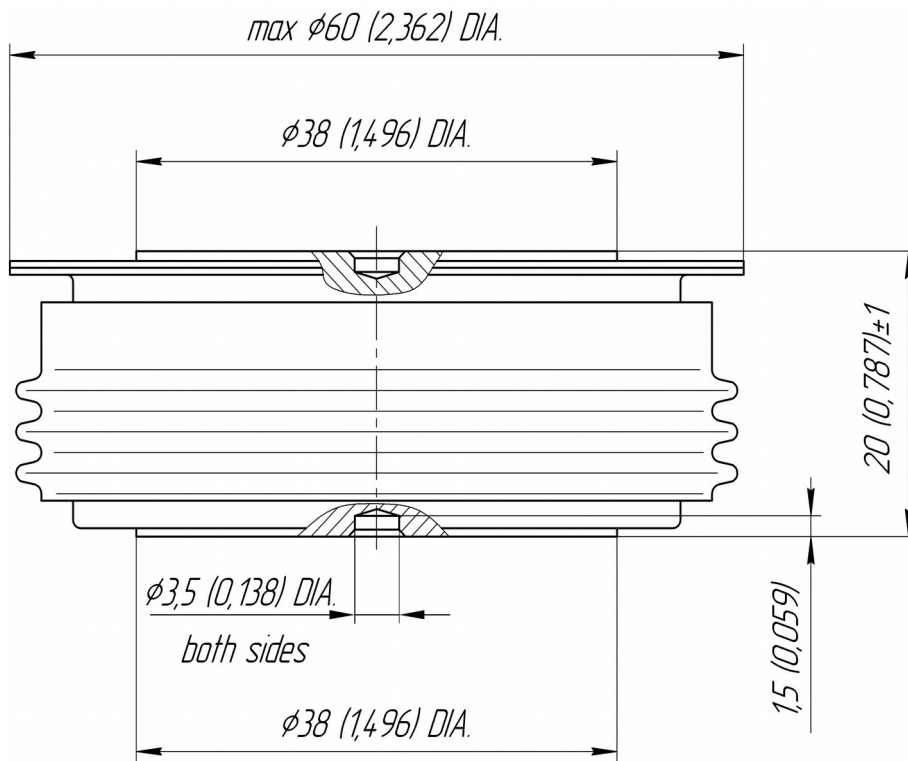
CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
ON-STATE				
V_{FM}	Peak forward voltage, max	V	2.00	$T_j=25\text{ }^\circ\text{C}; I_{FM}=5024\text{ A}$
$V_{F(TO)}$	Forward threshold voltage, max	V	1.05	$T_j=T_{j\text{ max}};$
r_T	Forward slope resistance, max	$m\Omega$	0.330	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$
BLOCKING				
I_{RRM}	Repetitive peak reverse current, max	mA	80	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$
THERMAL				
R_{thjc}	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0200	Double side cooled
R_{thjc-A}			0.0440	Anode side cooled
R_{thjc-K}			0.0360	Cathode side cooled
R_{thck}	Thermal resistance, case to heatsink, max	$^\circ\text{C/W}$	0.0040	Direct current
MECHANICAL				
w	Weight, typ	g	550	
D_s	Surface creepage distance	mm (inch)	33.72 (1.327)	
D_a	Air strike distance	mm (inch)	24.50 (0.964)	

PART NUMBERING GUIDE

DA	353	1600	34	N
1	2	3	4	5

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



All dimensions in millimeters (inches)