



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
<b>ON-STATE</b>				
$I_{FAV}$	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; $V_R=0\text{ V}$ ;
<b>BLOCKING</b>				
$V_{RRM}$	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
<b>THERMAL</b>				
$T_{stg}$	Storage temperature	$^\circ C$	- 60 ÷ 50	
$T_j$	Operating junction temperature	$^\circ C$	- 60 ÷ 175	
<b>MECHANICAL</b>				
F	Mounting force	kN	22.0÷26.0	
a	Acceleration	$m/s^2$	50	Device unclamped
			100	Device clamped

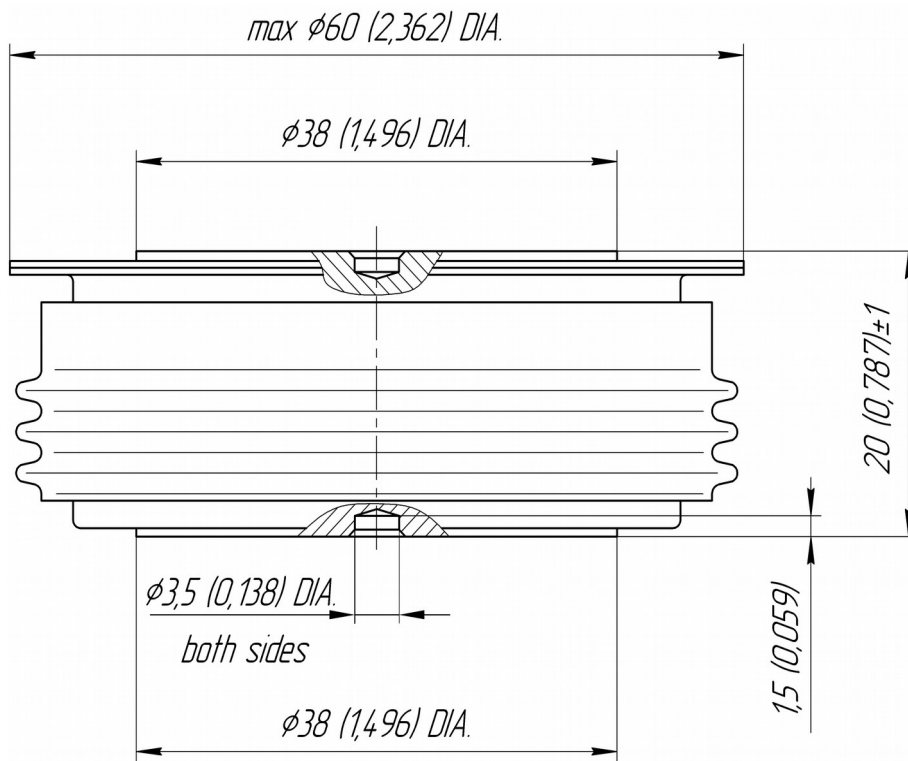
## CHARACTERISTICS

Symbols and parameters		Units	Values	Conditions
<b>ON-STATE</b>				
$V_{FM}$	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	$0.5\pi I_{FAV} < I_T < 1.5\pi I_{FAV}$
<b>BLOCKING</b>				
$I_{RRM}$	Repetitive peak reverse current, max	mA	80	$T_j=T_{j\text{ max}};$ $V_R=V_{RRM}$
<b>THERMAL</b>				
$R_{thjc}$	Thermal resistance, junction to case, max	$^\circ\text{C/W}$	0.0200	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
<b>MECHANICAL</b>				
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)