

## HDAE30U120G Ultra Fast Recovery Diode

### General Description

With excellent performance in reverse recovery time, switching speed and rated current, HDAE30U120G can be utilized with high voltage power switches for voltage limitation and high-frequency current rectification.

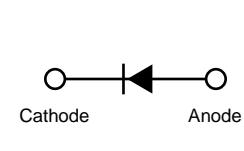
### Features

- Ultrafast Recovery Time
- Soft Recovery Characteristics
- Low Forward Voltage
- Low Stored Charge

### Applications

- Freewheeling, Snubber, Clamp
- Switch Power Supplies
- Motor Control, Inverters, Converters

$V_{RRM} = 1200 \text{ V}$   
 $I_F = 30 \text{ A}$   
 $t_{rr(\text{Typ})} = 38 \text{ nS}$



**Absolute Maximum Ratings**  $T_C=25^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Value	Unit
$V_{RRM}$	Peak Repetitive Reverse Voltage	1200	V
$V_R$	DC Blocking Voltage		
$I_{F(AV)}$	Average Rectifier Forward Current	30	A
$I_{FSM}$	Non-Rectifier Peak Surge Current @8.3ms	300	A
$T_J, T_{STG}$	Operating and Storage Temperature Range	-55 to +175	°C

### Electrical Characteristics

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{BR}$	Breakdown Voltage	$I_R = 100\mu\text{A}$	1200	--	--	V
$V_F$	Forward Voltage	$I_F = 30\text{A}, T_C = 25^\circ\text{C}$	--	2.20	3.0	V
		$I_F = 30\text{A}, T_C = 125^\circ\text{C}$	--	1.85	2.7	
$I_R$	Reverse Current	$V_R = 1200\text{V}, T_C = 25^\circ\text{C}$	--	--	50	$\mu\text{A}$
		$V_R = 1200\text{V}, T_C = 125^\circ\text{C}$	--	--	250	
$t_{rr}$	Reverse Recovery Time	$I_F = 1\text{A}, \text{di}/\text{dt} = 200\text{A}/\mu\text{s}$	--	38	--	ns

### Thermal Resistance Characteristics

Symbol	Parameter	Typ.	Max.	Unit
$R_{\theta JC}$	Junction-to-Case	--	1.2	°C/W

## Typical Characteristics

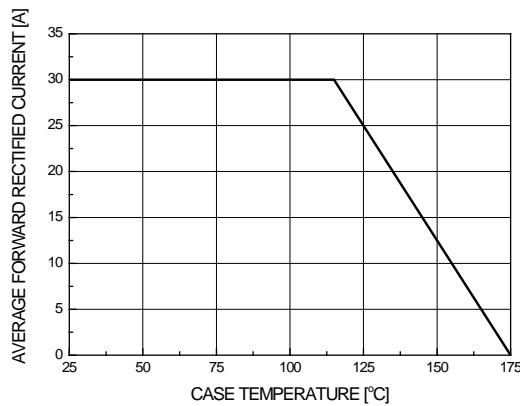


Figure 1. Forward Current Derating Curve

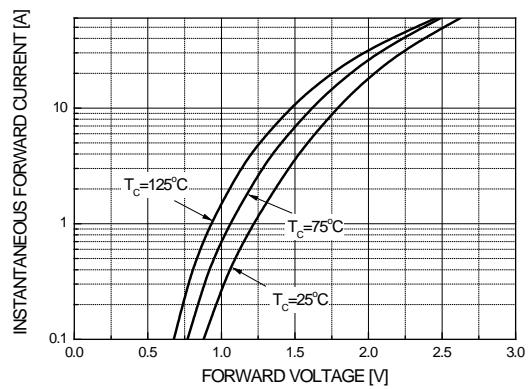


Figure 2. Typical Forward Characteristics

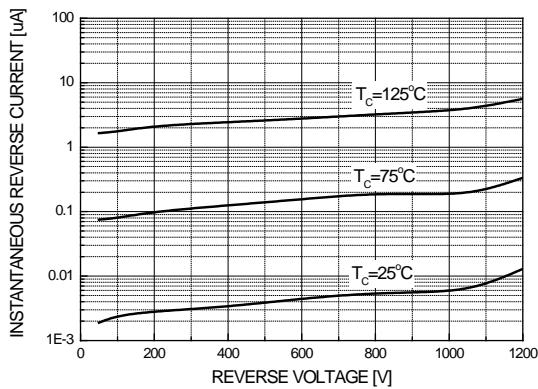


Figure 3. Typical Reverse Characteristics

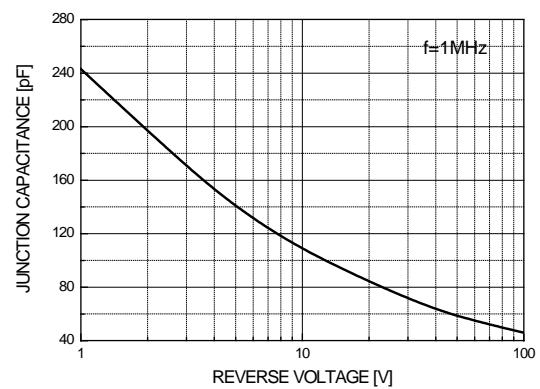


Figure 4. Typical Junction Capacitance

**Package Dimension****TO-247-2L**