

## Product Summary

| $V_{RRM}$ (V) | $I_O$ (A) | $V_F$ (MAX) (V)<br>@ +25°C | $I_R$ (MAX) (mA)<br>@ +25°C |
|---------------|-----------|----------------------------|-----------------------------|
| 40            | 1         | 0.5                        | 0.5                         |

## Description

The APD140 is a low voltage dual Schottky rectifier suited for switch mode power supplies and other power converters. This device is intended for use in medium voltage operation, and particularly, in high frequency circuits where low switching losses and low noise are required.

The APD140 is available in standard DO-214AC and DO-41 packages.

## Applications

- Low Voltage High Frequency Inverters
- DC-DC Converters
- Free Wheeling
- Polarity Protection



**DO-41**

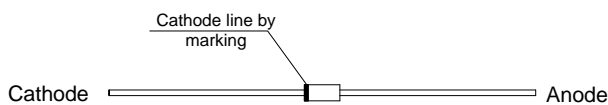


**DO-214AC**

- Notes:
1. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. All applicable RoHS exemptions applied.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

## Pin Assignments

(Top View)



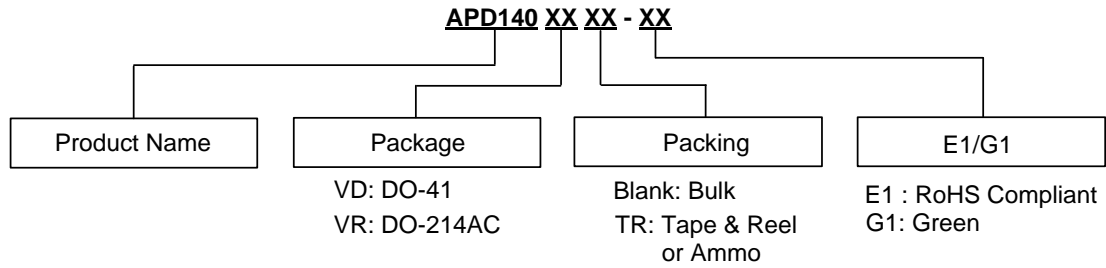
**DO-41**

(Top View)



**DO-214AC**

**Ordering Information** (Note 4)



Note 4: Diodes Inc's Pb-free products, as designated with "E1" suffix in the part number, are RoHS compliant. Products with "G1" suffix are available in green packages.

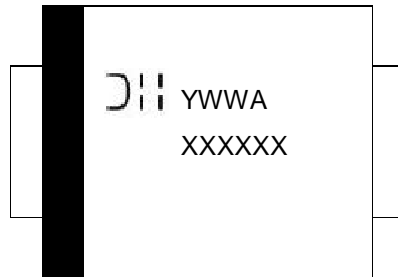


| Package  | Temperature Range | Part Number   | Marking ID | Packing          |
|----------|-------------------|---------------|------------|------------------|
| DO-41    | -65 to +125°C     | APD140VD-E1   | D140VD     | 1000/Bulk        |
| DO-41    | -65 to +125°C     | APD140VD-G1   | 140VDG     | 1000/Bulk        |
| DO-41    | -65 to +125°C     | APD140VDTR-E1 | D140VD     | 2500/Ammo        |
| DO-41    | -65 to +125°C     | APD140VDTR-G1 | 140VDG     | 2500/Ammo        |
| DO-214AC | -65 to +125°C     | APD140VRTR-G1 | 140VRG     | 7500/Tape & Reel |

**Marking Information**

(1) DO-214AC

(Top View)



First Line: Logo and Date Code  
 Y: Year  
 WW: Work Week of Molding  
 A: Assembly House Code  
 Second Line: Marking ID  
 (See Ordering Information)

**Marking Information** (Cont.)

(2) DO-41

(Top View)



First Line: Logo and Date Code  
 Y: Year  
 WW: Work Week of Molding  
 A: Assembly House Code  
 Second Line: Marking ID  
 (See Ordering Information)

**Maximum Ratings** ( $T_A = +25^\circ\text{C}$ , unless otherwise noted.) (Note 5)

| Characteristic   | Symbol      | Rating      | Unit             |
|--|-------------|-------------|------------------|
| Maximum Repetitive Reverse Voltage   | $V_{RRM}$   | 40          | V                |
| Maximum DC Blocking Voltage  | $V_{DC}$    |             |                  |
| Maximum RMS Voltage  | $V_{RMS}$   | 28          | V                |
| Average Rectified Forward Current<br>0.375 " (9.5mm) Lead Length (See Figure 1)        | $I_{F(AV)}$ | 1.0         | A                |
| Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half Sine-wave on Rated Load | $I_{FSM}$   | 35          | A                |
| Voltage Rate of Change (Rated $V_R$ )  | dv/dt       | 10000       | V/ $\mu\text{S}$ |
| Operating Junction Temperature Range (Note 6)  | $T_J$       | -65 to +125 | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_{ST}$    | -65 to +150 | $^\circ\text{C}$ |

Notes: 5. Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "Recommended Operating Conditions" is not implied. Exposure to "Absolute Maximum Ratings" for extended periods may affect device reliability.  
 6. The heat generated must be less than the thermal conductivity from Junction to Ambient:  $dP_D/dT_J < 1/\theta_{JA}$ .

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**Thermal Characteristics** ( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)
 

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| Characteristic | Symbol | Rating                                 |                | Unit |
|----------------|--------|--|----------------|------|
|                |        | Typical Thermal Resistance<br>(Note 7) | $R\theta_{JA}$ |      |
|                |        | DO-214AC                               | 100            |      |

Note 7: Device mounted on heat sink, with minimum recommended pad layout per <http://www.diodes.com>

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**Electrical Characteristics** ( $T_A = +25^\circ\text{C}$ , unless otherwise noted.)
 

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| Characteristic                         | Symbol | Rating | Unit | Test Condition             |
|--|--------|--------|------|----------------------------|
| Forward Voltage @ $I_F = 1.0\text{A}$  | $V_F$  | 0.5    | V    | –                          |
| Reverse Current @ Rated $V_R$ (Note 8) | $I_R$  | 0.5    | mA   | $T_A = +25^\circ\text{C}$  |
|  |        | 10     |      | $T_A = +100^\circ\text{C}$ |

Note 8: Short duration pulse test used to minimize self-heating effect, Pulse Test: 300 $\mu\text{s}$  pulse width, 1.0% duty cycle.

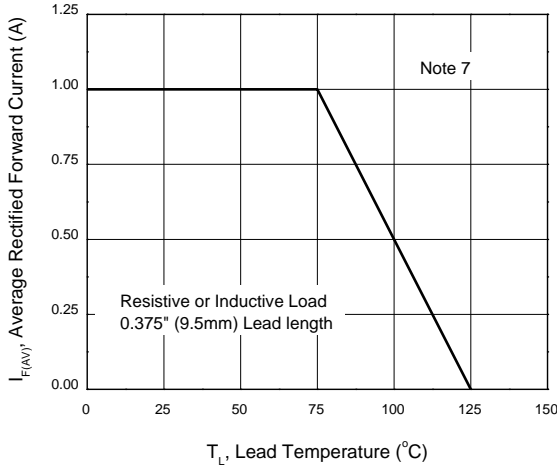


Figure 1. Forward Current Derating Curve

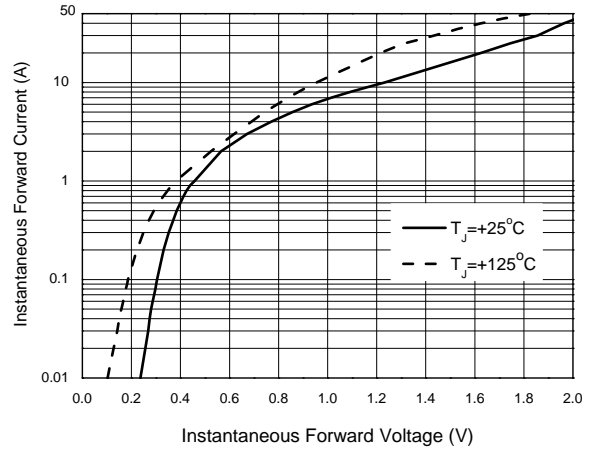


Figure 2. Typical Instantaneous Forward Characteristics

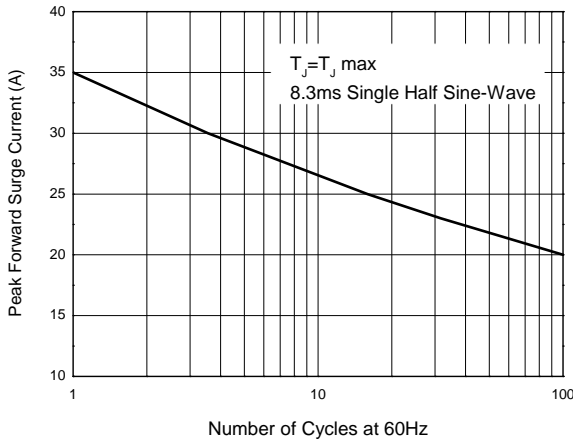


Figure 3. Maximum Non-Repetitive Peak Forward Surge Current

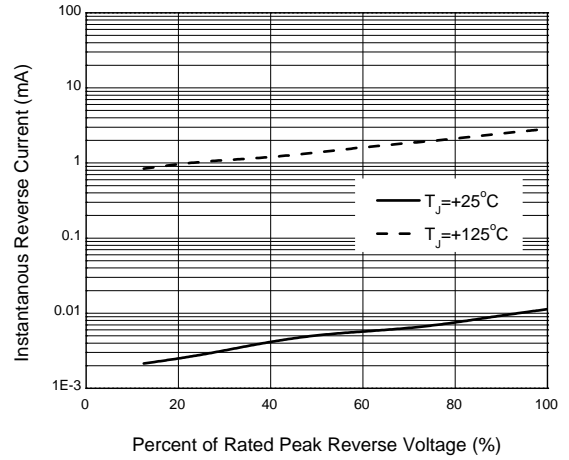


Figure 4. Typical Reverse Characteristics

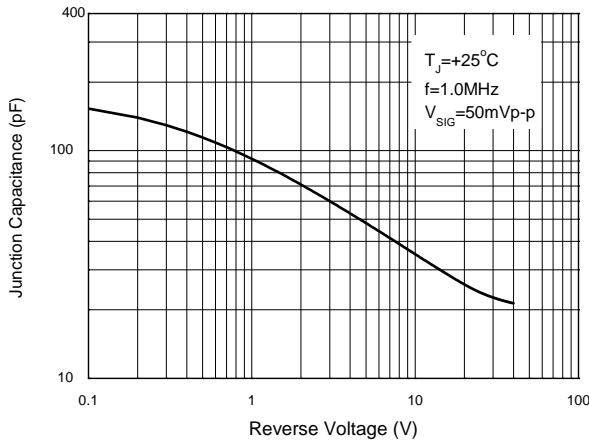
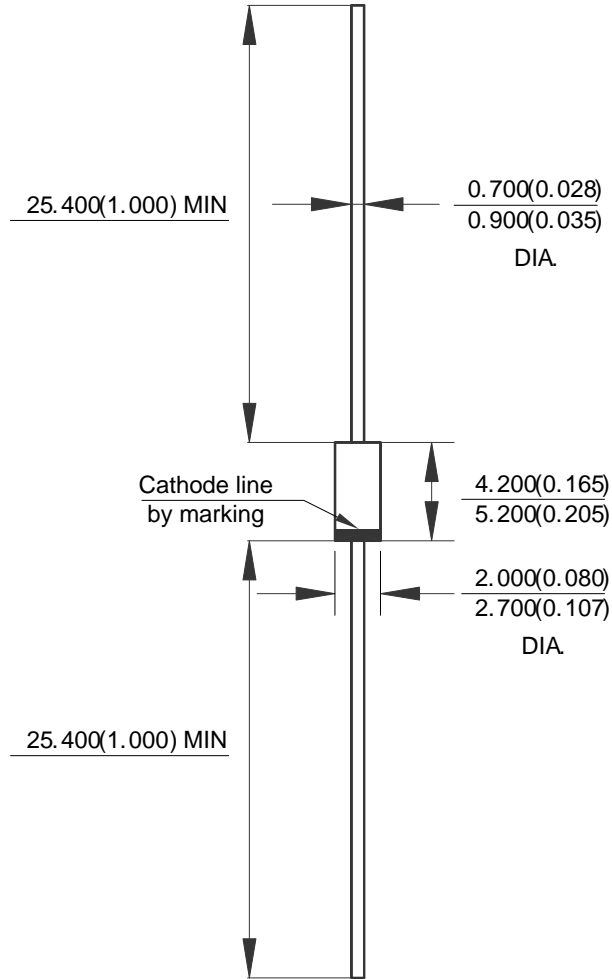


Figure 5. Typical Junction Capacitance

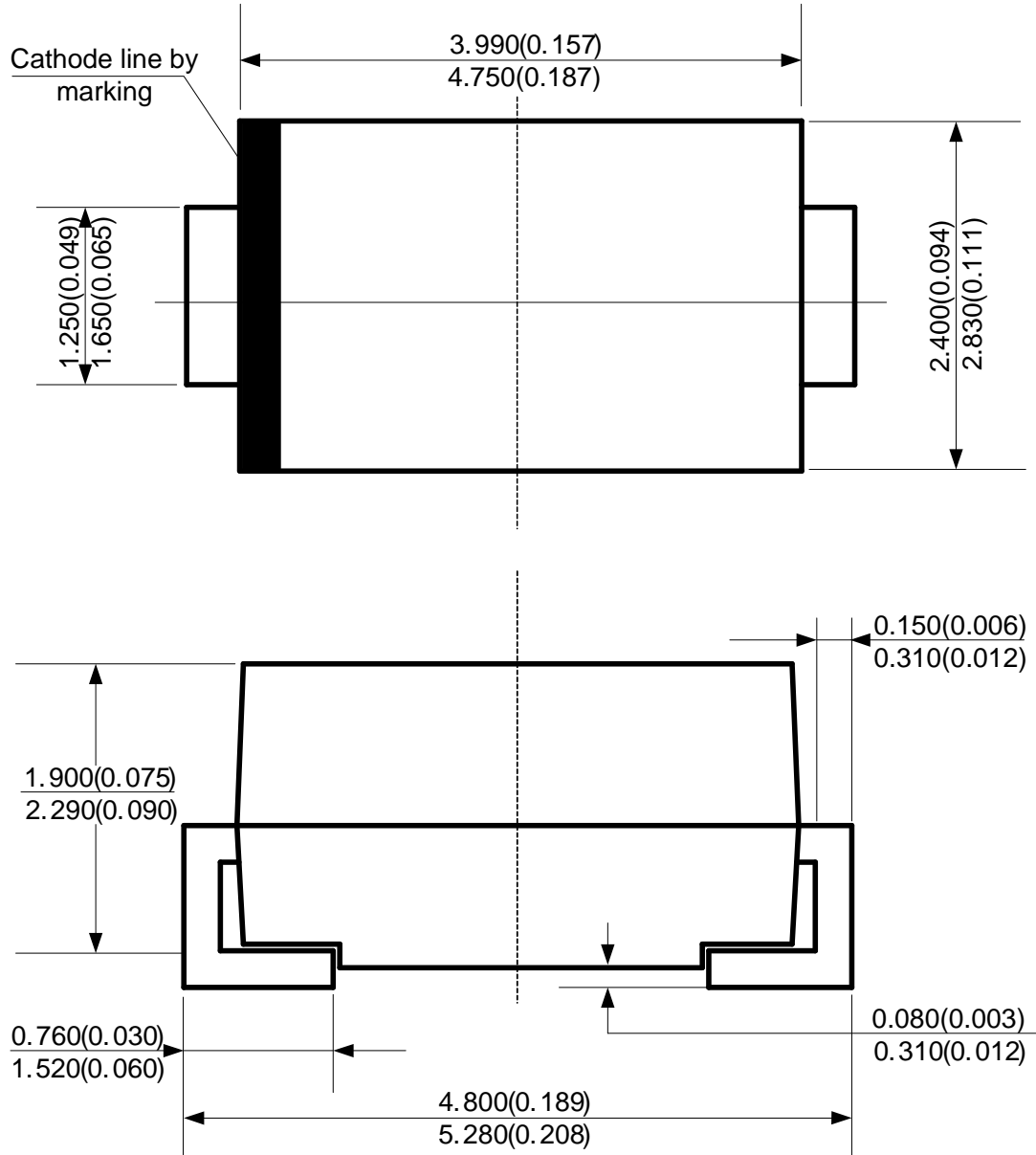
**Package Outline Dimensions** (All dimensions in mm(inch).)

(1) Package Type: DO-41



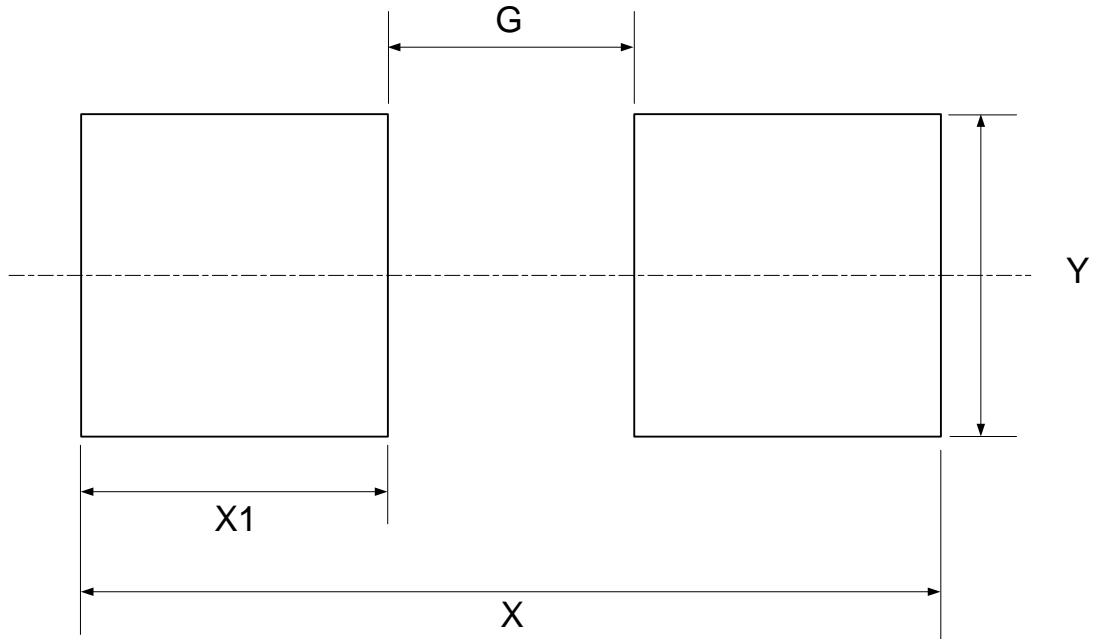
**Package Outline Dimensions** (Cont. All dimensions in mm(inch).)

(2) Package Type: DO-214AC



**Suggested Pad Layout**

(1) Package Type: DO-214AC



| Dimensions | Y<br>(mm)/(inch) | X1<br>(mm)/(inch) | G<br>(mm)/(inch) | X<br>(mm)/(inch) |
|------------|------------------|-------------------|------------------|------------------|
| Value      | 2.100/0.083      | 2.000/0.079       | 1.600/0.063      | 5.600/0.220      |



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