



# Silicon Switching Diode Chips

CD914, CD4148, CD4531, CD6642, CD3600, CD4150, CD6640, CD4153 & CD4454

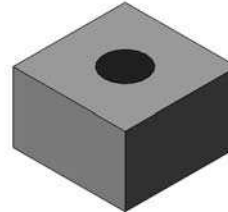
CD914, CD4148 & CD4531 available in JANHC & JANKC per MIL-PRF-19500/116

CD4153 available in JANHC & JANKC per MIL-PRF-19500/133



## Features

- All junctions completely protected with silicon dioxide.
- Compatible with all wire bonding and die attach techniques.



## Maximum Ratings

Operating Temperature: -55°C to 175°C  
 Storage Temperature: -65°C to +175°C

## Electrical Specifications @ +25 °C (Unless Otherwise Specified)

TYPE Number	V <sub>BR</sub> @ 100 μA	V <sub>RWM</sub>	I <sub>O</sub>	V <sub>F1</sub> I <sub>F</sub> = 10 mA	V <sub>F2</sub> I <sub>F</sub> = 50 mA	V <sub>F3</sub> I <sub>F</sub> = 100 mA	T <sub>rr</sub>	I <sub>R1</sub> @ 20 Vdc	I <sub>R2</sub>	I <sub>R3</sub> @ 20 Vdc T <sub>A</sub> = 150°C	I <sub>R4</sub> T <sub>A</sub> = 150°C	Capacitance @ 0V	Capacitance @ 1.5 V
	Volts (min)	Volts (pk)	mA	Vdc	Vdc	Vdc	nsec	nA	μA @ V	μA	μA @ V	pF	pF
CD914	100	75	75	0.8	1.2	N/A	5	25	0.5 @ 75	35	75 @ 75	4.0	2.8
CD4148 CD4531 CD6642	100	75	200	0.8	N/A	1.2	5	35	0.5 @ 75	35	75 @ 75	4.0	2.8
CD4454	75	50	200	1.0	N/A	N/A	4	N/A	0.1 @ 50	N/A	100 @ 50	2.0	N/A

TYPE Number	V <sub>BR</sub> I <sub>R</sub> = 10 μA*	V <sub>RWM</sub>	I <sub>R1</sub> V <sub>R</sub> = 50 Vdc T <sub>A</sub> = 150°C	I <sub>R2</sub> V <sub>R</sub> = 50 Vdc T <sub>A</sub> = 150°C	Capacitance V <sub>R</sub> = 0; f = 1 MHz; ac signals = 50 mV (p-p)	T <sub>rr</sub>
	Volts (min)	Volts (pk)	μA Vdc	μA Vdc	pF	nsec
CD3600	75	50	0.10	100	2.5	4
CD4150 CD6640	75	50	0.10	100	2.5	4
CD4153	75*	50	0.05	150	2.0	4

\*@ 5 μA for CD4153

Forward Voltage Limits - CD3600, CD4150 and CD6640:

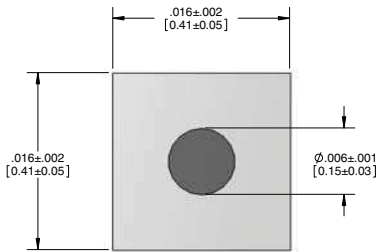
Limits	V <sub>F1</sub> I <sub>F</sub> = 1 mA dc	V <sub>F2</sub> I <sub>F</sub> = 10 mA dc	V <sub>F3</sub> I <sub>F</sub> = 50 mA dc (Pulsed)	V <sub>F4</sub> I <sub>F</sub> = 100 mA dc (Pulsed)	V <sub>F5</sub> I <sub>F</sub> = 200 mA dc (Pulsed)
	Vdc	Vdc	Vdc	Vdc	Vdc
minimum	0.540	0.680	0.780	0.820	0.870
maximum	0.620	0.740	0.860	0.920	1.000

Forward Voltage Limits - CD4153:

Limits	V <sub>F1</sub> I <sub>F</sub> = 100 μA dc	V <sub>F2</sub> I <sub>F</sub> = 250 μA dc	V <sub>F3</sub> I <sub>F</sub> = 1 mA dc	V <sub>F4</sub> I <sub>F</sub> = 2 mA dc	V <sub>F5</sub> I <sub>F</sub> = 10 mA dc	V <sub>F6</sub> I <sub>F</sub> = 20 mA dc
	Vdc	Vdc	Vdc	Vdc	Vdc	Vdc
minimum	0.49	0.53	0.59	0.62	0.70	0.74
maximum	0.55	0.59	0.67	0.70	0.81	0.88



**Outline Drawing**



**DESIGN DATA**

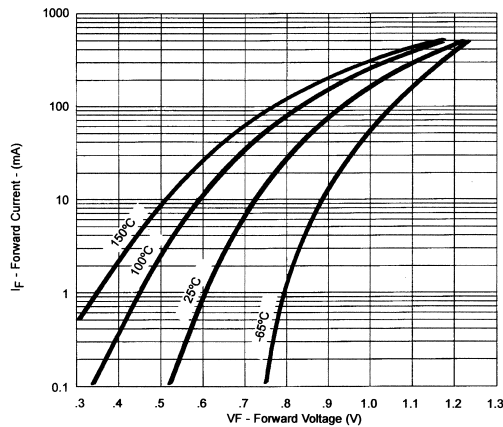
**METALLIZATION:** Top: (Anode) Al  
Back: (Cathode) Au

**AL THICKNESS:** 25,000 Å Minimum

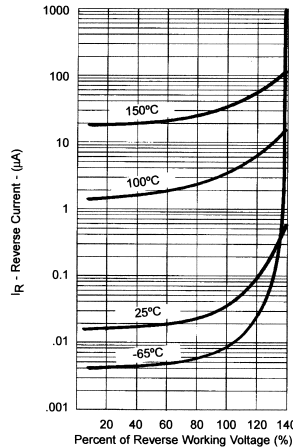
**GOLD THICKNESS:** 4,000 Å Minimum

**CHIP THICKNESS:** 10 Mils

**Graphs**



Typical Forward Current vs Forward Voltage



Typical Reverse Current vs Reverse Voltage

**NOTE:** All temperatures shown on graphs are junction temperatures

**Aeroflex / Metelics, Inc.**

975 Stewart Drive,  
Sunnyvale, CA 94085  
Tel: (408) 737-8181  
Fax: (408) 733-7645

Sales: 888-641-SEMI (7364)

**Hi-Rel Components**

9 Hampshire Street,  
Lawrence, MA 01840  
Tel: (603) 641-3800  
Fax: (978) 683-3264

[www.aeroflex.com/metelics-hirelcomponents](http://www.aeroflex.com/metelics-hirelcomponents)

54 Grenier Field Road,  
Londonderry, NH 03053  
Tel: (603) 641-3800  
Fax: (603)-641-3500

**ISO 9001: 2008 certified companies**

[www.aeroflex.com/metelics](http://www.aeroflex.com/metelics)      [metelics-sales@eroflex.com](mailto:metelics-sales@eroflex.com)

Aeroflex / Metelics, Inc. reserves the right to make changes to any products and services herein at any time without notice. Consult Aeroflex or an authorized sales representative to verify that the information in this data sheet is current before using this product. Aeroflex does not assume any responsibility or liability arising out of the application or use of any product or service described herein, except as expressly agreed to in writing by Aeroflex; nor does the purchase, lease, or use of a product or service from Aeroflex convey a license under any patent rights, copyrights, trademark rights, or any other of the intellectual rights of Aeroflex or of third parties.

Copyright 2009 Aeroflex / Metelics. All rights reserved.



Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.