



# DC2100 Series

## CERAMIC WAVEGUIDE PIN DIODES

### DESCRIPTION

The DC2100 Series PIN diodes are variable resistance diodes. The R.F. resistance can be varied between about 1 ohm and  $10^4$  ohms by a d.c. or a modulated bias current. The DC2100G family of devices can be chassis mounted for lower frequency applications.

### FEATURES

- Low Resistance
- Low Capacitance
- High Breakdown voltage
- Frequency range 10MHz - 18GHz
- Mesa and Planar versions available

### APPLICATIONS

PIN diodes are suitable for use as switches, modulators, attenuators and limiters.

### LIMITING CONDITIONS

Storage conditions	-55°C to +150°C
Operating temperature	-55°C to +150°C
Power dissipation	250mW

### TYPICAL DC CHARACTERISTICS $T_{amb} 25^\circ\text{C}$

**General Purpose and High Power Types** (all available in both polarities).

TYPE NUMBER	Outline No.	$V_R$ min.	$R_F$ max. (@ 100mA)	$C_G$ max. (TOTAL)	Lifetime $\tau_G$ (typ)	$R_{th}$
		V	Ohms	pF	ns	°C/W
DC2101A	00	250	1.2	0.5	700	15
DC2101B	39	250	1.2	0.5	700	15
DC2101C	04	250	1.2	0.5	700	15
DC2101G	90	250	1.2	0.5	700	15
DC2103A	00	500	1.2	1.0	2000	15
DC2103B	39	500	1.2	1.0	2000	15
DC2103C	04	500	1.2	1.0	2000	15
DC2103G	90	500	1.2	1.0	2000	15
DC2104A	00	250	1.2	0.7	700	15
DC2104B	39	250	1.2	0.7	700	15
DC2104C	04	250	1.2	0.7	700	15
DC2104F	23B	250	1.2	0.7	700	15
DC2104G	90	250	1.2	0.7	700	15

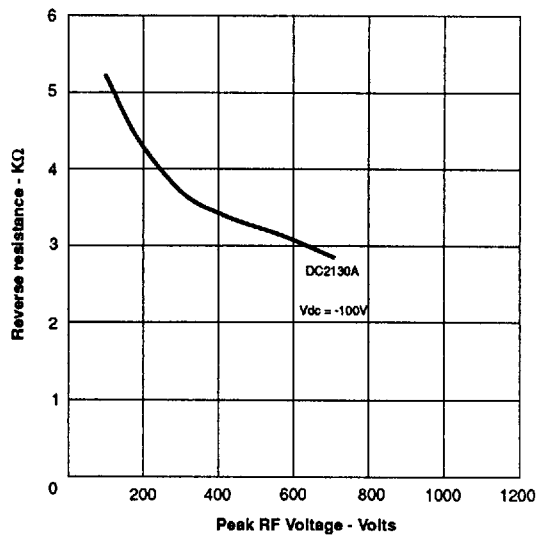
**TYPICAL DC CHARACTERISTICS**  $T_{amb} 25^{\circ}C$

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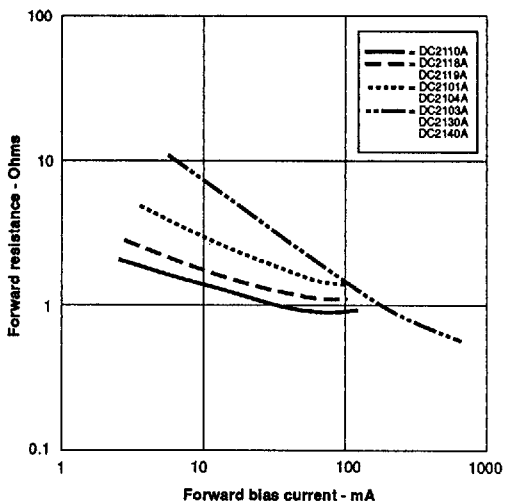
TYPE NUMBER	Outline No.	$V_R$ min.	$R_F$ max. (@ 100mA)	$C_d$ max. (TOTAL)	Lifetime $\tau_G$ (typ)	$R_{th}$
		V	Ohms	pF	ns	$^{\circ}C/W$
DC2130A	00	500	0.8	0.55-0.75	2000	15
DC2130G	90	500	0.8	0.55-0.75	2000	15
DC2130G-1	90	600	1.0	0.9	2000	15
DC2140A	00	400	1.0	1.0	4000	15
DC2140G	90	400	1.0	1.0	4000	15

**High Speed Types**

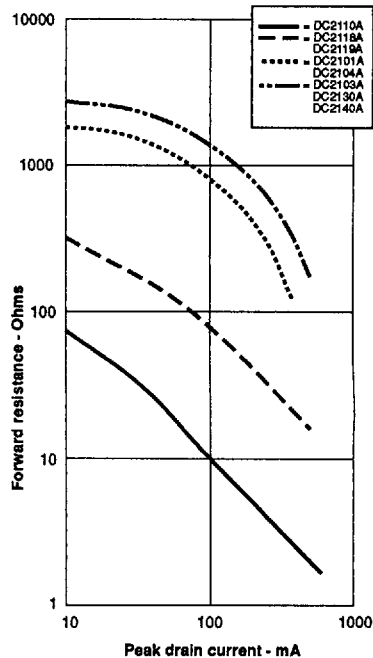
TYPE NUMBER	Outline No.	$V_R$ min.	$R_F$ max. (@ 100mA)	$C_d$ max. (TOTAL)	Lifetime $\tau_G$ (typ)	$R_{th}$
		V	Ohms	pF	(nS)	$^{\circ}C/W$
DC2110A	00	50	2.0 (@ 20mA)	0.4	5	50
DC2110B	39	50	2.0 (@ 20mA)	0.4	5	50
DC2110C	04	50	2.0 (@ 20mA)	0.4	5	50
DC2110G	90	50	2.0 (@ 20mA)	0.4	5	50
DC2118A	00	100	1.0	0.4	50	30
DC2118B	39	100	1.0	0.4	50	30
DC2118C	04	100	1.0	0.4	50	30
DC2118G Flanged end is positive	90	100	1.0	0.4	50	30
DC2119A	00	100	1.0	0.4	50	30
DC2119B	39	100	1.0	0.4	50	30
DC2119C	04	100	1.0	0.4	50	30
DC2119G Flanged end is negative	90	100	1.0	0.4	50	30



Typical reverse resistance of DC2130/3/5A as a function of peak r.f. voltage.



Typical variation of forward resistance as a function of d.c. bias.



Rise time (10% - 90%) of r.f. waveform when shunt diode is switching off - i.e. from low to high Impedance, as a function of drain current (typical values).