

PACKAGED DEVICES

High Power Gunn Diodes DC1200 Series

- Low cost
- High reliability
- Output power up to 500 mW available
- Custom devices available

MARCONI CKT TECHNOLOGY

30E D

5783442 0001688 5

T-07-11

HIGH POWER GUNN DIODES

Polarity: The heat sink is negative. The diode will be destroyed if the polarity is reversed. A low impedance constant voltage supply is required

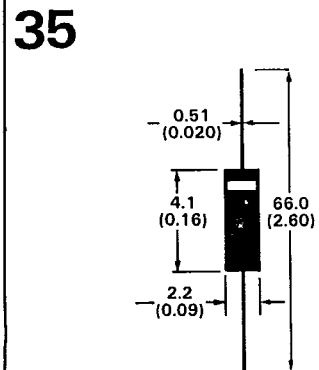
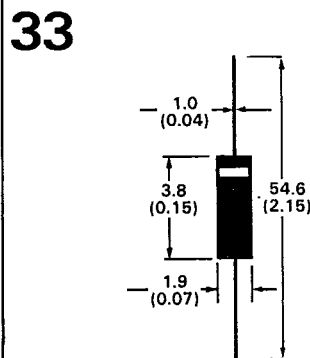
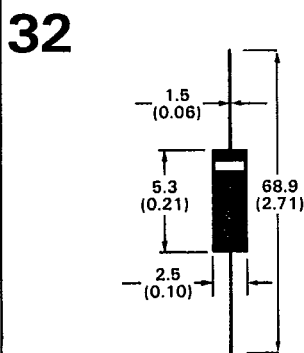
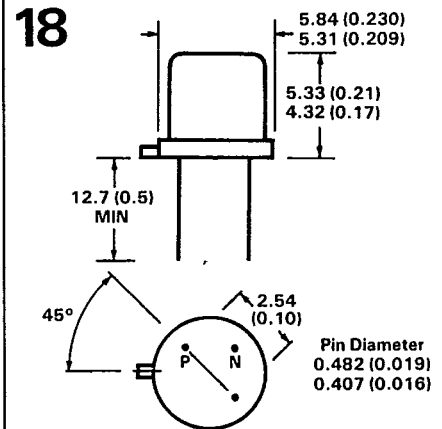
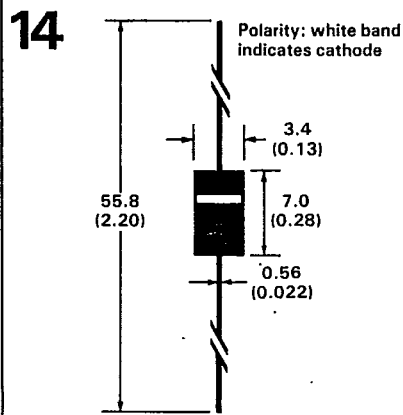
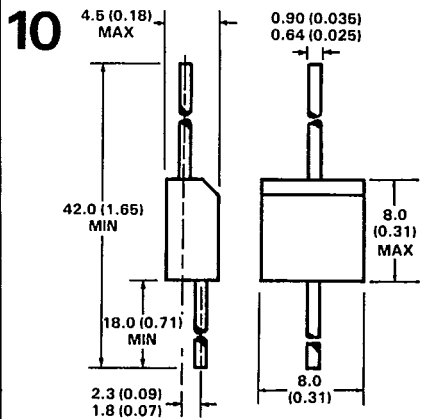
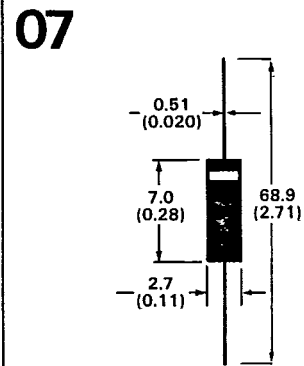
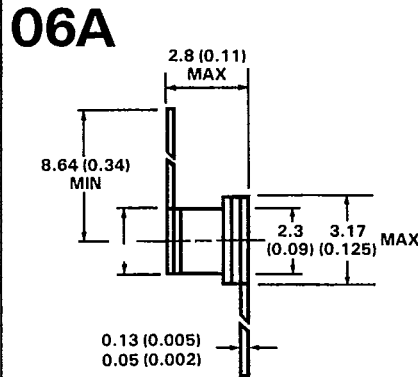
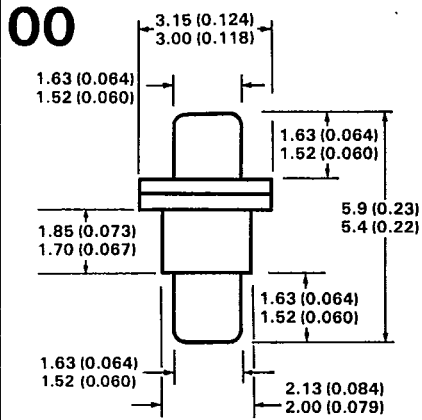
Maximum operating voltage V_O (V)		Notes
DC1253, DC1283	16	—
DC1251, DC1281	10	—
DC1252, DC1282	8	—
Reverse voltage, i.e. top flange negative V_R (V)	1	—
Operating temperature range (stud) T_C (°C)	-20 to +70	4 and 5
Storage temperature range T_{stg} (°C)	-55 to +150	—

Type no.	Outline no. see page 18-19	Frequency band (GHz) (note 1)	Minimum output power (mW) (note 2)	Typical operating voltage (V)	Typical operating current (mA) (note 3)
DC1253F	00	4-8	50	14	400
DC1253G	00	4-8	100	14	600
DC1253H	00	4-8	200	14	900
DC1283F	40	4-8	50	14	400
DC1283G	40	4-8	100	14	600
DC1283H	40	4-8	200	14	600
DC1251F	00	8-12	50	10	300
DC1251G	00	8-12	100	10	400
DC1251H	00	8-12	200	10	800
DC1251J	00	8-12	300	10	1200
DC1251K	00	8-12	400	10	1600
DC1251L	00	8-12	500	10	2000
DC1281F	40	8-12	50	10	200
DC1281G	40	8-12	100	10	400
DC1281H	40	8-12	200	10	800
DC1281J	40	8-12	300	10	1200
DC1252F	00	12-18	50	7.0	400
DC1252G	00	12-18	100	7.0	600
DC1252H	00	12-18	200	7.0	900
DC1252J	00	12-18	300	7.0	1300
DC1282F	40	12-18	50	6.5	400
DC1282G	40	12-18	100	6.5	600
DC1282H	40	12-18	200	6.5	900
DC1275F	86	18-26	50	6.0	500
DC1275G	86	18-26	100	6.0	700
DC1275H	86	18-26	200	6.0	1000
DC1276F	106	26-40	50	5.0	700
DC1276G	106	26-40	100	5.0	1200

NOTES

- 1 The required operating frequency within this band must be specified when ordering. The standard test frequencies within the three frequency bands are 6.0, 9.5 and 15.0 GHz respectively. Diodes operating over 18-26 GHz and 26-40 GHz do not have a standard test frequency.
- 2 The diodes are tested in a half wavelength low Q coaxial cavity. Diodes can be tested in other cavities to special order.
- 3 The power supply must be capable of supplying an adequate saturation current. A value of 1.5 times the operating current as a maximum power supply rating will give an adequate margin.
- 4 An adequate heat sink must be provided so that the rated stud temperature is not exceeded.
The temperature coefficient of frequency for a low Q coaxial cavity is typically 1 MHz/°C. In a high Q cavity it is almost directly dependent on cavity expansion and in a waveguide cavity with a Q of about 200 the temperature coefficient of frequency will be about 300 KHz/°C.
The variation of power with temperature will depend initially on the relative change of the match of the diode to the cavity but a reduction of up to 3dB can be expected at +70°C.
- 5 Diodes for wider temperature ranges can be supplied to special order.

Dimensions in mm (inches)



PACKAGED DEVICES

MARCONI CKT TECHNOLOGY

30E D ■ 5783442 0001690 3 ■

5783519 MARCONI/ MICROWAVE PROD

02E 00021 D

T-91-20

PACKAGED DEVICES

Dimensions in mm (inches)		
<p>40</p> <p>3.15 (0.124) 3.00 (0.118)</p> <p>5.28 (0.208) 4.78 (0.188)</p> <p>3.48 U.N.C. 2A THREAD</p> <p>SCREWDRIVER SLOT</p>	<p>78</p> <p>9.39 (0.370) 8.64 (0.340)</p> <p>5.33 (0.210) 4.32 (0.170)</p> <p>0.432 (0.0170)</p> <p>8.12 (0.320) MIN</p> <p>5.08 (0.200)</p> <p>45°</p> <p>P N</p>	<p>86</p> <p>2.59 (0.102) 2.49 (0.098)</p> <p>4.3 (0.17)</p> <p>3.48 U.N.C. 2A THREAD</p> <p>SCREWDRIVER SLOT</p>
<p>106</p> <p>3.00 (0.118) 2.89 (0.114)</p> <p>3.7 (0.15) 3.5 (0.14)</p> <p>No. 3.48 UNC 2A Thread</p>	<p>119</p> <p>Ø2.4 (0.09)</p> <p>5.1 (0.20)</p> <p>Cathode Mark</p>	<p>120</p> <p>3.4 (0.13)</p> <p>Ø 1.6 (0.06)</p> <p>Cathode Mark</p>