CT3417-1.3

DC1800 Series

PLANAR DOPED BARRIER MULTIJUNCTION BEAM LEAD MIXER DIODES

Multijunction planar doped barrier beam lead mixer diodes are used in high frequency applications where parasitic capacitance and inductance need to be kept to a minimum, and are available in either mounted or unmounted configurations. The integrated die include ring quad,bridge quad, series pair and common anode/cathode pair outlines.

As mixers, these diodes offer good conversion loss at low local oscillator drive levels, without the need to bias the mixer, and have very high pulse burnout limits, thereby reducing, and in some applications negating, the need for limiter protection. These diodes also exhibit a close to carrier 1/f noise performance and temperature stability that is significantly better than that of gallium arsenide or silicon Schottky diodes.

FEATURES

- Low LO Drive Level (< 500µW)
- Excellent 1/f Noise
- Low Conversion Loss (< 6.0dB)
- Very Good Temperature Stability
- Very High Pulse Burn Out (>100W)
- Frequencies up to 26GHz

APPLICATIONS

Multijunction planar doped barrier beam lead mixer diodes are finding increasing applications in instrumentation, military, civil and marine radar and communication systems. In most systems these diodes can directly retrofit existing protected or unprotected gallium arsenide or silicon applications.

LIMITING CONDITIONS

Storage Temperature	-55°C to +150°C
Operating Temperature	-55°C to +150°C
Pulse Burn Out (Duty cycle 0.01%)	100W
CW Burn Out	0.5W

TYPICAL DC CHARACTERISTICS Tamb 25°C

TYPE NUMBER	DC1801	DC1802	DC1803	DC1804	DC1805	DC1806
Frequency	J Band	J Band	J Band	J Band	J Band	J Band
Forward Voltage (Vf) @ 100µA	350mV	350mV	350mV	350mV	350mV	350mV
Reverse Voltage (Vr) @ 100µA	2.5V	2.5V	2.5V	2.5V	2.5V	2.5V
R_T (10mA to 20mA)	13Ω	13Ω	13Ω	13Ω	13Ω	13Ω
C_j @ 0V	50fF	50fF	50fF	50fF	50fF	50fF
Outline	231	231	232	232	233	233

TYPICAL RF CHARACTERISTICS Tamb 25°C

Information not available at time of going to print. Please contact GPS for latest information.

EQUIVALENT CIRCUIT PARAMETERS

TYPE NUMBER	DC1801	DC1802	DC1803	DC1804	DC1805	DC1806
L_P	0.1 nH	0.1 nH	0.1 nH	0.1 nH	0.1 nH	0.1 nH
R_S	11Ω	11Ω	11Ω	11Ω	11Ω	11Ω
C_j	50 fF	50 fF	50 fF	50 fF	50 fF	50 fF
C_P	20 fF	20 fF	20 fF	20 fF	20 fF	20 fF