GaAs IMPATT DIODES

MI5001 – MI5022

Features

- Specified High Output Power
- High DC to Microwave Efficiency
- For Pulsed and CW Applications

Applications

- Oscillators
- Avionic Systems
- Electronic Warfare Systems
- Smart Antennas

Description

Microsemi's GaAs IMPATT diodes are fabricated utilizing low- dislocation epitaxial grown doping structures and with high-temperature metallization processes. The diodes have been designed to have high output power when measured in a critically coupled cavity at the frequency of operation. The M18 is the recommended package for MSC's IMPATT diodes due to its low thermal resistance and threaded stud at the cathode. The stud should be mounted in a substantial heatsink. Other ceramic packages are also available.

CW IMPATT Diodes (Specifications @ 25°C)

Part Number	Operating Frequency (GHz)	Min. P_O (Watts)	Min. V_{BR} @ 1 mA (V)	Typ. C_T (0 V) (pF)	Typ. V_{OP} (V)	Typ. I_{OP} (A)	Typ. Eff. (%)	Max. Θ °C/W	Pkg. Style
MI5022-18	9.5–10.2	3.5	30	20	45	0.40	20	12.0	M18

Pulsed IMPATT Diodes (Specifications @ 25°C)

Part Number	Operating Frequency (GHz)	Min. P_O (Watts)	Min. V_{BR} @ 1 mA (V)	Typ. C_T (0 V) (pF)	Typ. V_{OP} (V)	Typ. I_{OP} (A)	Typ. Eff. (%)	Max. Θ °C/W	Pkg. Style
MI5001-18	5.1–5.4	10[1]	70	80	85	1.0	12	8.0	M15
MI5003-18	9.1–9.6	15[1]	45	75	60	1.7	15	9.5	M18
MI5004-18	9.1–9.5	12[2]	35	42	55	1.2	18	9.5	M18

[1]Pulse width 0.5–10 μS; duty cycle: 0.5–5%.
[2]Pulse width 1–2 μS; duty cycle: 20–30%.

Notes:
IMPATT diodes are specified to operate at a customer designated fixed frequency within the operating frequency band as measured in a critically coupled cavity.
Total capacitance is specified at 1 MHz.
Test procedure for measuring thermal resistance is available on request.
Breakdown voltage is specified at 1 mA.

IMPORTANT: For the most current data, consult our website: ***www.MICROSEMI.com***
Specifications are subject to change. Consult factory for the latest information.

These devices are ESD sensitive and must be handled using ESD precautions.

These products are supplied with a RoHS complaint Gold finish.

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