

Features

- Designed for MRI Applications
- Anti-Parallel Self Bias Arrangement
- Low Magnetic Packaging
- RoHS* Compliant

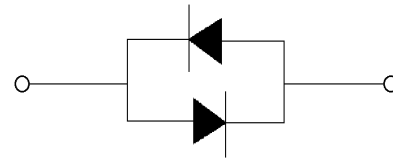
Applications

- Multi Market

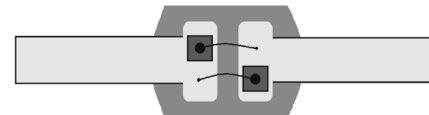
Description

The MADP-047668-x device is a passive switch element using silicon PIN diodes arranged in an anti-parallel configuration to facilitate efficient RF power handling. The PIN diodes become a high Q, R-C network under small signal conditions and perform as an effective rectifier or short-circuit under high RF signal to tune and detune the resonant MRI tank circuit. This device is available in a high thermal conductivity copper leaded package, or a 2.5 mm plastic encapsulated QFN.

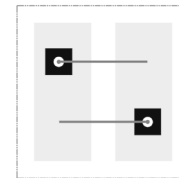
Functional Schematic



Internal Construction



ODS-1134



ODS-1441

Electrical Specifications: $T_A = +25^\circ\text{C}$

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage ¹	$I_R = 10 \mu\text{A}$	V	75	—	—
Forward Voltage	$I_F = 100 \text{ mA}$	V	—	1.0	1.2
Junction Capacitance	$V_R = 0 \text{ V}, 1 \text{ MHz}$	pF	—	1.0	—
Total Capacitance	$V_R = 0 \text{ V}, 1 \text{ MHz}$	pF	—	2.5	—
Series Resistance	$I_F = 100 \text{ mA}, 100 \text{ MHz}$	Ω	—	0.5	1.0
Lifetime	$I_F = 10 \text{ mA}, I_R = 6 \text{ mA}, 90\%$	ns	—	20	30
Thermal Resistance (ODS-1134)	Infinite Heat Sink ODS-1134 ODS-1441	$^\circ\text{C/W}$	—	20 35	—
Conductance	$V_R = 0 \text{ V}, f = 64 \text{ MHz}$	μS	—	—	40

1. Tested as single die only.

Ordering Information

Part Number	Package
MADP-047668-1134B0	Bulk
MADP-047668-1441BN	3000 Piece Reel

Absolute Maximum Ratings

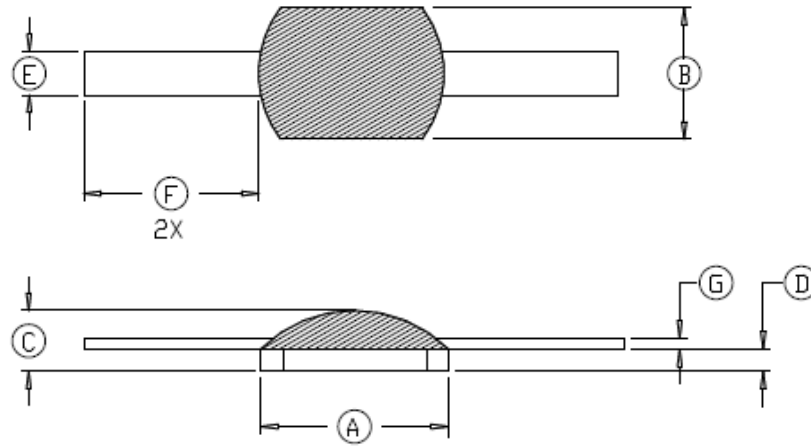
Parameter	Absolute Maximum
Breakdown Voltage	75 V
Forward Current	2 A
Junction Temperature	+175 $^\circ\text{C}$
Storage Temperature	-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$
Solder Temperature	+260 $^\circ\text{C}$ per JEDEC STD-J-20C

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* Restrictions on Hazardous Substances, compliant to current RoHS EU directive.

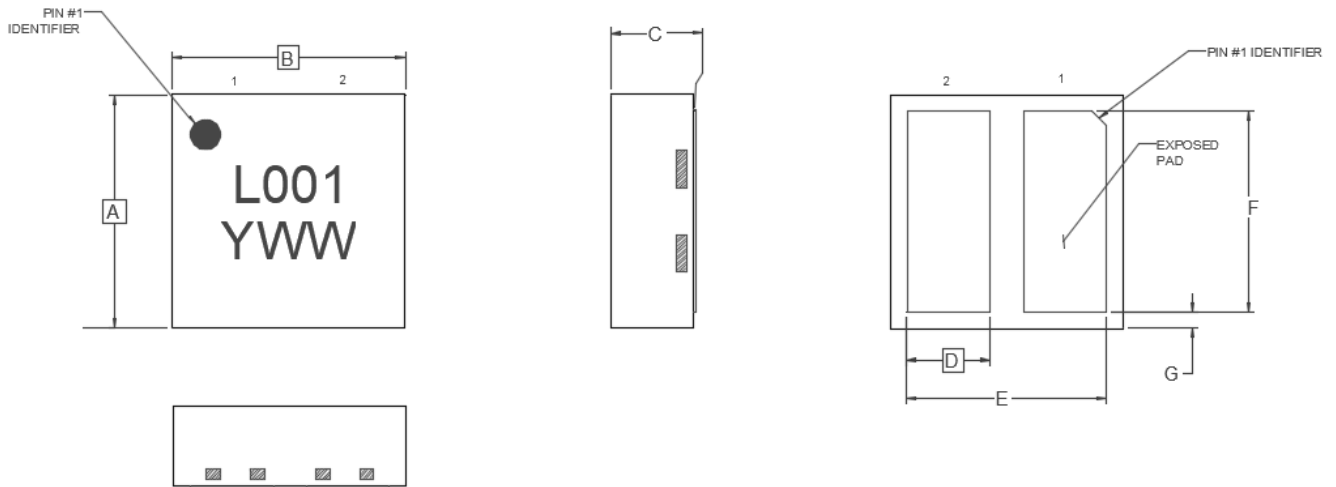
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Case Style 1134



Dimensions	Inches		mm	
	Min.	Max.	Min.	Max.
A	0.162	0.178	4.11	4.52
B	0.112	0.128	2.84	3.25
C	—	0.055	—	1.40
D	0.017	0.023	0.43	0.58
E	0.036	0.044	0.91	1.12
F	0.150	—	3.81	—
G	0.008	0.012	0.20	0.30

Case Style 1141



Dimensions	Inches		mm	
	Min.	Max.	Min.	Max.
A	0.0964	0.1004	2.45	2.55
B	0.0964	0.104	2.45	2.55
C	0.033	0.037	0.85	0.95
D	0.033	0.037	0.84	0.94
E	0.082	0.086	2.08	2.18
F	0.0846	0.0854	2.15	2.17
G	0.0062	0.0072	0.158	0.183

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