

Dual Pair Anti-Parallel Non-Magnetic PIN Diode

Rev. V5

Features

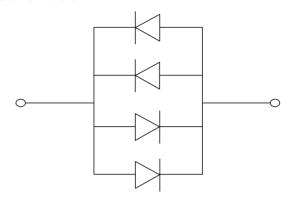
- · Designed for MRI Applications
- · Anti-Parallel Self Bias Arrangement
- Non-Magnetic Surface Mount Package
- SPC Process for Superior Parametric Repeatability
- RoHS* Compliant and 260°C Reflow Compatible

Description

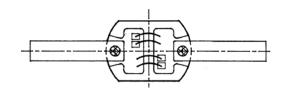
The MA44781 device acts as a passive switch using silicon PIN diodes in a surface mount package. There are two sets of two PIN diode pairs constructed in opposing configurations. The package is sealed with a non-conductive epoxy resin and is suitable for surface mount applications.

The MA44781 device is well suited for MRI passive switching applications. The PIN diodes become a high Q, R-C network under small signal and behave as an effective passive rectifier or short circuit under high RF signal to tune and de-tune the resonant MRI tank circuit. The anti-parallel doublet arrangement provides for more efficient RF power handling.

Schematic



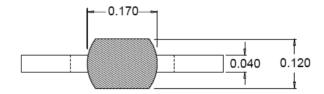
Internal Construction

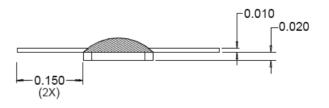


Ordering Information

Part Number	Package
MA44781	ODS-1134

Case Style 1134





All Dimensions shown as inches

^{*} Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.



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Electrical Specifications:

T_A = +25°C, Breakdown Voltage @ I_R = 10 μ A, V_b = 60 V Minimum

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Forward Voltage	I _F = 20 μA	V	0.500	_	0.780
Delta Forward Voltage	I _F = 20 μA (between each diodes)	mV		+/- 30	_
Junction Capacitance (per diode)	f = 1 MHz, V _R = -6.0 V	pF	0.15	_	0.50
Total Capacitance	V _R = 0 V	pF	1.5	_	3.5

Absolute Maximum Ratings¹

Parameter	Absolute Maximum	
Reverse Voltage	60 V	
Forward Current (Per Diode Pair) ²	2 A	
Total Power Dissipation ³	2 W	
Operating Temperature	-55°C to +125°C	
Storage Temperature	-55°C to +125°C	
Junction Temperature	+175°C	

^{1.} Operation of this device above any one of these parameters may cause permanent damage.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these devices.

^{2.} Total current per diode= I (rms) + I (dc) @ +25°C

Please refer to application note M538 for surface mounting instructions.

MA44781



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