

## Dual Anti-Parallel Non-Magnetic PIN Diode RoHS Compliant

V1

### Features

- Designed for MRI applications
- Anti-Parallel Self Bias Arrangement
- Non-Magnetic Surface Mount Package
- SPC Process for Superior Parametric Repeatability
- RoHS Compliant with 260°C reflow compatibility

### Description

The MA45471 device acts as a passive switch using silicon PIN diodes in a surface mount non-magnetic package. The PIN diode pair are arranged in an anti-parallel configuration and encapsulated with a non-conductive epoxy resin.

### Applications

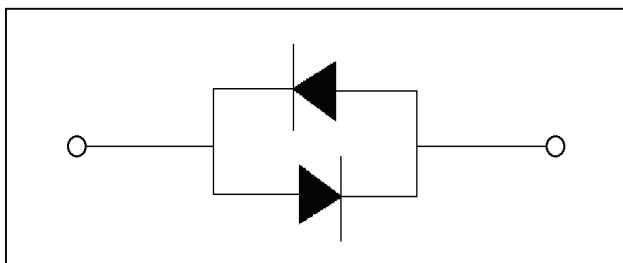
The MA45471 is well suited for MRI Passive switching applications. The PIN diodes become a high Q, R-C network under small signal and behave as an effective passive rectifier or short circuit under high RF Signal to tune and de-tune the resonant MRI tank circuit. The anti-parallel arrangement provides for more efficient RF power handling.

### Absolute Maximum Ratings @ $T_A=+25\text{ }^\circ\text{C}$ (Unless Otherwise Noted)<sup>1</sup>

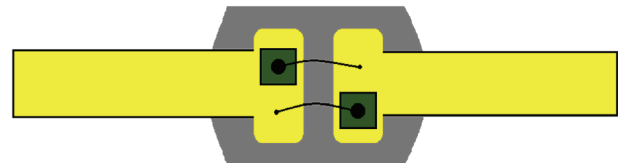
Parameter	Absolute Maximum
Reverse Voltage	75V
Forward Current	2A
Power Dissipation (per diode)	1.7 W
Operating Temperature	-55 °C to +125 °C
Storage Temperature	-55 °C to +125 °C
Junction Temperature	+175 °C

1. Operation of this device above any one of these parameters may cause permanent damage.
2. Please refer to application note [M538](#) for surface mounting instructions
3. Total current per diode= I (rms) + I (dc) @ +25C

### Schematic



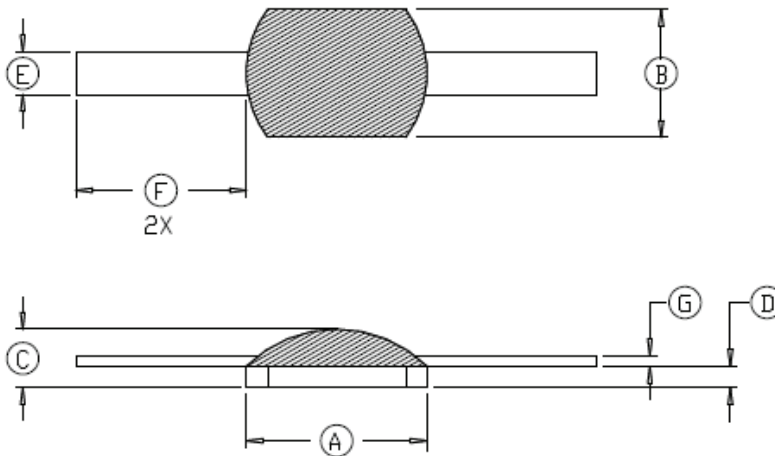
### Internal Construction



### Electrical Performance @ T<sub>A</sub>=+25 °C

Part Number	Junction Capacitance	Total Capacitance	Breakdown Voltage	Forward Voltage	Δ Forward Voltage	Carrier Lifetime
	f = 1MHz V <sub>r</sub> = 0V	f = 1MHz V <sub>r</sub> = 0V	I <sub>r</sub> = 10μA	I <sub>f</sub> = 20uA	I <sub>f</sub> = 20uA (between each diode)	I <sub>f</sub> = 10mA / I <sub>r</sub> = 6 mA
	(pF)	(pF)	(V)	(V)	(mV)	(nS)
<b>MA45471</b>	1.25 - 1.50	3.0 - 3.5	75	0.5 - 0.8	+/-20	200

### Case Style 1134



DIM.	INCHES		MILLIMETERS	
	MIN.	MAX.	MIN.	MAX.
A	.162	.178	4.11	4.52
B	.112	.128	2.84	3.25
C	-	.055	-	1.40
D	.017	.023	0.43	0.58
E	.036	.044	0.91	1.12
F	.150	-	3.81	-
G	.008	.012	0.20	0.30