# MA45471

## 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

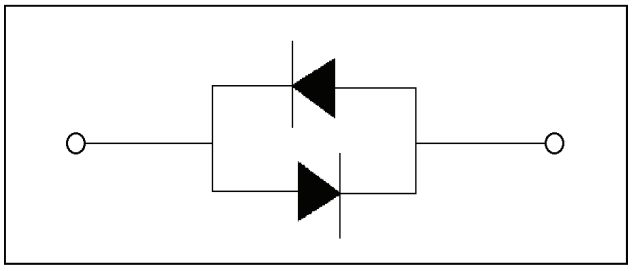
### Description

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.

### Schematic

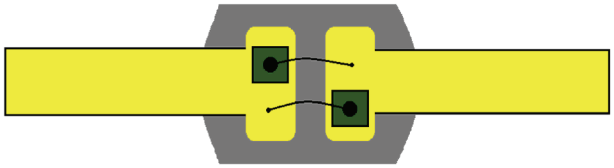


### Absolute Maximum Ratings @ $T_A$=+25 °C (Unless Otherwise Noted) [1]

| 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

### Internal Construction





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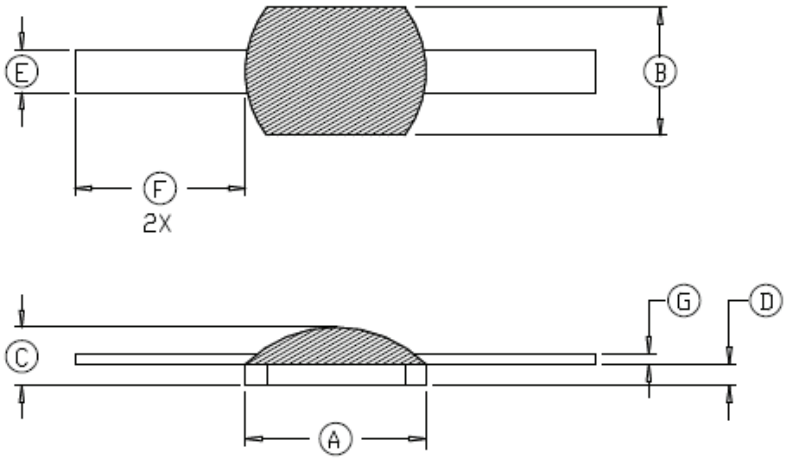
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### Electrical Performance @ $T_A$=+25 °C

| Part Number | Junction Capacitance | Total Capacitance | Breakdown Voltage | Forward Voltage | Δ Forward Voltage | Carrier Lifetime |
|---|---|---|---|---|---|---|
| | f =1MHz Vr = 0V | f = 1MHz Vr = 0V | Ir = 10µA | If = 20uA | If = 20uA (between each diode) | If =10mA / Ir =6 mA |
| | (pF) | (pF) | (V) | (V) | (mV) | (nS) |
| **MA45471** | 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 |



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