

Electrical Specifications @ +25 °C

| Parameter | Symbol | Condition | Unit Value |
|---|---------------|---|----------------------|
| Maximum Forward Voltage | V_F | $I_F = +100\text{mA}$ | $1.0V_{DC}$ |
| Minimum Reverse Voltage ¹ | V_R | $I_r = -10\mu\text{A}$ | $I - 800 I V_{DC}$ |
| Maximum Total Capacitance | C_T | $-100\text{V @ } 100\text{MHz}$ | 0.7pF |
| Maximum Series Resistance | R_S | $+100\text{mA @ } 100\text{MHz}$ | 0.8Ω |
| Minimum Parallel Resistance | R_P | $-10\text{V @ } 100\text{MHz}$ | $50\text{K } \Omega$ |
| Nominal Carrier Lifetime | τ_L | $+6\text{mA} / -10\text{mA @}$ $(50\% - 90\% \text{ Voltage})$ | $6.5 \mu\text{s}$ |
| Nominal I-Region Length | μm | - | $140 \mu\text{m}$ |
| Maximum Thermal Resistance | θ | $I_H = 1\text{A}, I_L = 10\text{mA},$ $T = 1\text{mS}$ | 13°C/W |
| Maximum Power Dissipation in Free Air | W | $I_F = +100\text{mA}$ | 4W |
| Maximum Power Dissipation with heatsink | P_D | $I_F = +100\text{mA}$ | 12W |

Note:

1. The minimum specified V_R (Reverse Voltage) is sourced and the resultant reverse leakage current, I_r , is measured to be $<10\mu\text{A}$

Environmental Screening Capability

MELF devices may be used in industrial or military applications and can be screened to meet the environmental requirements of MIL-STD-750, MIL-STD-202 as well as other military standards. The table below lists some of the MIL-STD 750 tests the device is designed to meet.

| MIL-STD-750 | | |
|--------------------------|--------------|--|
| Test | Method | Description |
| High Temperature Storage | 1031 | $+150^\circ\text{C}$, for 340 Hours |
| Temperature Shock | 1051 | -65°C to $+125^\circ\text{C}$, 20 Cycles |
| HTRB | 1038 | 80% of rated V_R , $+150^\circ\text{C}$, for 96 Hours |
| Moisture Resistance | 1021 | No Initial Conditioning, 85 % RH, $+85^\circ\text{C}$ |
| Gross Leak | 1071 Cond. E | Dye Penetrant Visual |
| Vibration Fatigue | 2046 | 20,000 G's, 60 Hz, x, y, z axis |
| Solderability | 2026 | Test Temperature = $+245^\circ\text{C}$ |

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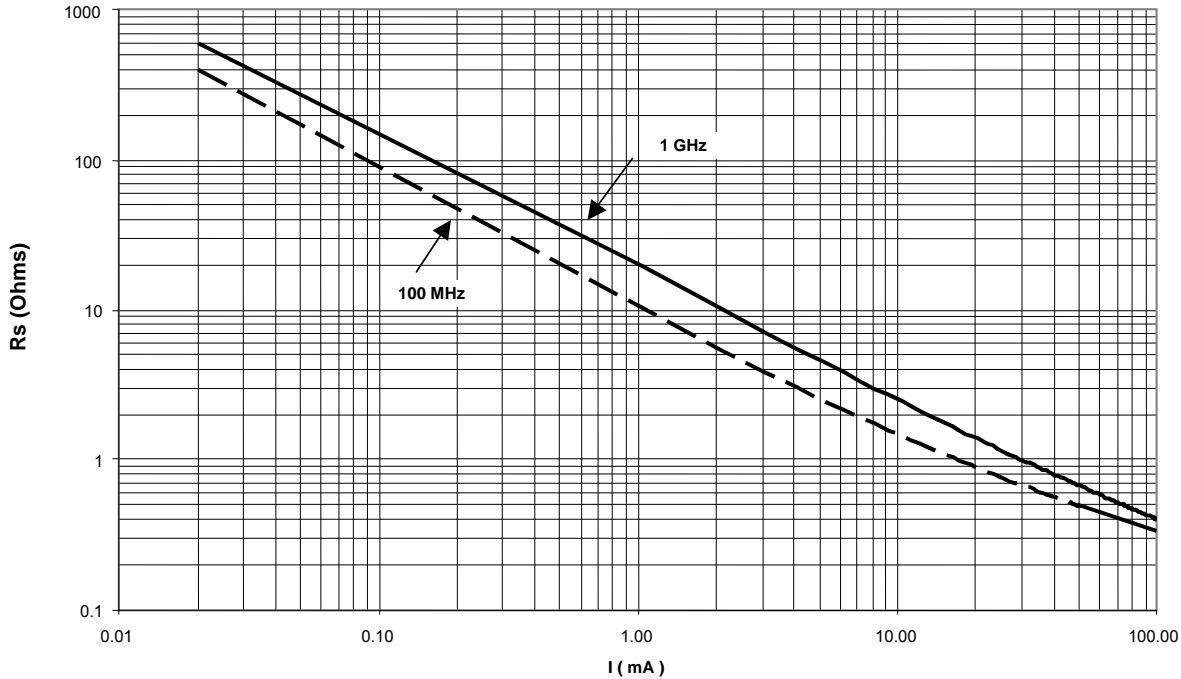
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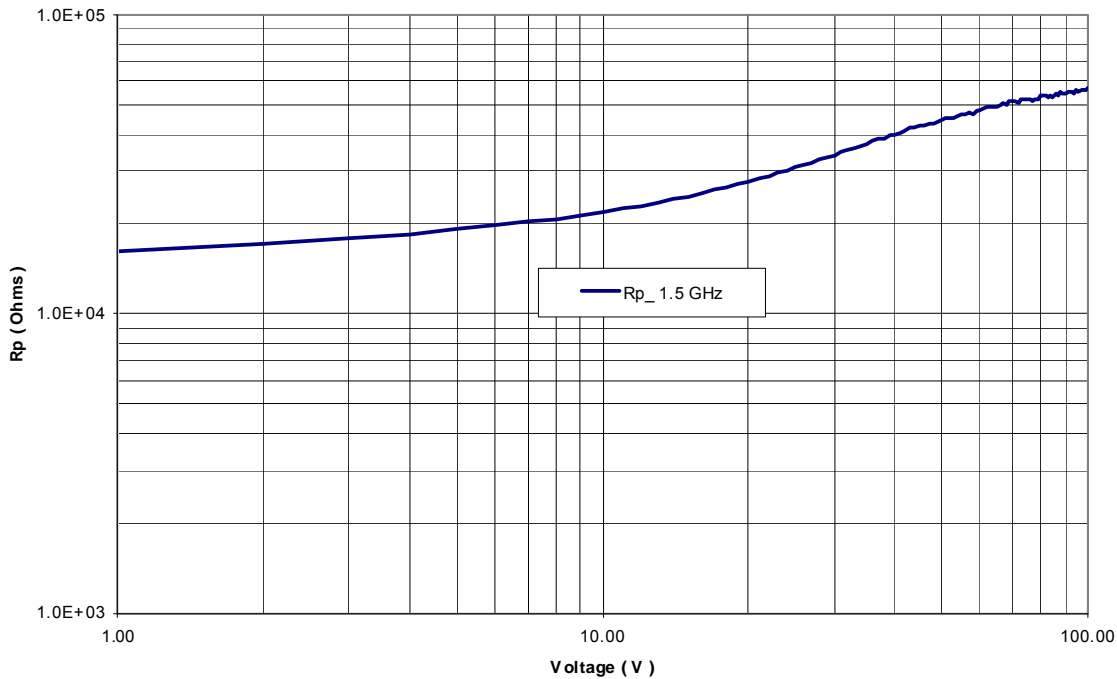
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Typical Electrical Performance

MA4P7470F-1072T Rs vs I



MA4P7470F-1072T Rp vs Voltage



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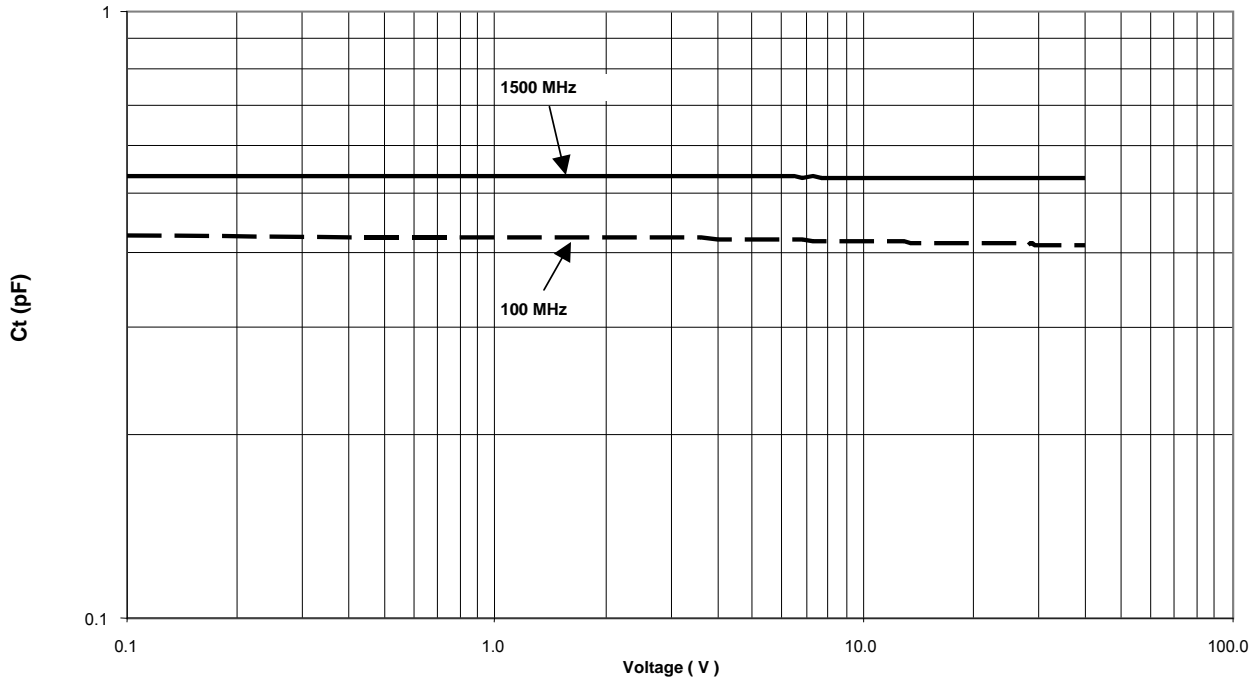
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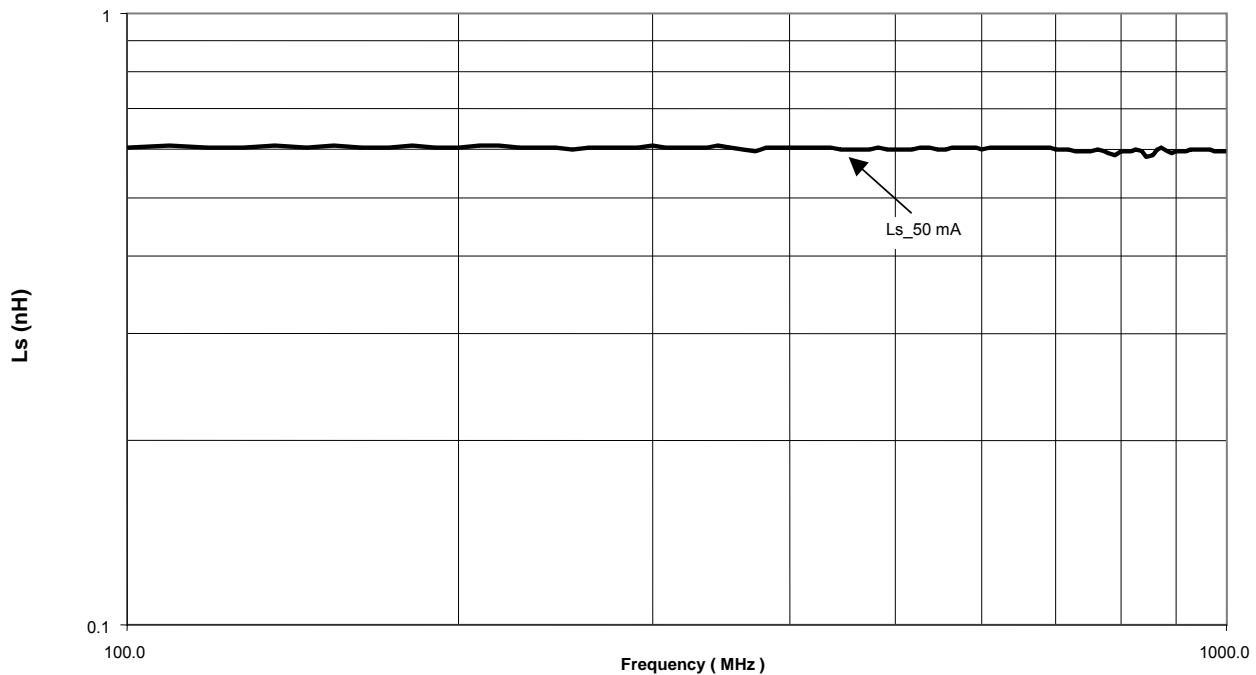
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Typical Electrical Performance

MA4P7470F-1072T Ct vs Voltage



MA4P7470F-1072T Ls vs Frequency



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Typical Non-Magnetic Performance

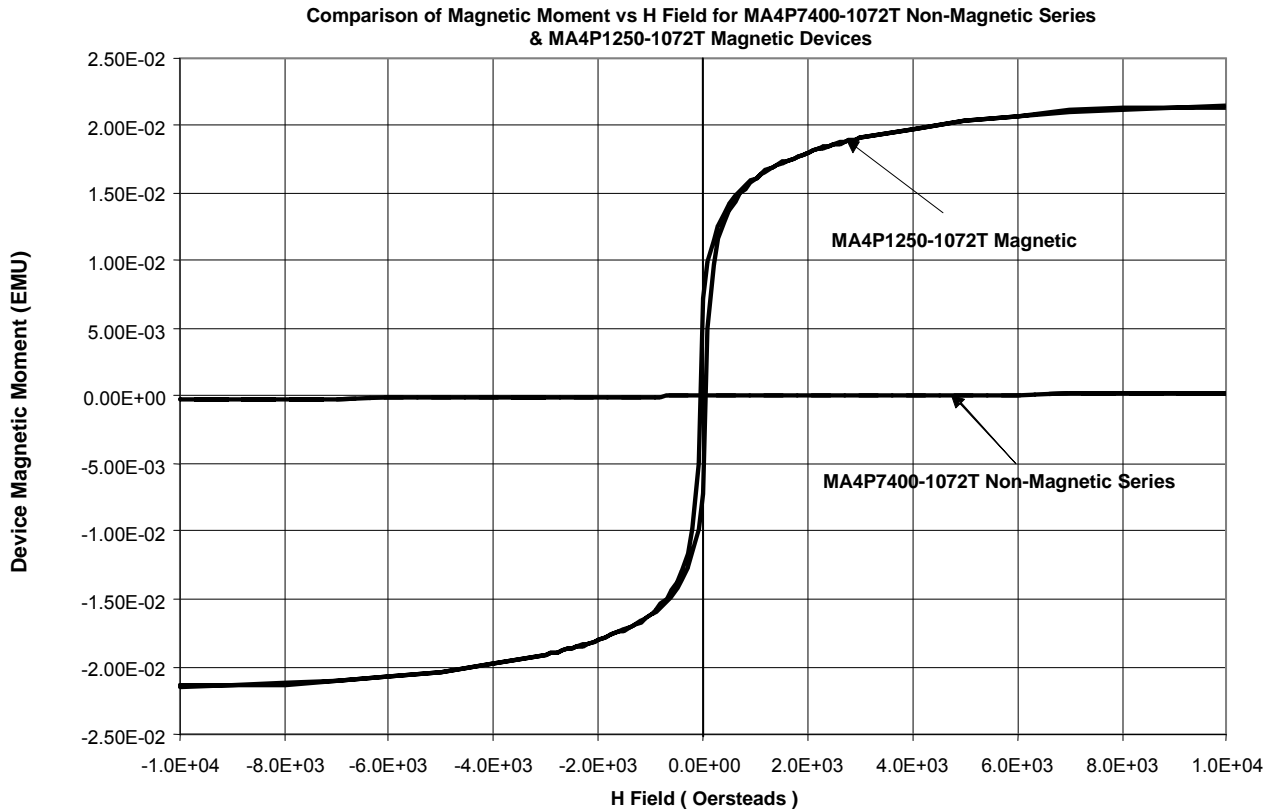


Table 1 - Typical Magnetic Properties of Non-Magnetic MA4P7470F-1072T Device vs. A Conventional Magnetic MA4P1250-1072T Device

| Magnetic Property | MA4P7470F-1072T Value | MA4P1250-1072T Value |
|--|-----------------------|-----------------------|
| Saturation Moment (EMU) @ H = H _{MAX} Oersteds | 2.3 x E ⁻⁴ | 2.1 x E ⁻² |
| Remanance Moment (EMU) @ H = 0 Oersteds | 4.2 x E ⁻⁸ | 7.1 x E ⁻³ |
| Coercivity (Oersteds) @ EMU = 0 Moment | 1 | 59.2 |

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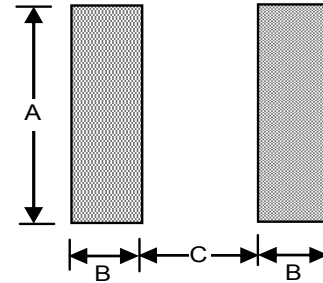
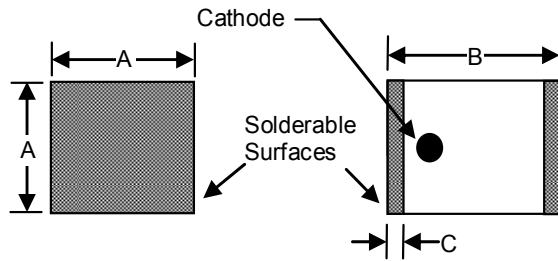
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1072 Package Dimensions

| Dimension | INCHES | | MM | |
|-----------|--------|-------|-------|-------|
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.080 | 0.095 | 2.032 | 2.413 |
| B | 0.115 | 0.135 | 2.921 | 3.429 |
| C | 0.008 | 0.030 | 0.203 | 0.762 |

1072 Circuit Pad Layout

| Dimension | Package Style 1072 | |
|-----------|--------------------|------|
| | inches | mm |
| A | 0.093 | 2.36 |
| B | 0.050 | 1.27 |
| C | 0.060 | 1.52 |



Ordering Information

| Part Number | Package |
|-----------------|---------------|
| MA4P7470F-1072T | Tape and Reel |

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