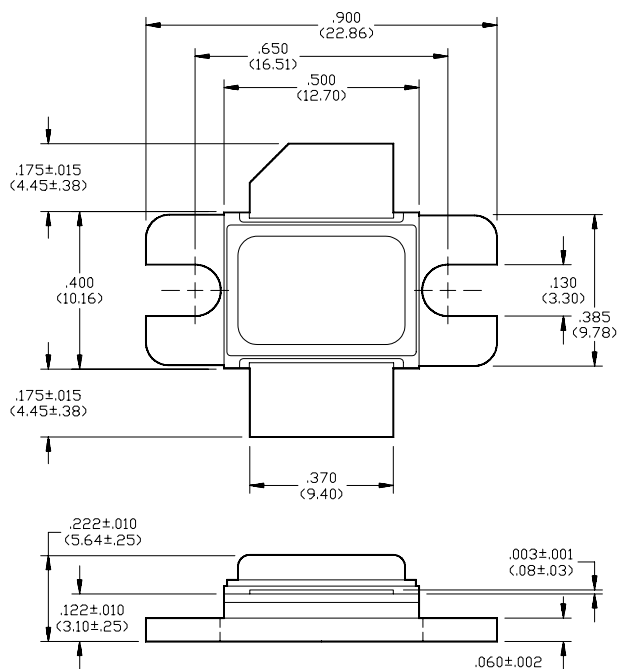


**MAPRST1214-150UF**  
**RADAR PULSED POWER TRANSISTOR**  
**150W, 1.2-1.4 GHz, 6ms Pulse Width, 25% Duty Cycle****FEATURES**

- \* NPN Silicon Microwave Power Transistor
- \* Common Base Configuration
- \* Broadband Class C Operation
- \* High Efficiency Interdigitated Geometry
- \* Diffused Emitter Ballasting Resistors
- \* Gold Metalization System
- \* Internal Input and Output Impedance Matching
- \* Hermetic Metal/Ceramic Package
- \* Typical Second Harmonic Level < -30dBc

**ABSOLUTE MAXIMUM RATINGS AT 25°C**

| Parameter                       | Symbol    | Rating      | Units |
|---------------------------------|-----------|-------------|-------|
| Collector-Emitter Voltage       | $V_{CES}$ | 70          | V     |
| Emitter-Base Voltage            | $V_{EBO}$ | 4.0         | V     |
| Collector Current (Peak)        | $I_C$     | 19.5        | A     |
| Total Power Dissipation @ +25°C | $P_{TOT}$ | 580         | W     |
| Junction Temperature            | $T_J$     | 200         | °C    |
| Storage Temperature             | $T_{STG}$ | -65 to +200 | °C    |

**OUTLINE DRAWING****ELECTRICAL CHARACTERISTICS AT 25°C**UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005"  
(MILLIMETERS ±.13MM)

| Parameter                           | Symbol     | Min | Max   | Units | Test Conditions                                                                     |
|-------------------------------------|------------|-----|-------|-------|-------------------------------------------------------------------------------------|
| Collector-Emitter Breakdown Voltage | $BV_{CES}$ | 70  | -     | V     | $I_C = 10 \text{ mA}$                                                               |
| Collector-Emitter Leakage Current   | $I_{CES}$  | -   | 4.0   | mA    | $V_{CE} = 40 \text{ V}$                                                             |
| Thermal Resistance                  | $R_{TH}$   | -   | 0.3   | °C/W  | $V_{CC} = 36 \text{ V}$ , $P_{in} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Output Power                        | $P_{OUT}$  | 150 | -     | W     | $V_{CC} = 36 \text{ V}$ , $P_{in} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Power Gain                          | $G_P$      | 7.4 | -     | dB    | $V_{CC} = 36 \text{ V}$ , $P_{in} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Gain Flatness                       | $\Delta G$ | -   | 1.25  | dB    | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Collector Efficiency                | $\eta_c$   | 45  | -     | %     | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Input Return Loss                   | RL         | 9   | -     | dB    | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Amplitude Pulse Droop               | Droop      | -   | 0.5   | dB    | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Load Mismatch Stability             | VSWR-S     | -   | 1.5:1 | -     | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |
| Load Mismatch Tolerance             | VSWR-T     | -   | 3:1   | -     | $V_{CC} = 36 \text{ V}$ , $P_{IN} = 27 \text{ W}$ , $F = 1.2, 1.3, 1.4 \text{ GHz}$ |

**BROADBAND TEST FIXTURE IMPEDANCE**

| F (MHz) | $Z_{IF} (\Omega)$ | $Z_{OF} (\Omega)$ |
|---------|-------------------|-------------------|
| 1200    | 1.7 - j1.8        | 2.0 - j2.3        |
| 1300    | 1.6 - j1.3        | 1.95 - j2.0       |
| 1400    | 1.4 - j1.0        | 1.8 - j1.85       |

