

**MAPRST1214-030UF**  
**RADAR PULSED POWER TRANSISTOR**  
**30W, 1.2-1.4 GHz, 6ms Pulse Width, 25% Duty Cycle**

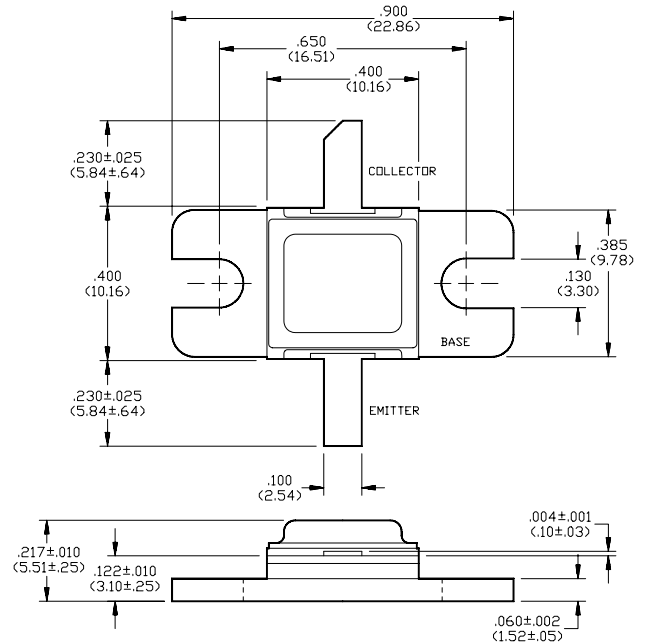
**FEATURES**

- \* 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	$V_{EBO}$	3.0	V
Collector Current (Peak)	$I_C$	4.8	A
Total Power Dissipation @ +25°C	$P_{TOT}$	145	W
Junction Temperature	$T_J$	200	°C
Storage Temperature	$T_{STG}$	-65 to +200	°C

**OUTLINE DRAWING**



UNLESS OTHERWISE NOTED, TOLERANCES ARE INCHES ±.005\* (MILLIMETERS ±.13MM)

**ELECTRICAL CHARACTERISTICS AT 25°C**

Parameter	Symbol	Min	Max	Units	Test Conditions
Collector-Emitter Breakdown Voltage	$BV_{CES}$	70	-	V	$I_C = 10 \text{ mA}$
Collector-Emitter Leakage Current	$I_{CES}$	-	2.0	mA	$V_{CE} = 40V$
Thermal Resistance	$R_{TH}$	-	1.2	°C/W	$V_{CC} = 36V, P_{in} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Output Power	$P_{OUT}$	30	-	W	$V_{CC} = 36V, P_{in} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Power Gain	$G_P$	7.3	-	dB	$V_{CC} = 36V, P_{in} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Gain Flatness	$\Delta G$	-	1.25	dB	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Collector Efficiency	$\eta_c$	45	-	%	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Input Return Loss	RL	9	-	dB	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Amplitude Pulse Droop	Droop	-	0.5	dB	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Load Mismatch Stability	VSWR-S	-	1.5:1	-	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$
Load Mismatch Tolerance	VSWR-T	-	3:1	-	$V_{CC} = 36V, P_{IN} = 5.3W, F = 1.2, 1.3, 1.4 \text{ GHz}$

**BROADBAND TEST FIXTURE IMPEDANCE**

F (MHz)	$Z_{IF} (\Omega)$	$Z_{OF} (\Omega)$
1200	6.7 - j6.9	14.3 + j2.4
1300	6.5 - j6.5	11.2 - j0.8
1400	6.3 - j4.5	7.2 - j0.1

