

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

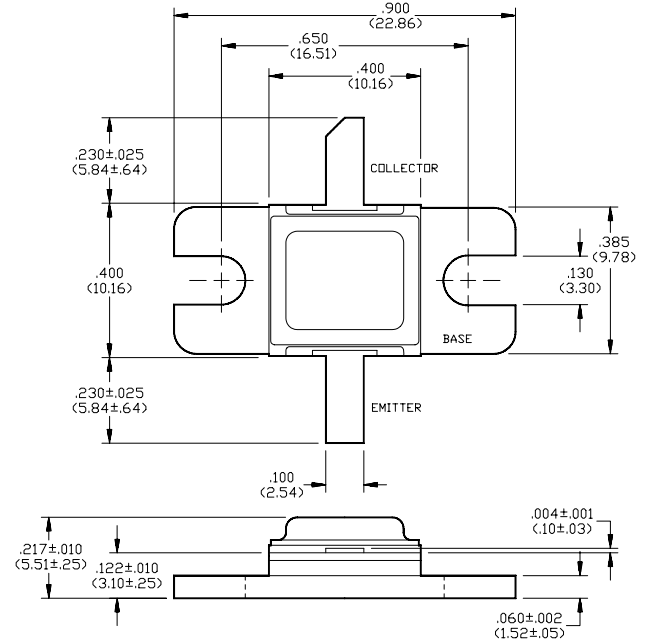
FEATURES

- * 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



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}	-	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	ΔG	-	1.25	dB	$V_{CC} = 36V$, $P_{IN} = 5.3W$, $F = 1.2, 1.3, 1.4 \text{ GHz}$
Collector Efficiency	η_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

