

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

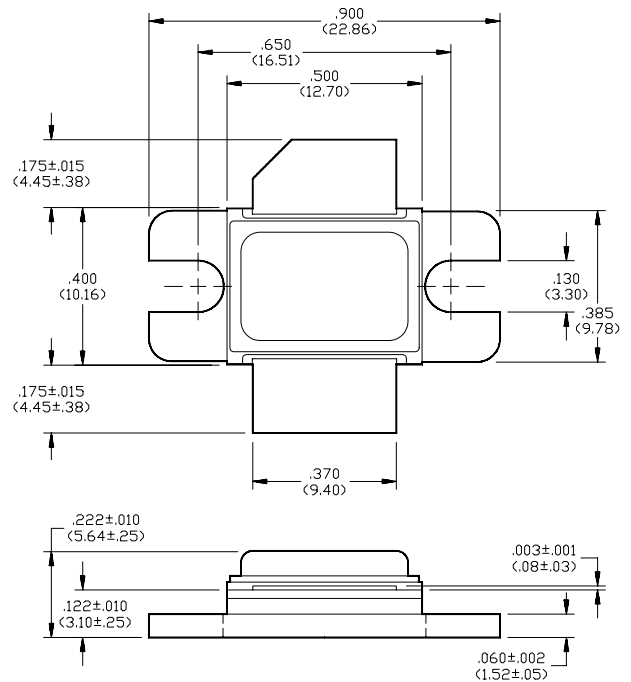
FEATURES

- * 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



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}	-	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	ΔG	-	1.25	dB	$V_{CC} = 36\text{V}$, $P_{IN} = 27\text{W}$, $F = 1.2, 1.3, 1.4 \text{ GHz}$
Collector Efficiency	η_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

