

NPN SILICON RF TRANSISTOR

DESCRIPTION:

The **ASI MRF555** is designed for Wideband large signal stages in the UHF frequency range.

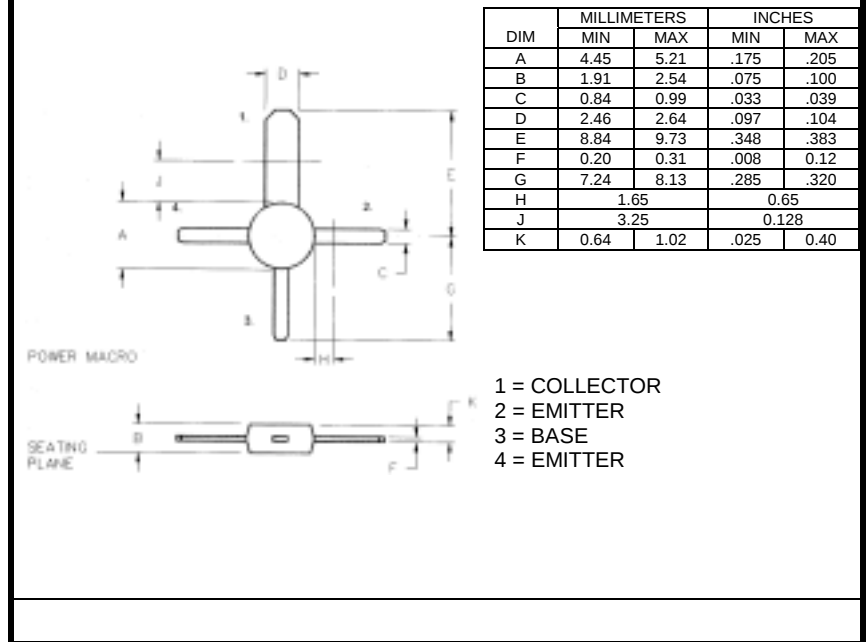
FEATURES:

- 12.5 V, 470 MHz.
- $P_{OUT} = 1.5\text{ W}$
- $G_P = 11\text{ min.}$
- $\eta = 60\%$ (Typ)

MAXIMUM RATINGS

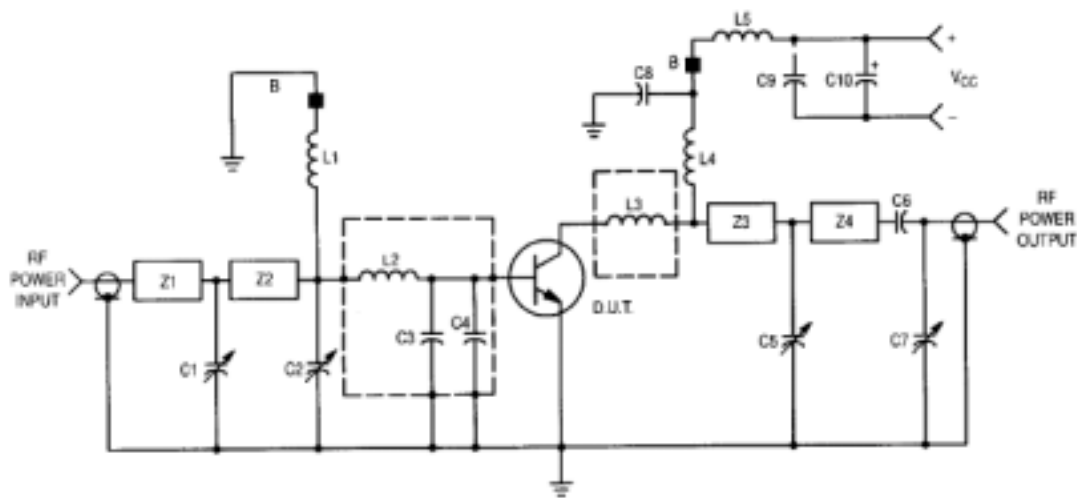
I_C	500 mA
V_{CBO}	30 V
P_{DISS}	3.0 W @ $T_C = 75^\circ\text{C}$
T_J	-65°C to $+200^\circ\text{C}$
T_{STG}	-65°C to $+150^\circ\text{C}$
θ_{JC}	41.7 $^\circ\text{C/W}$

PACKAGE STYLE



CHARACTERISTICS $T_C = 25^\circ\text{C}$

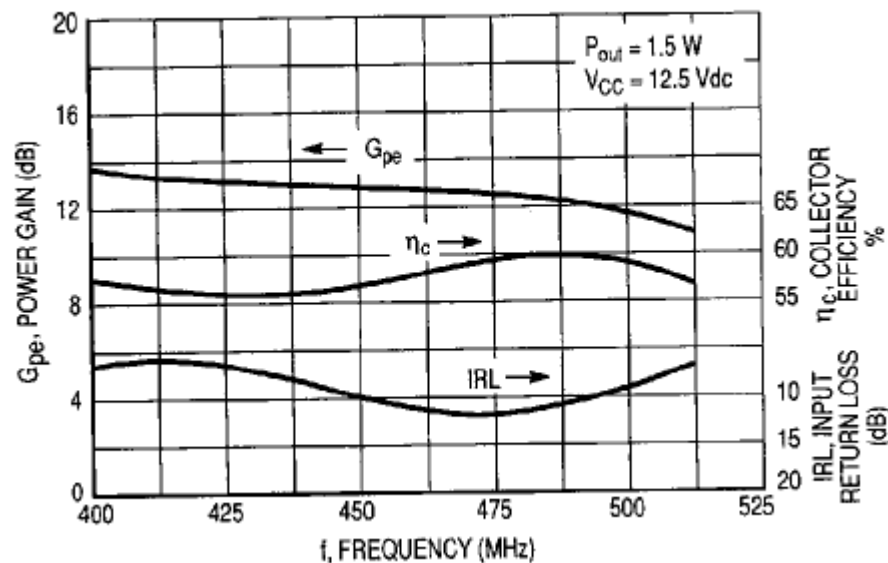
SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
BV_{CEO}	$I_C = 5.0\text{ mA}$	16			V
BV_{CES}	$I_C = 5.0\text{ mA}$	30			V
BV_{EBO}	$I_E = 0.1\text{ mA}$	3.0			V
I_{CES}	$V_{CE} = 15\text{ V}$			5.0	mA
h_{FE}	$V_{CE} = 5.0\text{ V}$ $I_C = 100\text{ mA}$	50		200	---
C_{CB}	$V_{CB} = 10\text{ V}$ $f = 1.0\text{ MHz}$			5.5	pF
G_{PE}	$V_{CE} = 12.5\text{ V}$ $P_{OUT} = 1.5\text{ W}$ $f = 470\text{ MHz}$	11	12.5		dB
η		50	60		%
ψ		10:1			---



C1, C2, C5, C7 — 0.8–8.0 pF Johanson Gigatrim™
 C3, C4 — 15 pF Clamped Mica, Mini-Underwood
 C6 — 27 pF Clamped Mica, Mini-Underwood
 C8 — 91 pF Clamped Mica, Mini-Underwood
 C9 — 68 pF Clamped Mica, Mini-Underwood
 C10 — 1.0 μ F, 25 V Tantalum
 B — Bead, Ferroxcube 56–590–65/3B
 PCB — 1/16" Glass Teflon, $\epsilon_r = 2.56$

L1, L4 — 5 Turns #21 AWG, 5/32" ID
 L2, L3 — 60 x 125 x 250 Mils Copper Tab on
 27 Mil Thick Alumina Substrate
 L5 — 7 Turns #21 AWG, 5/32" ID
 Z1 — 1.65 x 0.163" Microstrip, $Z_0 = 50 \Omega$
 Z2 — 0.85 x 0.163" Microstrip, $Z_0 = 50 \Omega$
 Z3 — 0.625 x 0.163" Microstrip, $Z_0 = 50 \Omega$
 Z4 — 1.35 x 0.163" Microstrip, $Z_0 = 50 \Omega$

*Fixed tuned for broadband response.



f Frequency MHz	$Z_{IN} (\Omega)$		$Z_{OL} (\Omega)^*$	
	$V_{CC} = 7.5 \text{ V}$	$V_{CC} = 12.5 \text{ V}$	$V_{CC} = 7.5 \text{ V}$	$V_{CC} = 12.5 \text{ V}$
	$P_{IN} = 100 \text{ mW}$	$P_{IN} = 50 \text{ mW}$	$P_{OUT} = 400 \text{ MHz} = 1.5 \text{ W}$ $P_{OUT} = 450 \text{ MHz} = 1.35 \text{ W}$ $P_{OUT} = 512 \text{ MHz} = 1.05 \text{ W}$	$P_{OUT} = 400 \text{ MHz} = 1.9 \text{ W}$ $P_{OUT} = 450 \text{ MHz} = 1.45 \text{ W}$ $P_{OUT} = 512 \text{ MHz} = 0.9 \text{ W}$
400	$2.9 - j2.7$	$1.9 - j3.1$	$18.0 - j13.4$	$12.2 - j19.7$
450	$2.2 - j0.8$	$2.6 - j4.0$	$21.6 - j9.9$	$20.2 - j18.6$
512	$3.5 - j1.2$	$2.6 - j2.6$	$20.1 - j1.0$	$23.4 - j23.0$

