

# 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.
- $P_{OUT} = 1.5 W$
- $G_P = 11$  min.
- $\eta = 60 \%$  (Typ)

**MAXIMUM RATINGS**

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

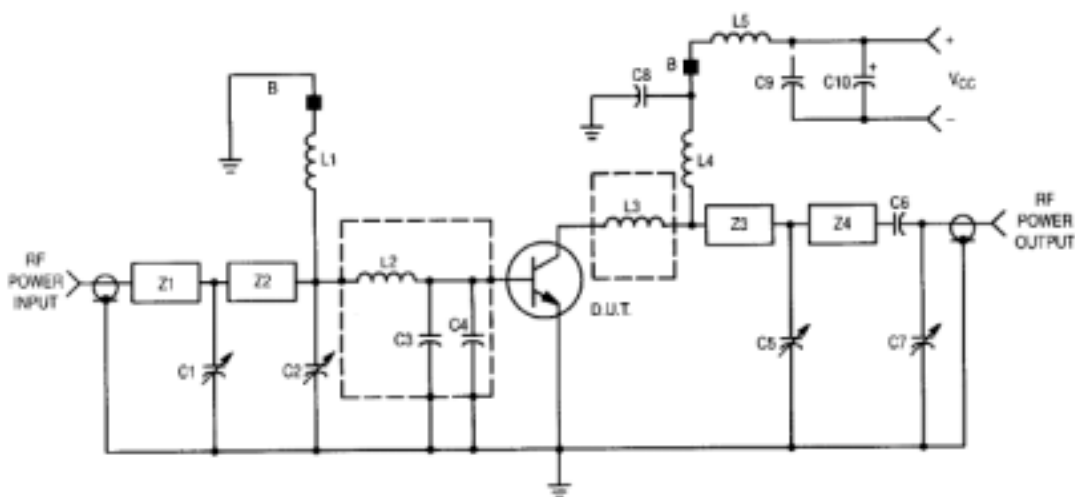
**PACKAGE STYLE**

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.45	5.21	.175	.205
B	1.91	2.54	.075	.100
C	0.84	0.99	.033	.039
D	2.46	2.64	.097	.104
E	8.84	9.73	.348	.383
F	0.20	0.31	.008	0.12
G	7.24	8.13	.285	.320
H	1.65		0.65	
J	3.25		0.128	
K	0.64	1.02	.025	0.40

1 = COLLECTOR  
 2 = EMITTER  
 3 = BASE  
 4 = EMITTER

**CHARACTERISTICS**  $T_C = 25^\circ C$ 

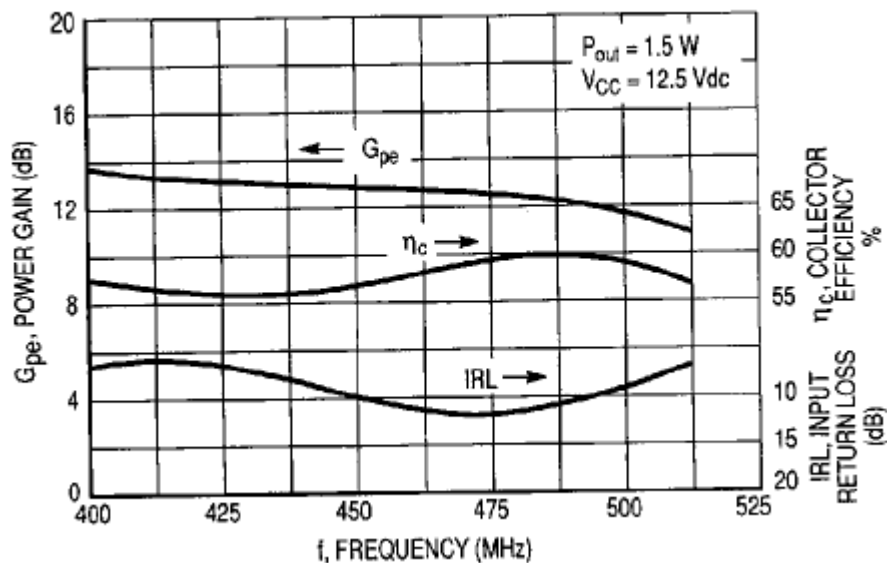
SYMBOL	TEST CONDITIONS	MINIMUM	TYPICAL	MAXIMUM	UNITS
$BV_{CEO}$	$I_C = 5.0$ mA	16			V
$BV_{CES}$	$I_C = 5.0$ mA	30			V
$BV_{EBO}$	$I_E = 0.1$ mA	3.0			V
$I_{CES}$	$V_{CE} = 15$ V			5.0	mA
$h_{FE}$	$V_{CE} = 5.0$ V $I_C = 100$ mA	50		200	---
$C_{CB}$	$V_{CB} = 10$ V $f = 1.0$ MHz			5.5	pF
$G_{PE}$	$V_{CE} = 12.5$ V $P_{OUT} = 1.5$ W $f = 470$ MHz	11	12.5		dB
$\eta$		50	60		%
$\psi$		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  $\mu$ 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	$Z_{IN} (\Omega)$		$Z_{OL} (\Omega)^*$	
	$V_{CC} = 7.5 V$	$V_{CC} = 12.5 V$	$V_{CC} = 7.5 V$	$V_{CC} = 12.5 V$
	$P_{IN} = 100 mW$	$P_{IN} = 50 mW$	$P_{OUT} = 400 MHz = 1.5 W$ $P_{OUT} = 450 MHz = 1.35 W$ $P_{OUT} = 512 MHz = 1.05 W$	$P_{OUT} = 400 MHz = 1.9 W$ $P_{OUT} = 450 MHz = 1.45 W$ $P_{OUT} = 512 MHz = 0.9 W$
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

