

Part Number: BLY93A  
 Description: BJTs, Si NPN Power HF

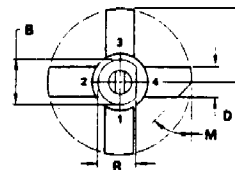
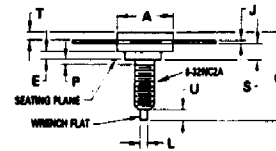
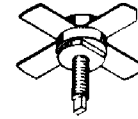
**The RF Line**

**NPN SILICON RF POWER TRANSISTOR**

... designed primarily for wideband large-signal amplifier stages in the 125-175 MHz frequency range.

- Specified 28 Volt, 175 MHz Characteristics –  
 Output Power = 40 Watts  
 Minimum Gain = 7.6 dB  
 Efficiency = 60%
- Characterized from 125 to 175 MHz
- Includes Series Equivalent Impedances

**40 W – 175 MHz  
 RF POWER  
 TRANSISTOR  
 NPN SILICON**



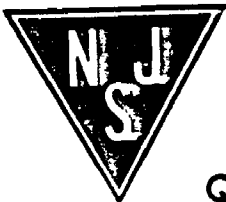
STYLE 1:  
 PIN 1. EMITTER  
 2. BASE  
 3. EMITTER  
 4. COLLECTOR

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	9.78	0.370	0.385
B	8.13	8.38	0.320	0.330
C	17.02	20.07	0.670	0.790
D	5.46	5.97	0.215	0.235
E	1.78	—	0.070	—
J	0.08	0.18	0.003	0.007
K	12.45	—	0.490	—
L	1.40	1.78	0.055	0.070
M	45° NOM		45° NOM	
P	—	1.27	—	0.050
R	7.59	7.80	0.299	0.307
S	4.01	4.52	0.158	0.178
T	2.11	2.54	0.083	0.100
U	2.49	3.35	0.098	0.132

**\*MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	35	V <sub>dc</sub>
Collector-Base Voltage	V <sub>CB</sub>	65	V <sub>dc</sub>
Emitter-Base Voltage	V <sub>EB</sub>	4.0	V <sub>dc</sub>
Collector Current – Continuous	I <sub>C</sub>	5.0	A <sub>dc</sub>
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	P <sub>D</sub>	60 342	Watts mW/°C
Operating and Storage Junction Temperature Range	T <sub>J, T<sub>stg</sub></sub>	-65 to +200	°C

\*Indicates JEDEC Registered Data.



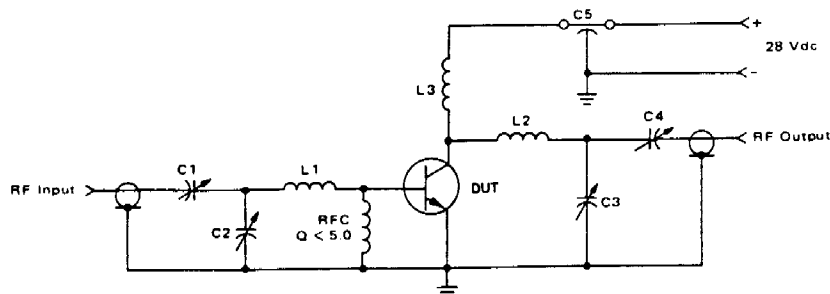
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**\*ELECTRICAL CHARACTERISTICS** ( $T_C = 25^\circ\text{C}$  unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Collector-Emitter Breakdown Voltage (Note 1) ( $I_C = 200 \text{ mAdc}, I_B = 0$ )	$V_{(BR)CEO}$	35	-	-	Vdc
Collector-Emitter Breakdown Voltage ( $I_C = 200 \text{ mAdc}, V_{BE} = 0$ )	$V_{(BR)CES}$	65	-	-	Vdc
Emitter-Base Breakdown Voltage ( $I_E = 10 \text{ mAdc}, I_C = 0$ )	$V_{(BR)EBO}$	4.0	-	-	Vdc
Collector Cutoff Current ( $V_{CB} = 30 \text{ Vdc}, I_E = 0$ )	$I_{CBO}$	-	-	1.0	mAdc
<b>ON CHARACTERISTICS</b>					
DC Current Gain ( $I_C = 500 \text{ mAdc}, V_{CE} = 5.0 \text{ Vdc}$ )	$h_{FE}$	5.0	-	-	-
<b>DYNAMIC CHARACTERISTICS</b>					
Output Capacitance ( $V_{CB} = 30 \text{ Vdc}, I_E = 0, f = 0.1 \text{ to } 1.0 \text{ MHz}$ )	$C_{ob}$	-	45	65	pF
<b>FUNCTIONAL TEST</b>					
Common Emitter Amplifier Power Gain (Figure 1) ( $P_{out} = 40 \text{ Watts}, V_{CE} = 28 \text{ Vdc}, f = 175 \text{ MHz}$ )	$G_{pE}$	7.6	8.1	-	dB
Collector Efficiency (Figure 1) ( $P_{out} = 40 \text{ Watts}, V_{CE} = 28 \text{ Vdc}, f = 175 \text{ MHz}$ )	$\eta$	60	-	-	%

Note 1: Pulsed through 25 mH inductor.  
 \*Indicates JEDEC Registered Data.

FIGURE 1 - 175 MHz TEST CIRCUIT SCHEMATIC



- C1, C2, C3, C4 ARCO 464 25-280 pF
- C5 0.1  $\mu\text{F}$
- L1 1" Straight #14 AWG
- L2 1 Turn #16 AWG, 1/4" I.D.
- L3 0.22  $\mu\text{H}$

