



Spectrum Devices Corporation

Semiconductor Engineering and Manufacturing

RF & MICROWAVE TRANSISTORS HF APPLICATIONS

HF28-25A

FEATURES:

- 30 MHz
- 28 Volts
- $P_{OUT} = 25W$ min, with 18 dB Gain
- Efficiency – 35%
- Common Emitter
- Class A/AB Operation
- **Improved Collector-Base Breakdown Voltage: 110 Volts Min.**
- **Replacement for MRF426A**



**0.380" DIAMETER
SOE STUD PACKAGE**

DESCRIPTION:

The HF28-25A is an epitaxial silicon NPN planar transistor designed primarily for Class A/AB RF amplifiers operating in the 2-30 MHz band. This device utilizes ballasted emitter resistors and improved metallization systems to achieve optimum load mismatch capability. The HF28-series products utilize the unique Spectrum Devices' Bipolar process which offers a 70% improvement in collector-base breakdown voltage, enhancing reliability while maintaining RF performance

ABSOLUTE MAXIMUM RATINGS: ($T_{CASE} = 25^{\circ}C$)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector to Base Voltage	110	V
V_{CEO}	Collector to Emitter Voltage	35	V
V_{EBO}	Emitter to Base Voltage	4.0	V
$I_C (max)$	Continuous Collector Current	5.0	A
P_o	Total Dissipation at 25°C Stud	60	W
T_J	Junction Temperature	+200	°C
T_{STG}	Storage Temperature	-65 to +150	°C

THERMAL DATA:

$R_{TH(J-C)}$	Thermal Resistance Junction-case	2.9	°C/W
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ELECTRICAL SPECIFICATIONS ($T_{CASE} = 25^{\circ}C$)

DC CHARACTERISTICS

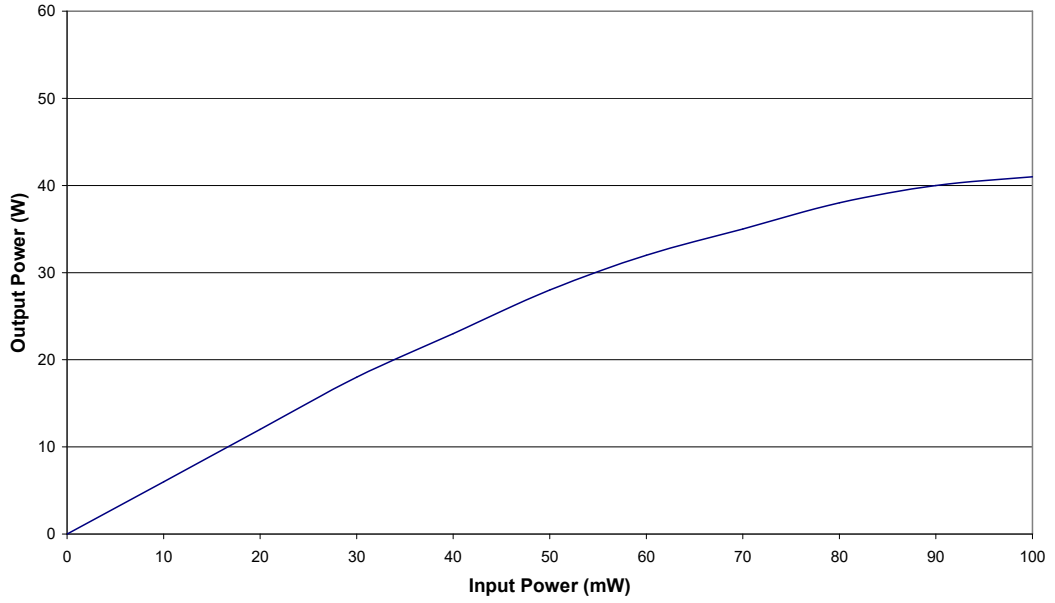
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CBO}	$I_C = 200\text{ mA}$ $I_E = 0\text{ mA}$	110	--	--	V
BV_{CES}	$I_C = 200\text{ mA}$ $V_{BE} = 0\text{ V}$	110	--	--	V
BV_{CEO}	$I_C = 200\text{ mA}$ $I_B = 0\text{ mA}$	35	--	--	V
BV_{EBO}	$I_E = 10\text{ mA}$ $I_C = 0\text{ mA}$	4.0	--	--	V
I_{CBO}	$V_{CB} = 30\text{ V}$ $I_E = 0\text{ mA}$	--	--	1	mA
h_{FE}	$V_{CE} = 5\text{ V}$ $I_C = 500\text{ mA}$	15	--	200	--

RF CHARACTERISTICS

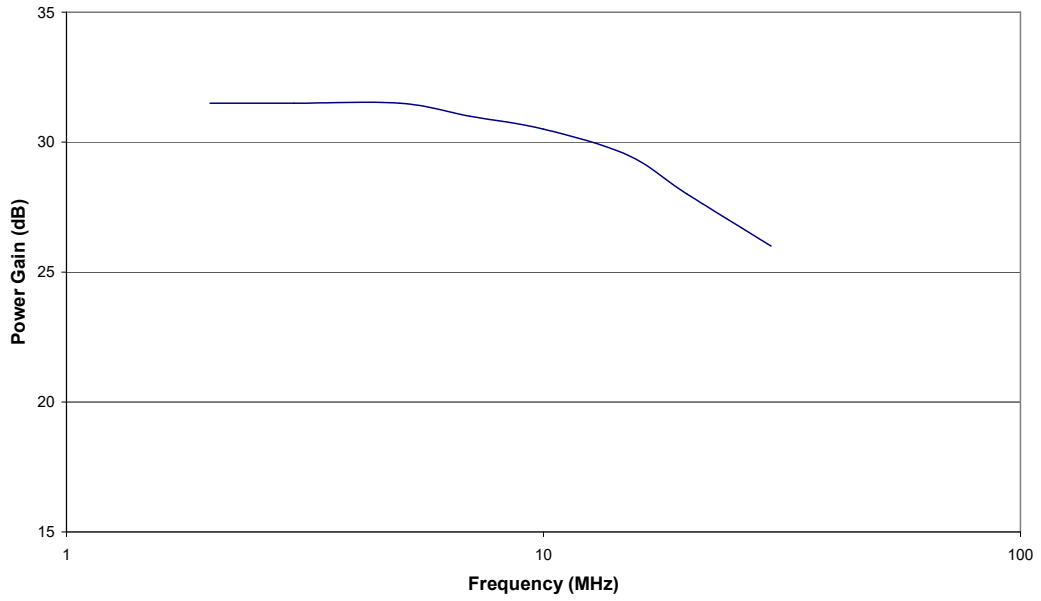
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$ $V_{CC} = 28\text{ V}$ $I_{CQ} = 25\text{ mA}$	25	--	--	W
G_P	$f = 30\text{ MHz}$ $V_{CC} = 28\text{ V}$ $I_{CQ} = 25\text{ mA}$	18	--	--	dB
n_c	$f = 30\text{ MHz}$ $V_{CC} = 28\text{ V}$ $I_{CQ} = 25\text{ mA}$	35	--	--	%
C_{OB}	$f = 30\text{ MHz}$ $V_{CC} = 28\text{ V}$ $I_{CQ} = 25\text{ mA}$	--	65	--	pF

TYPICAL DATA

Output Power vs Input Power
 $f = 30\text{MHz}$, $V_{CC} = 28\text{V}$, $I_{CQ} = 25\text{mA}$

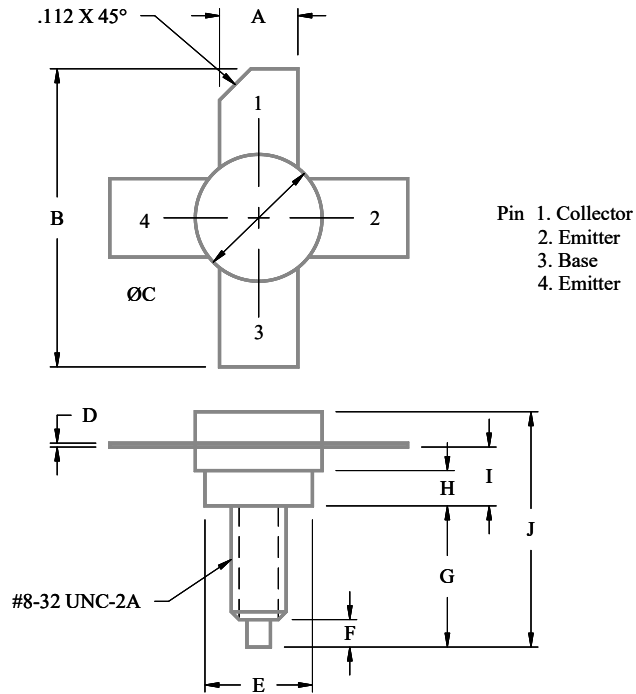


Power Gain vs Frequency
 $V_{CC} = 28\text{V}$, $I_{CQ} = 25\text{mA}$



PACKAGE MECHANICAL DATA

SOE-380-Stud



	Minimum Inches/mm	Maximum Inches/mm		Minimum Inches/mm	Maximum Inches/mm
A	.220/5.59	.230/5.84	G	.450/11.43	.490/12.45
B	.980/24.89		H	.090/2.29	.100/2.54
C	.370/9.40	.385/9.78	I	.155/3.94	.175/4.45
D	.004/0.10	.007/0.18	J		.750/19.05
E	.320/8.13	.330/8.38			
F	.100/2.54	.130/3.30			

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