



Spectrum Devices Corporation

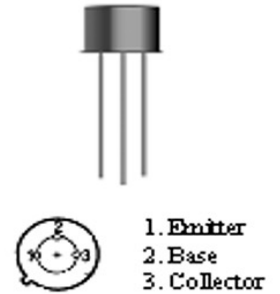
Semiconductor Engineering and Manufacturing

RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

VHF12-4

FEATURES:

- FM Class C Transistor
- 175 MHz
- Common Emitter
- $P_{out} = 4.0W$ Min. with 10 dB Gain
- Replacement for SD1127



TO-39

DESCRIPTION:

The VHF12-4 is a 12.5V epitaxial silicon NPN planar transistor designed primarily for VHF communications. The chip of this transistor is mounted on a beryllia pill to isolate the collector lead and ground the emitter lead to the package for high gain performance.

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

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	36	V
V_{CEO}	Collector-Emitter Voltage	18	V
V_{CES}	Collector-Emitter Voltage	36	V
V_{EBO}	Emitter-Base Voltage	4.0	V
I_C	Collector Current	.64	A
P_{DISS}	Total Power Dissipation	8.0	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	-65 to +200	$^{\circ}C$

THERMAL DATA:

$R_{TH(J-C)}$	Thermal Resistance Junction-case	21.9	$^{\circ}C/W$
---------------	----------------------------------	------	---------------

ELECTRICAL SPECIFICATIONS ($T_{CASE} = 25^{\circ}C$)

DC CHARACTERISTICS

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	$I_C = 5\text{ mA}$ $V_{BE} = 0\text{ V}$	36	--	--	V
BV_{CEO}	$I_C = 10\text{ mA}$ $I_B = 0\text{ mA}$	18	--	--	V
BV_{EBO}	$I_E = 1\text{ mA}$ $I_C = 0\text{ mA}$	4.0	--	--	V
I_{CBO}	$V_{CB} = 15\text{ V}$ $I_E = 0\text{ mA}$	--	--	25	mA
h_{FE}	$V_{CE} = 5.0\text{ V}$ $I_C = 50\text{ mA}$	5.0	--	--	--

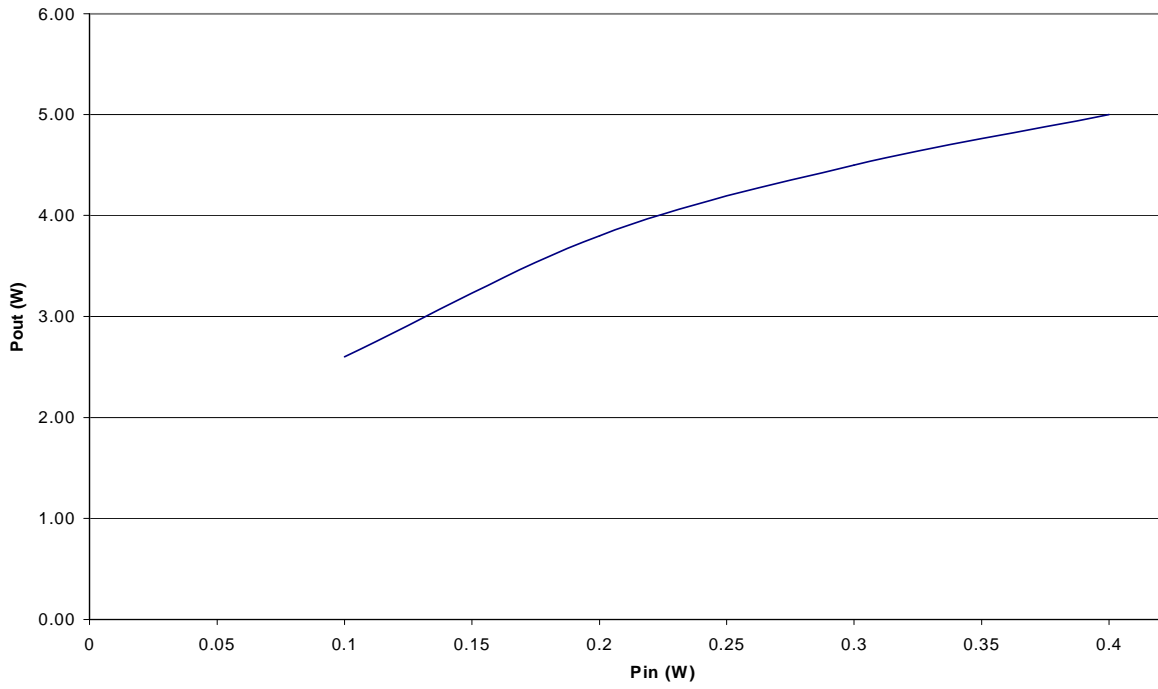
RF CHARACTERISTICS

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 175\text{ MHz}$ $V_{CE} = 12.5\text{ V}$	4.0	--	--	W
G_P	$f = 175\text{ MHz}$ $V_{CE} = 12.5\text{ V}$	10.0	12.0	--	dB
C_{OB}	$f = 1\text{ MHz}$ $V_{CB} = 15\text{ V}$ $I_E = 0$	--	--	20.0	pF

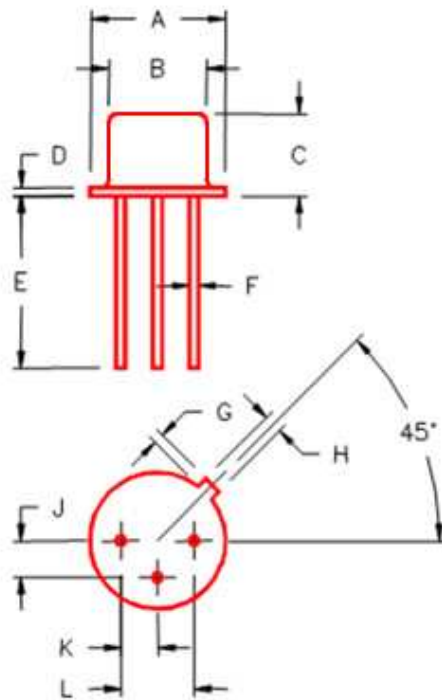
TEST CIRCUIT – CLASS C, 30 MHz

TYPICAL CHARACTERISTICS

Power Output vs Power Input



PACKAGE MECHANICAL DATA



	MINIMUM INCHES/MM	MAXIMUM INCHES/MM		MINIMUM INCHES/MM	MAXIMUM INCHES/MM
A	.350/8,89	.370/9,40	J	.095/2,41	.105/2,67
B	.315/8,00	.335/8,51	K	.095/2,41	.105/2,67
C	.240/6,10	.260/6,60	L	.190/4,83	.210/5,33
D	.015/0,38	.045/1,14			
E	.500/12,70				
F	.016/0,41	.019/0,48			
G	.029/0,74	.040/1,02			
H	.028/0,71	.034/0,86			

Visit our website at www.spectrumdevices.com or contact our facility directly at Spectrum Devices Corp., 2880 Bergey Road, Suite C, Hatfield, PA 19440. Phone 215-997-7870 or FAX 215-997-7828

DISCLAIMER

Spectrum Devices Corporation reserves the right to change, without notice, the specifications and information contained herein. Spectrum Devices Corporation believes the information contained within this data sheet to be accurate and reliable. However, no responsibility is assumed by Spectrum Devices Corporation for its use or for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Spectrum Devices Corporation. Spectrum Devices Corporation makes no warranty, representation, or guarantee regarding the suitability of its products for any particular purpose. “Typical” parameters are the average values expected by Spectrum Devices Corporation and are provided for information purposes only. These values can and do vary in different applications, and actual performance can vary over time. All operating parameters should be validated by customer’s technical personnel for each application.

Life Support Applications

These products are not designed, intended, or authorized for use in applications intended for surgical implant or to support or sustain life, in which the failure of the Spectrum Devices Corporation product could result in personal injury or death. Spectrum Devices Corporation customers using or selling these products in such applications do so at their own risk and agree to indemnify Spectrum Devices Corporation from any damages resulting from improper use or sale.

Visit our website at www.spectrumdevices.com or contact our facility directly at
Spectrum Devices Corp., 2880 Bergey Road, Suite C, Hatfield, PA 19440.
Phone 215-997-7870 or FAX 215-997-7828