



Spectrum Devices Corporation

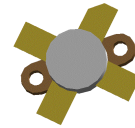
Semiconductor Engineering and Manufacturing

RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

VHF12-10

FEATURES:

- 175 MHz
- 12.5 Volts
- Common Emitter
- $P_{out} = 10W$ Min. with 10 dB Gain
- **Replacement for SD1143-01**



**0.380" DIAMETER
SOE PACKAGE**

DESCRIPTION:

The VHF12-10 is a 12.5V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. It withstands very high VSWR under operating conditions.

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	Device Current	2.0	A
P_{DISS}	Power Dissipation	20	W
T_J	Junction Temperature	+200	$^{\circ}C$
T_{STG}	Storage Temperature	-65 to +150	$^{\circ}C$

THERMAL DATA:

$R_{TH(J-C)}$	Thermal Resistance Junction-case	8.75	$^{\circ}C/W$
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ELECTRICAL SPECIFICATIONS ($T_{CASE} = 25^{\circ}C$)

DC CHARACTERISTICS

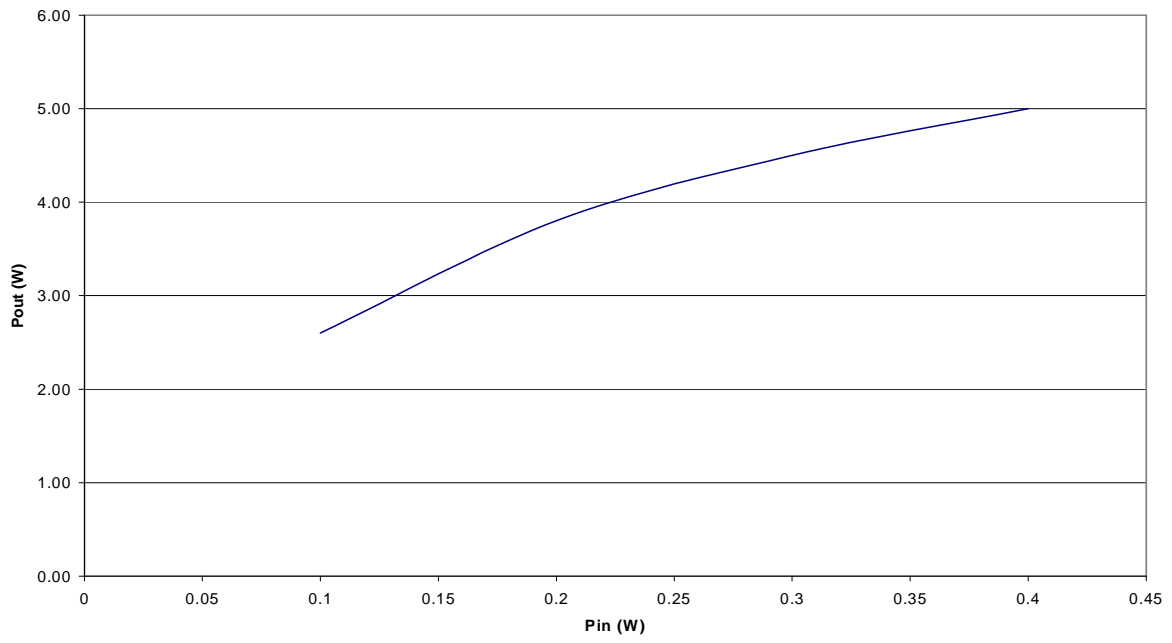
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	$I_C = 50\text{ mA}$ $V_{BE} = 0\text{ V}$	36	--	--	V
BV_{CEO}	$I_C = 15\text{ mA}$ $I_B = 0\text{ mA}$	18	--	--	V
BV_{EBO}	$I_E = 2.5\text{ mA}$ $I_C = 0\text{ mA}$	4.0	--	--	V
I_{CES}	$V_{CE} = 15\text{ V}$ $I_E = 0\text{ mA}$	--	--	2	mA
h_{FE}	$V_{CE} = 5\text{ V}$ $I_C = 250\text{ mA}$	5	--	200	--

RF CHARACTERISTICS

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 175\text{ MHz}$ $P_{IN} = 1\text{ W}$ $V_{CC} = 12.5\text{ V}$	10	--	--	W
G_P	$f = 175\text{ MHz}$ $P_{IN} = 1\text{ W}$ $V_{CC} = 12.5\text{ V}$	10	--	--	dB
C_{OB}	$f = 1\text{ MHz}$ $V_{CB} = 15\text{ V}$	--	--	45	pF

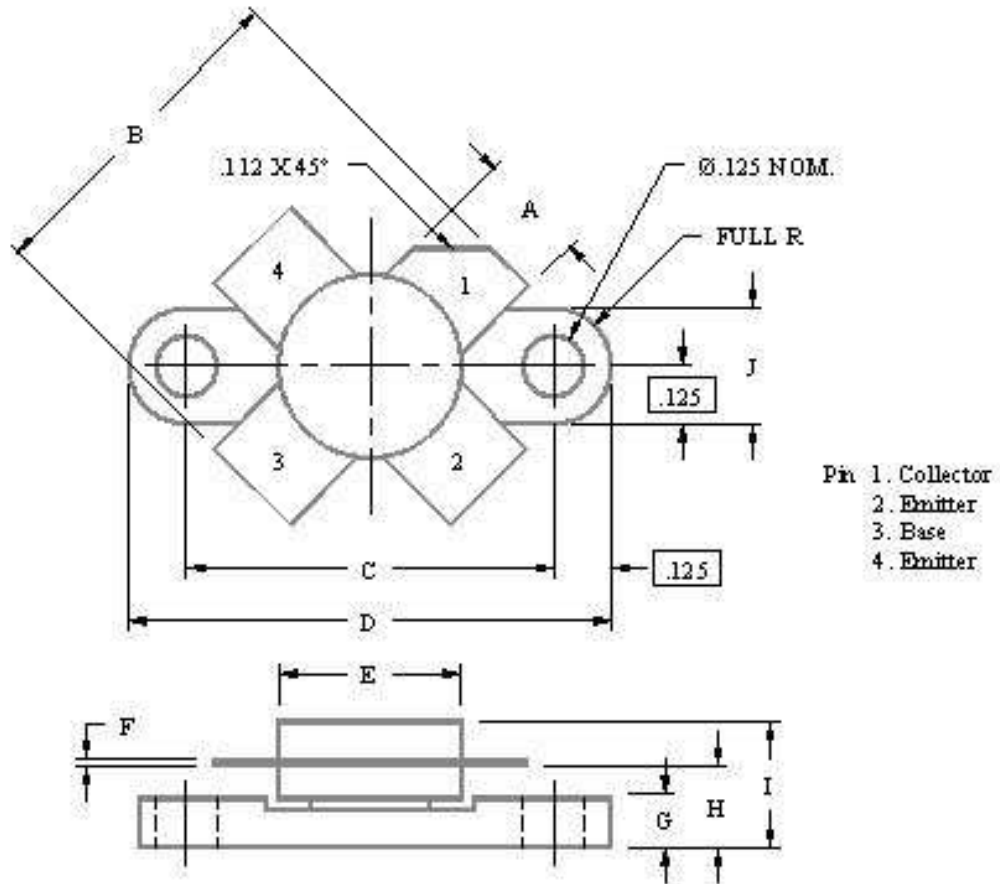
TYPICAL CHARACTERISTICS

Power Output vs Power Input



PACKAGE MECHANICAL DATA

SOE-380



	Minimum Inches/MM	Maximum Inches/MM		Minimum Inches/MM	Maximum Inches/MM
A	.220/5.59	.230/5.84	G	.085/2.16	.105/2.67
B	.785/19.94		H	.160/4.06	.180/4.57
C	.720/18.29	.730/18.54	I	.260/7.11	
D	.970/24.64	.980/24.89	J	.240/6.10	.255/6.48
E	.385/9.78				
F	.004/0.10	.006/0.15			

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