



Spectrum Devices Corporation

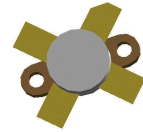
Semiconductor Engineering and Manufacturing

RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

VHF12-40

FEATURES:

- 160 MHz
- 13.6 Volts
- Common Emitter
- P_{out} = 40W Min. with 9.0 dB Gain
- Replacement for SD1275-01



0.380" DIAMETER
SOE PACKAGE

DESCRIPTION:

The VHF12-40 is a 13.6V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. The VHF12-40 utilizes an emitter ballasted die geometry to withstand severe load mismatch 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	8.0	A
P_{DISS}	Power Dissipation	70	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	1.2	$^{\circ}C/W$
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ELECTRICAL SPECIFICATIONS ($T_{CASE} = 25^{\circ}C$)

DC CHARACTERISTICS

Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	$I_C = 15mA$ $V_{BE} = 0 mA$	36	--	--	V
BV_{CEO}	$I_C = 50mA$ $I_B = 0 mA$	18	--	--	V
BV_{EBO}	$I_E = 5 mA$ $I_C = 0 mA$	4.0	--	--	V
I_{CBO}	$V_{CB} = 15V$ $I_E = 0 mA$	--	--	5	mA
h_{FE}	$V_{CE} = 5V$ $I_C = 250mA$	20	--	--	--

RF CHARACTERISTICS

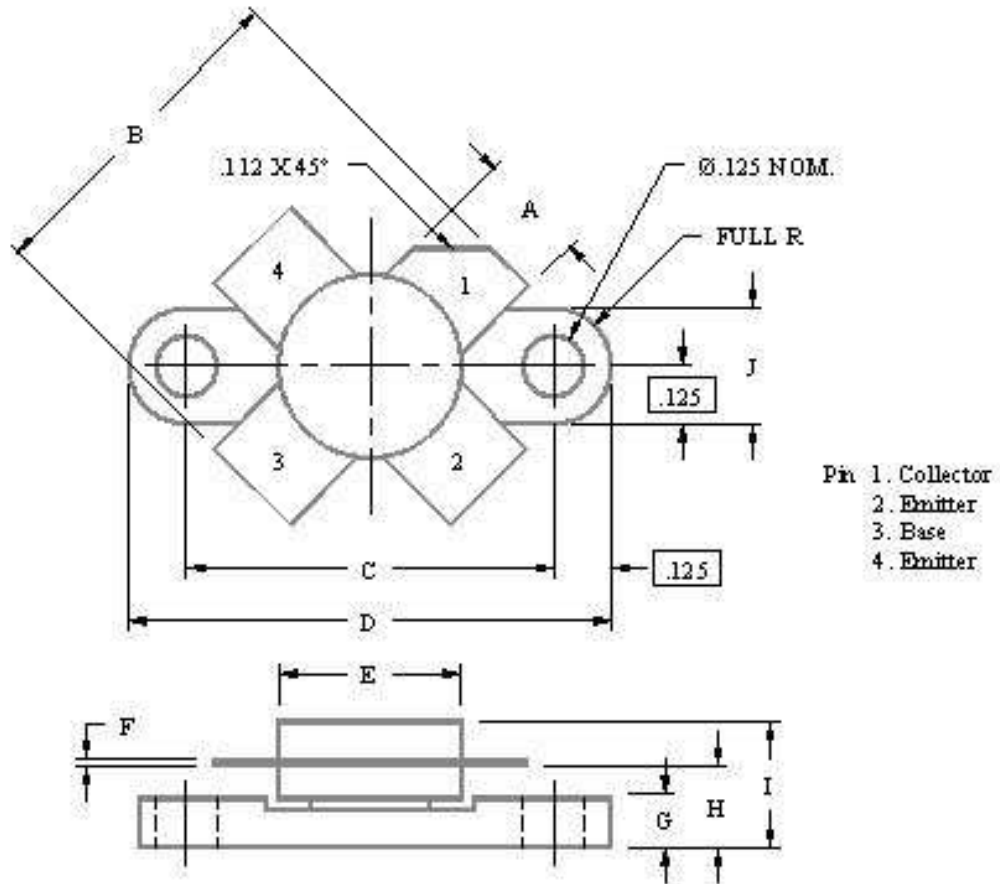
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 160 MHz$ $P_{IN} = 5.0W$ $V_{CC} = 13.6V$	40	--	--	W
G_P	$f = 160 MHz$ $P_{IN} = 5.0W$ $V_{CC} = 13.6V$	9	--	--	dB
C_{OB}	$f = 1 MHz$ $V_{CB} = 15 V$	--	95	--	pF

TYPICA



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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Life Support Applications

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