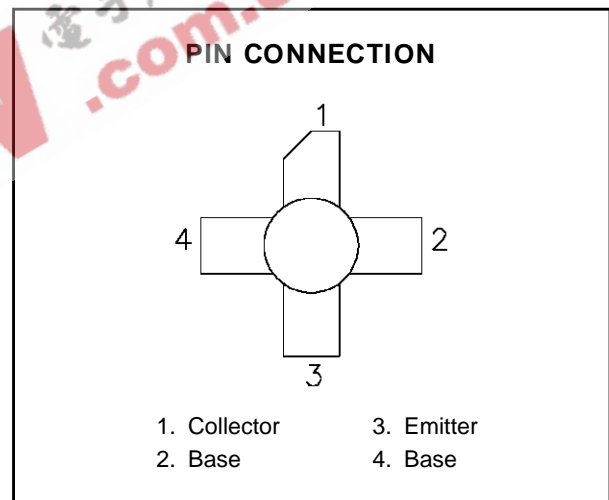
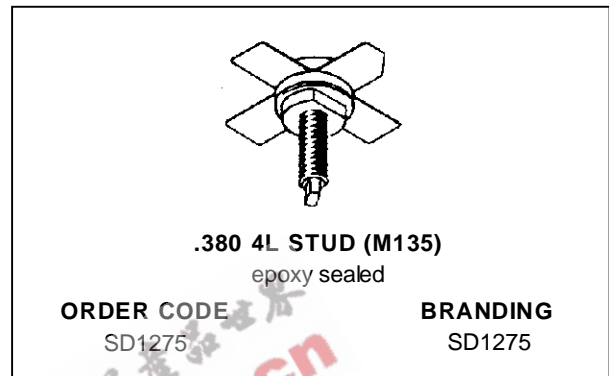


**RF & MICROWAVE TRANSISTORS  
VHF MOBILE APPLICATIONS**

- 160 MHz
- 13.6 VOLTS
- COMMON EMITTER
- $P_{OUT} = 40 \text{ W MIN. WITH } 9.0 \text{ dB GAIN}$


**DESCRIPTION**

The SD1275 is a 13.6 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. The SD1275 utilizes an emitter ballasted die geometry to withstand severe load mismatch conditions.

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}\text{C}$ )

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	36	V
$V_{CEO}$	Collector-Emitter Voltage	16	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	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}\text{C}$

**THERMAL DATA**

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	$^{\circ}\text{C/W}$
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## SD1275

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

#### STATIC

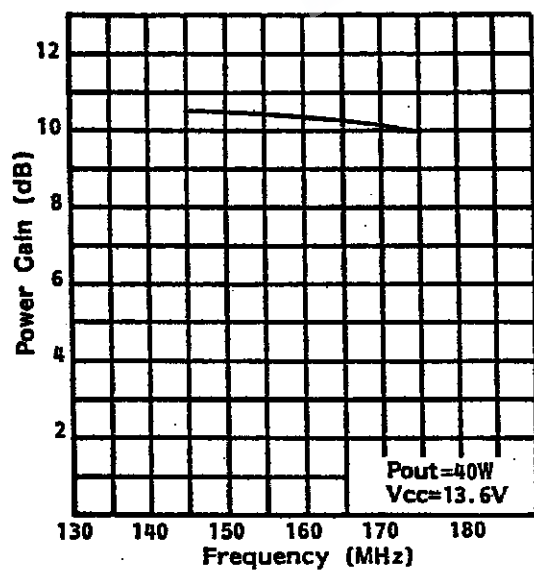
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CES}$	$I_C = 15mA$	$V_{BE} = 0mA$	36	—	—	V
$BV_{CEO}$	$I_C = 50mA$	$I_B = 0mA$	16	—	—	V
$BV_{EBO}$	$I_E = 5mA$	$I_C = 0mA$	4.0	—	—	V
$I_{CBO}$	$V_{CB} = 15V$	$I_E = 0mA$	—	—	5	mA
$h_{FE}$	$V_{CE} = 5V$	$I_C = 250mA$	20	—	—	—

#### DYNAMIC

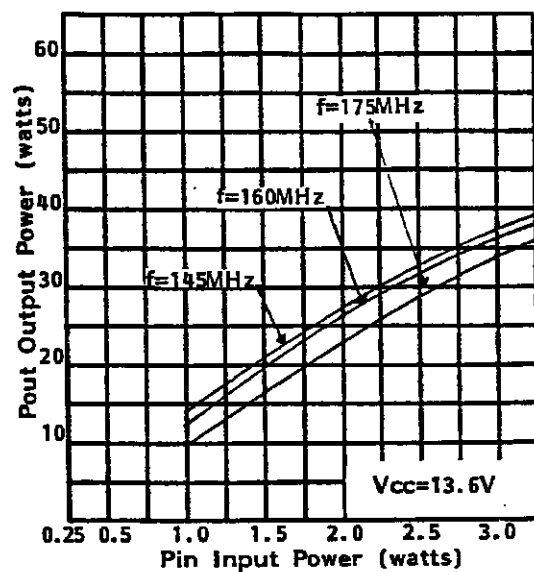
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_{OUT}$	$f = 160\text{ MHz}$	$P_{IN} = 5.0\text{ W}$	$V_{CE} = 13.6\text{ V}$	40	—	—	W
$G_P$	$f = 160\text{ MHz}$	$P_{IN} = 5.0\text{ W}$	$V_{CE} = 13.6\text{ V}$	9	—	—	dB
$C_{OB}$	$f = 1\text{ MHz}$	$V_{CB} = 15\text{ V}$		—	95	—	pF

#### TYPICAL PERFORMANCE

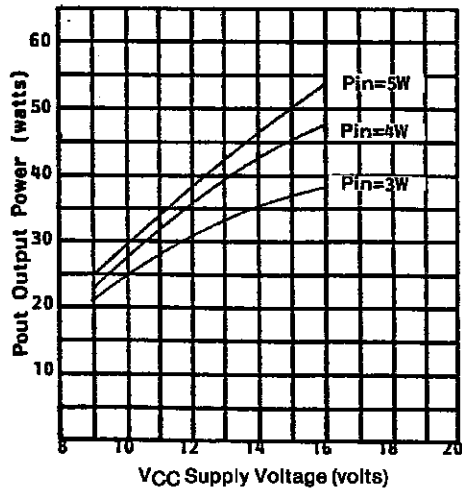
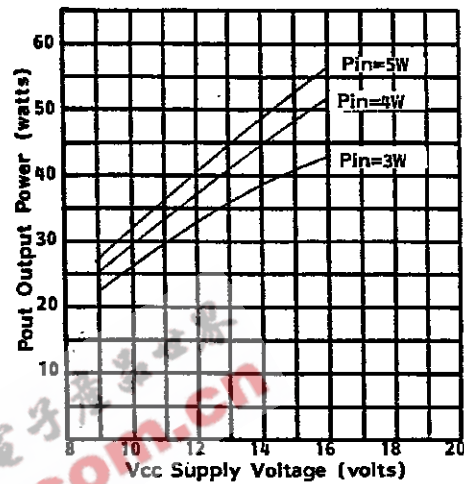
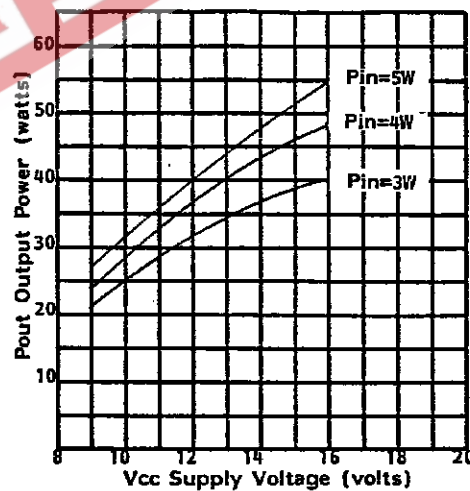
POWER GAIN vs FREQUENCY



POWER OUTPUT vs POWER INPUT



## TYPICAL PERFORMANCE (cont'd)

POWER OUTPUT vs SUPPLY VOLTAGE  
(175 MHz)POWER OUTPUT vs SUPPLY VOLTAGE  
(145 MHz)POWER OUTPUT vs SUPPLY VOLTAGE  
(160 MHz)

## IMPEDANCE DATA

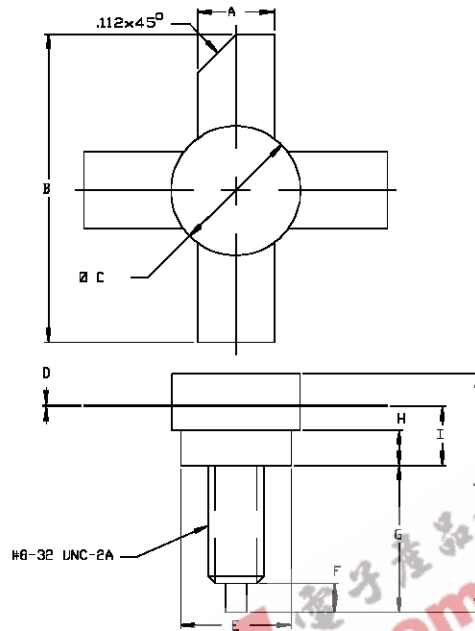
FREQ.	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
160 MHz	1.0 + j 0.4	2.3 + j 0.1

P<sub>IN</sub> = 3.0 W  
V<sub>CE</sub> = 12.5 V

# SD1275

## PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0135



SGS-THOMSON MICROELECTRONICS		
	MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84
B	.980/24,89	
C	.370/9,40	.385/9,78
D	.004/0,10	.007/0,18
E	.320/8,13	.330/8,38
F	.100/2,54	.130/3,30
G	.450/11,43	.490/12,45
H	.090/2,29	.100/2,54
I	.155/3,94	.175/4,45
J		.750/19,05

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