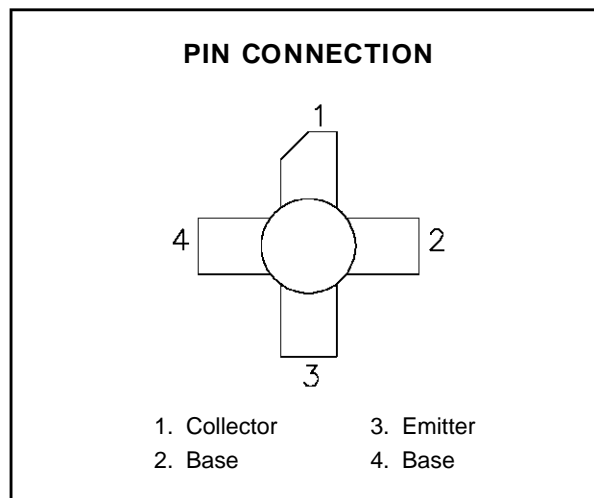
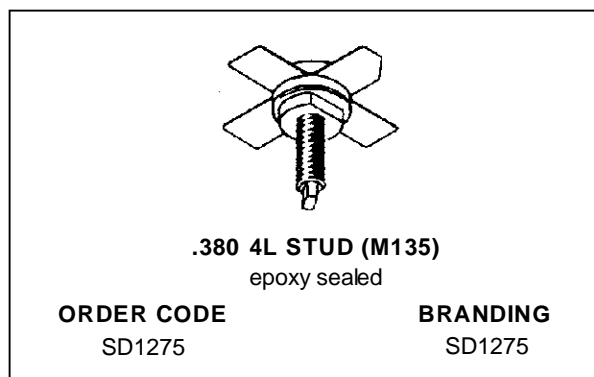


**RF & MICROWAVE TRANSISTORS  
VHF MOBILE APPLICATIONS**

- 160 MHz
- 13.6 VOLTS
- COMMON EMITTER
- $P_{OUT} = 40$  W MIN. WITH 9.0 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** ( $T_{case} = 25^{\circ}C$ )

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	$^{\circ}C$
$T_{STG}$	Storage Temperature	- 65 to +150	$^{\circ}C$

**THERMAL DATA**

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

## ELECTRICAL SPECIFICATIONS (T<sub>case</sub> = 25°C)

### STATIC

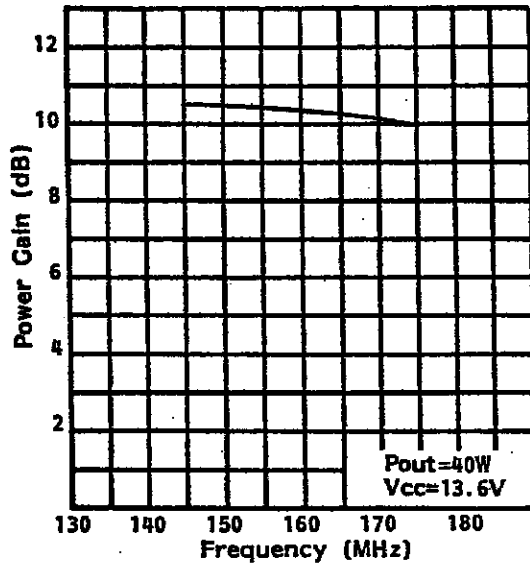
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV <sub>CES</sub>	I <sub>C</sub> = 15mA	V <sub>BE</sub> = 0mA	36	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 50mA	I <sub>B</sub> = 0mA	16	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 5mA	I <sub>C</sub> = 0mA	4.0	—	—	V
I <sub>CBO</sub>	V <sub>CB</sub> = 15V	I <sub>E</sub> = 0mA	—	—	5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 250mA	20	—	—	—

### DYNAMIC

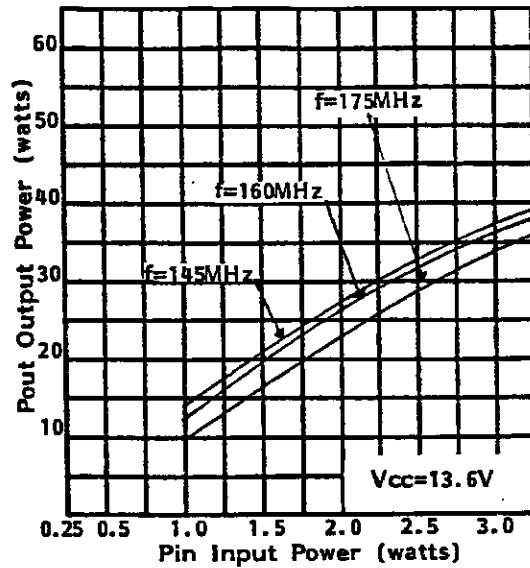
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 160 MHz	P <sub>IN</sub> = 5.0 W	V <sub>CE</sub> = 13.6 V	40	—	—	W
G <sub>P</sub>	f = 160 MHz	P <sub>IN</sub> = 5.0 W	V <sub>CE</sub> = 13.6 V	9	—	—	dB
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 15 V		—	95	—	pF

### TYPICAL PERFORMANCE

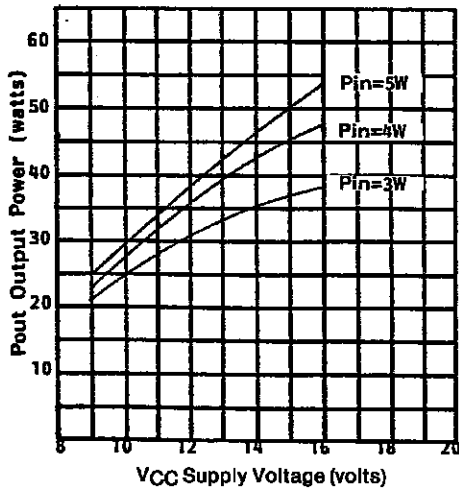
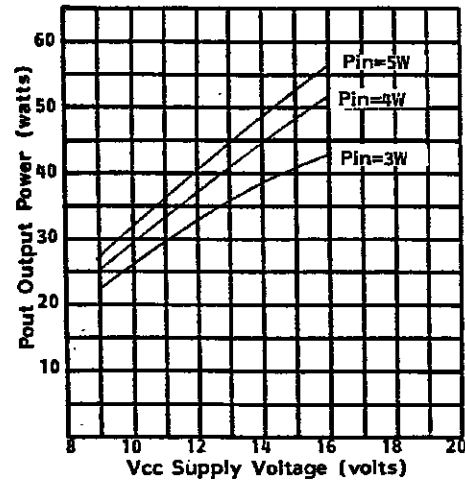
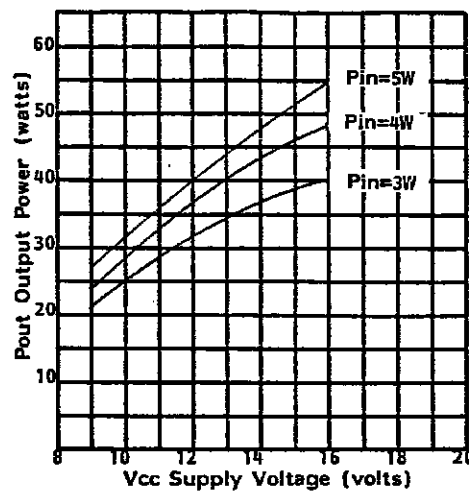
POWER GAIN vs FREQUENCY



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)

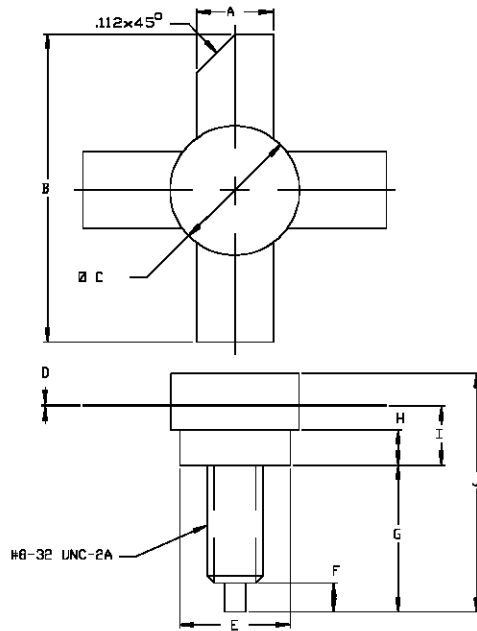
## IMPEDANCE DATA

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

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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