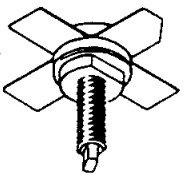
SGS-THOMSON MICROELECTRONICS

SD1274

RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

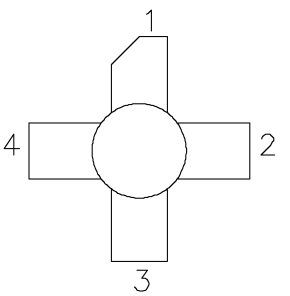
- 160 MHz
- 13.6 VOLTS
- COMMON EMITTER
- P_{OUT} = 30 W MIN. WITH 10 dB GAIN



.380 4L STUD (M135)
epoxy sealed

ORDER CODE	BRANDING
SD1274	SD1274

PIN CONNECTION



1. Collector
2. Emitter
3. Base
4. Emitter

DESCRIPTION

The SD1274 is a 13.6 V Class C epitaxial silicon NPN planar transistor designed primarily for VHF communications. The SD1274 utilizes an emitter ballasted die geometry to withstand severe load mismatch conditions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°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	°C
T_{STG}	Storage Temperature	– 65 to +150	°C

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.2	°C/W

ELECTRICAL SPECIFICATIONS (T_{case} = 25°C)

STATIC

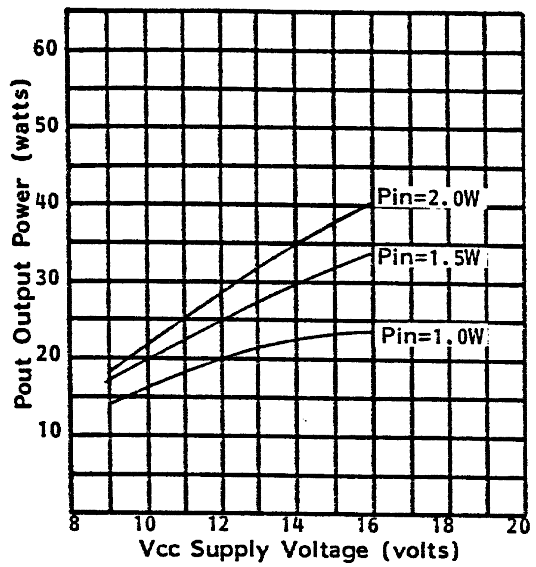
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	I_C = 15mA	V_{BE} = 0mA	36	—	—	V
BV_{CEO}	I_C = 50mA	I_B = 0mA	16	—	—	V
BV_{EBO}	I_E = 5mA	I_C = 0mA	4.0	—	—	V
I_{CBO}	V_{CB} = 15V	I_E = 0mA	—	—	5	mA
h_{FE}	V_{CE} = 5V	I_C = 250mA	20	—	—	—

DYNAMIC

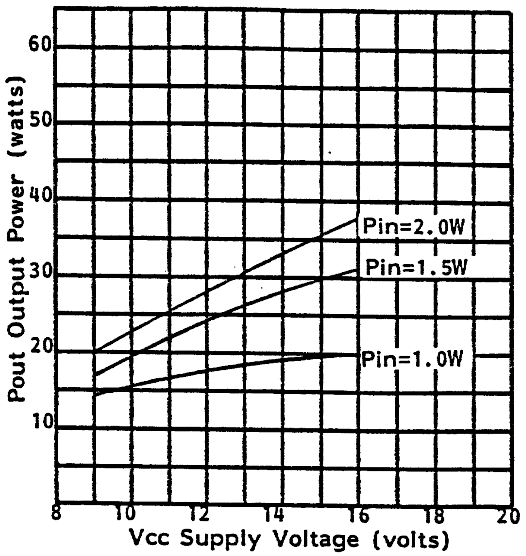
Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	f = 160 MHz	P_{IN} = 3.0 W	V_{CE} = 13.6 V	30	—	—	W
G_P	f = 160 MHz	P_{IN} = 3.0 W	V_{CE} = 13.6 V	10	—	—	dB
C_{OB}	f = 1 MHz	V_{CB} = 15 V		—	95	—	pF

TYPICAL PERFORMANCE

POWER OUTPUT vs SUPPLY VOLTAGE (136 MHz)

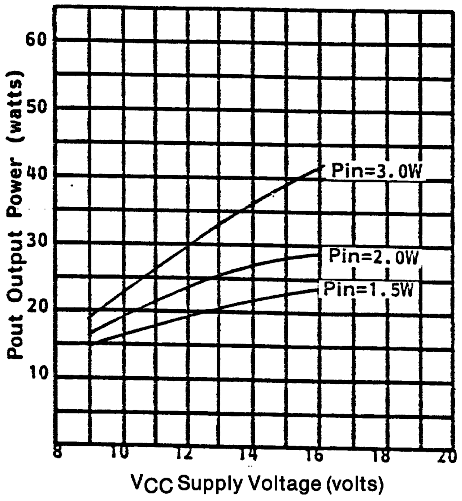


POWER OUTPUT vs SUPPLY VOLTAGE (150 MHz)

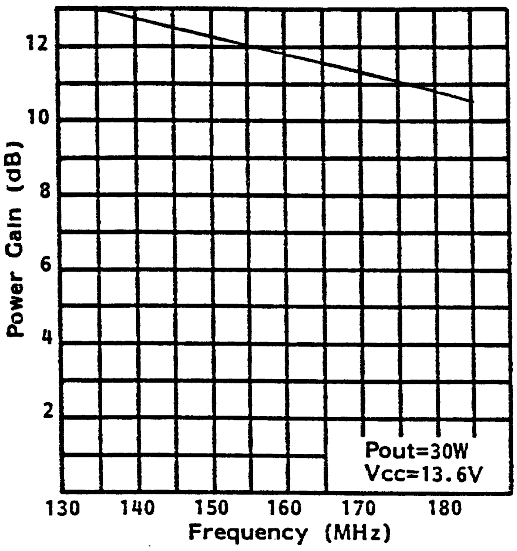


TYPICAL PERFORMANCE (cont'd)

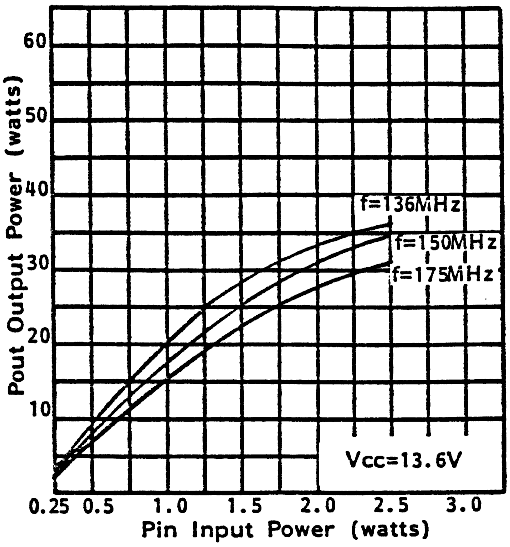
POWER OUTPUT vs SUPPLY VOLTAGE (175 MHz)



POWER GAIN vs FREQUENCY



POWER OUTPUT vs POWER INPUT



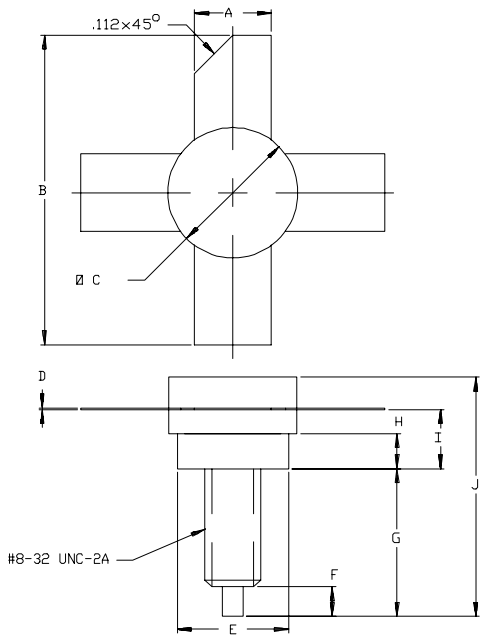
IMPEDANCE DATA

FREQ.	Z_{IN} (Ω)	Z_{CL} (Ω)
175 MHz	1.0 + j 0.4	2.3 + j 0.1

P_{IN} = 3.0 W
V_{CE} = 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