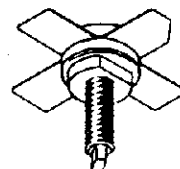


RF & MICROWAVE TRANSISTORS VHF MOBILE APPLICATIONS

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



.380 4L STUD (M135)
epoxy sealed

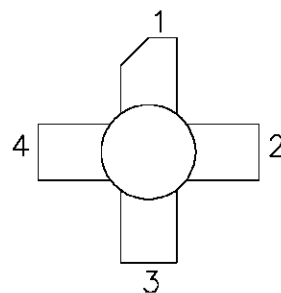
ORDER CODE
SD1274

BRANDING
SD1274

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.

PIN CONNECTION



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

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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SD1274

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

STATIC

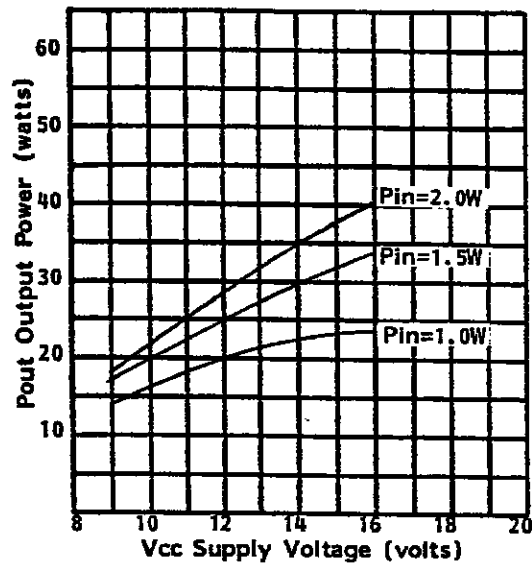
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
BV_{CES}	$I_{\text{C}} = 15\text{mA}$ $V_{\text{BE}} = 0\text{mA}$	36	—	—	V
BV_{CEO}	$I_{\text{C}} = 50\text{mA}$ $I_{\text{B}} = 0\text{mA}$	16	—	—	V
BV_{EBO}	$I_{\text{E}} = 5\text{mA}$ $I_{\text{C}} = 0\text{mA}$	4.0	—	—	V
I_{CBO}	$V_{\text{CB}}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

DYNAMIC

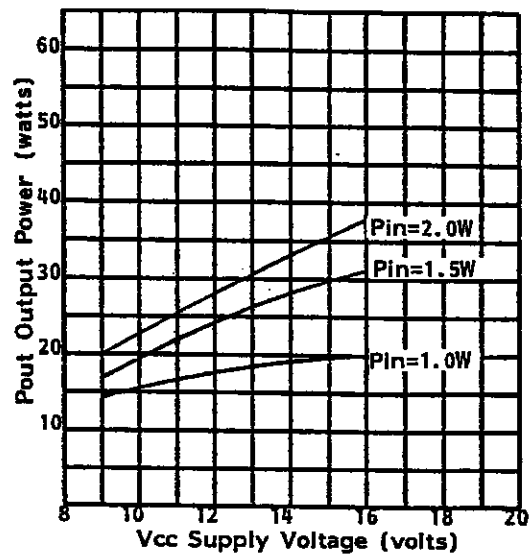
Symbol	Test Conditions	Value			Unit
		Min.	Typ.	Max.	
P_{OUT}	$f = 160\text{ MHz}$ $P_{\text{IN}} = 3.0\text{ W}$ $V_{\text{CE}} = 13.6\text{ V}$	30	—	—	W
G_{P}	$f = 160\text{ MHz}$ $P_{\text{IN}} = 3.0\text{ W}$ $V_{\text{CE}} = 13.6\text{ V}$	10	—	—	dB
C_{OB}	$f = 1\text{ MHz}$ $V_{\text{CB}} = 15\text{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

TYPICAL PERFORMANCE

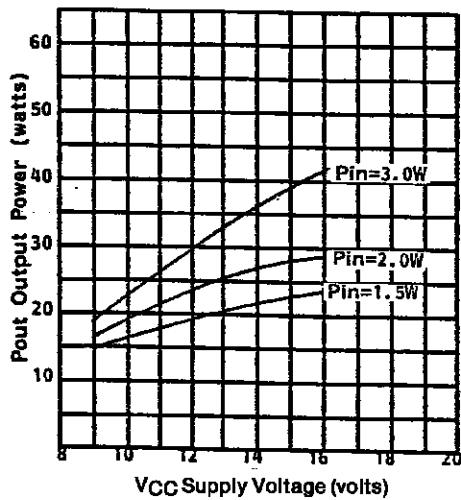
POWER OUTPUT vs SUPPLY VOLTAGE
(136 MHz)



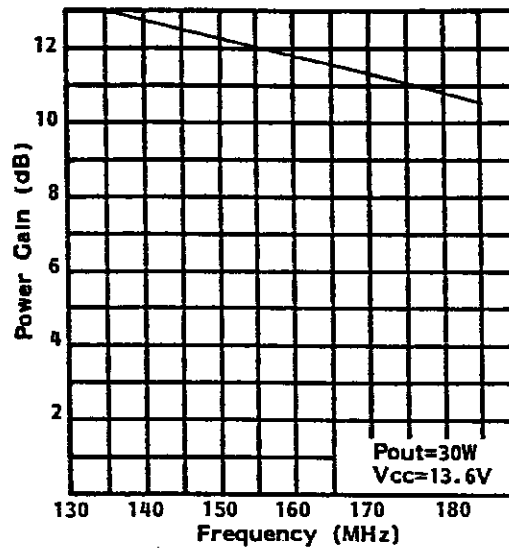
POWER OUTPUT vs SUPPLY VOLTAGE
(150 MHz)



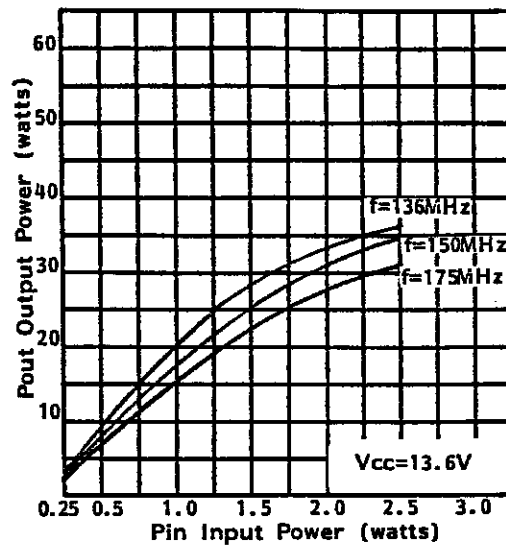
TYPICAL PERFORMANCE (cont'd)

POWER OUTPUT vs SUPPLY VOLTAGE
(175 MHz)

POWER GAIN vs FREQUENCY



POWER OUTPUT vs POWER INPUT



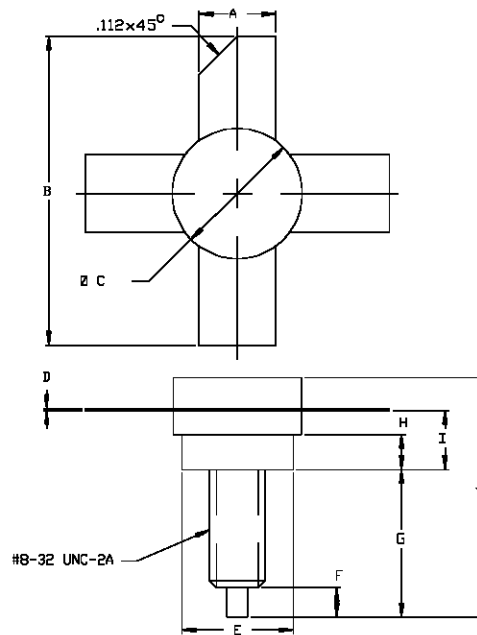
IMPEDANCE DATA

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

 $P_{IN} = 3.0 \text{ W}$
 $V_{CE} = 12.5 \text{ V}$

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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