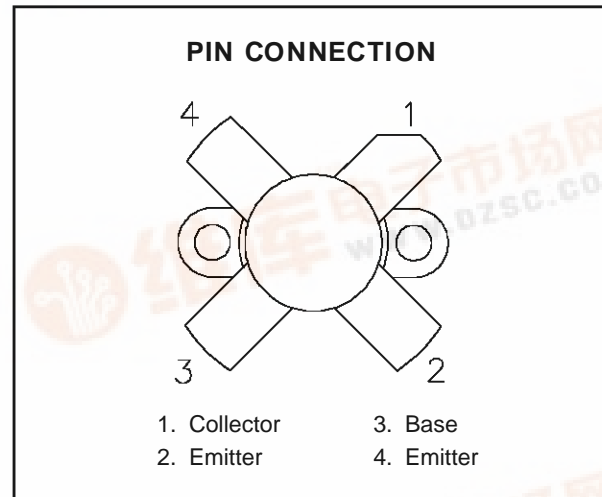
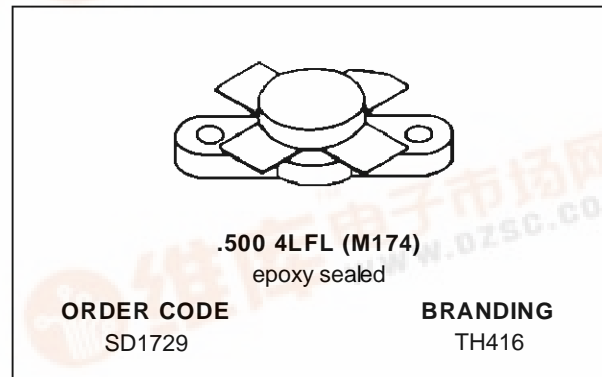




SD1729 (TH416)

RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 28 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- P_{OUT} = 130 W PEP WITH 12 dB GAIN



DESCRIPTION

The SD1729 is a Class AB 28 V epitaxial silicon NPN planar transistor designed primarily for SSB communications. This device utilizes emitter ballasting to achieve extreme ruggedness under severe operating conditions.

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CBO}	Collector-Base Voltage	70	V
V _{CEO}	Collector-Emitter Voltage	35	V
V _{EBO}	Emitter-Base Voltage	4.0	V
I _C	Device Current	12	A
P _{DISS}	Power Dissipation	175	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	1.0	°C/W
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SD1729 (TH416)

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

STATIC

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CES}	$I_C = 50\text{ mA}$	$V_{BE} = 0\text{ V}$	70	—	—	V
BV_{CEO}	$I_C = 100\text{ mA}$	$I_B = 0\text{ mA}$	35	—	—	V
BV_{EBO}	$I_E = 20\text{ mA}$	$I_C = 0\text{ mA}$	4.0	—	—	V
I_{CES}	$V_{CE} = 35\text{ V}$	$I_E = 0\text{ mA}$	—	—	20	mA
h_{FE}	$V_{CE} = 5\text{ V}$	$I_C = 7\text{ A}$	18	—	50	—

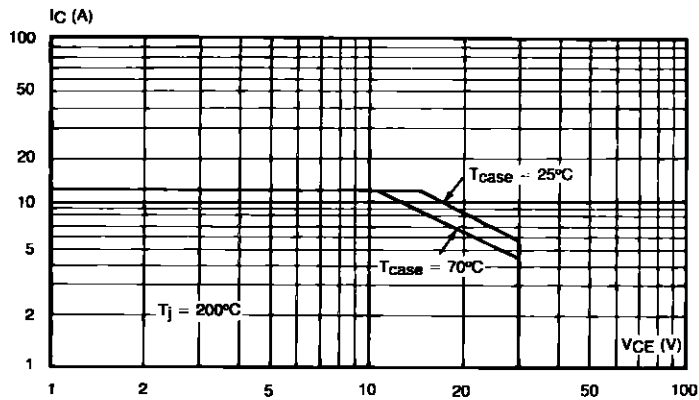
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{OUT}	$f = 30\text{ MHz}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 150\text{ mA}$	130	—	—	W
G_P	$P_{OUT} = 130\text{ W PEP}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 150\text{ mA}$	12	—	—	dB
IMD*	$P_{OUT} = 130\text{ W PEP}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 150\text{ mA}$	—	—	-30	dBc
η_c	$P_{OUT} = 130\text{ W PEP}$	$V_{CE} = 28\text{ V}$	$I_{CQ} = 150\text{ mA}$	37	—	—	%
C_{OB}	$f = 1\text{ MHz}$	$V_{CB} = 28\text{ V}$		—	220	—	pF

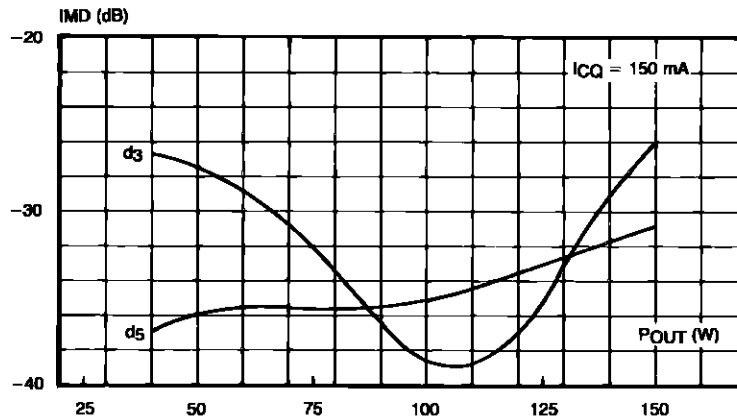
Note: * $f_1 = 30.00\text{ MHz}$, $f_2 = 30.001\text{ MHz}$

TYPICAL PERFORMANCE

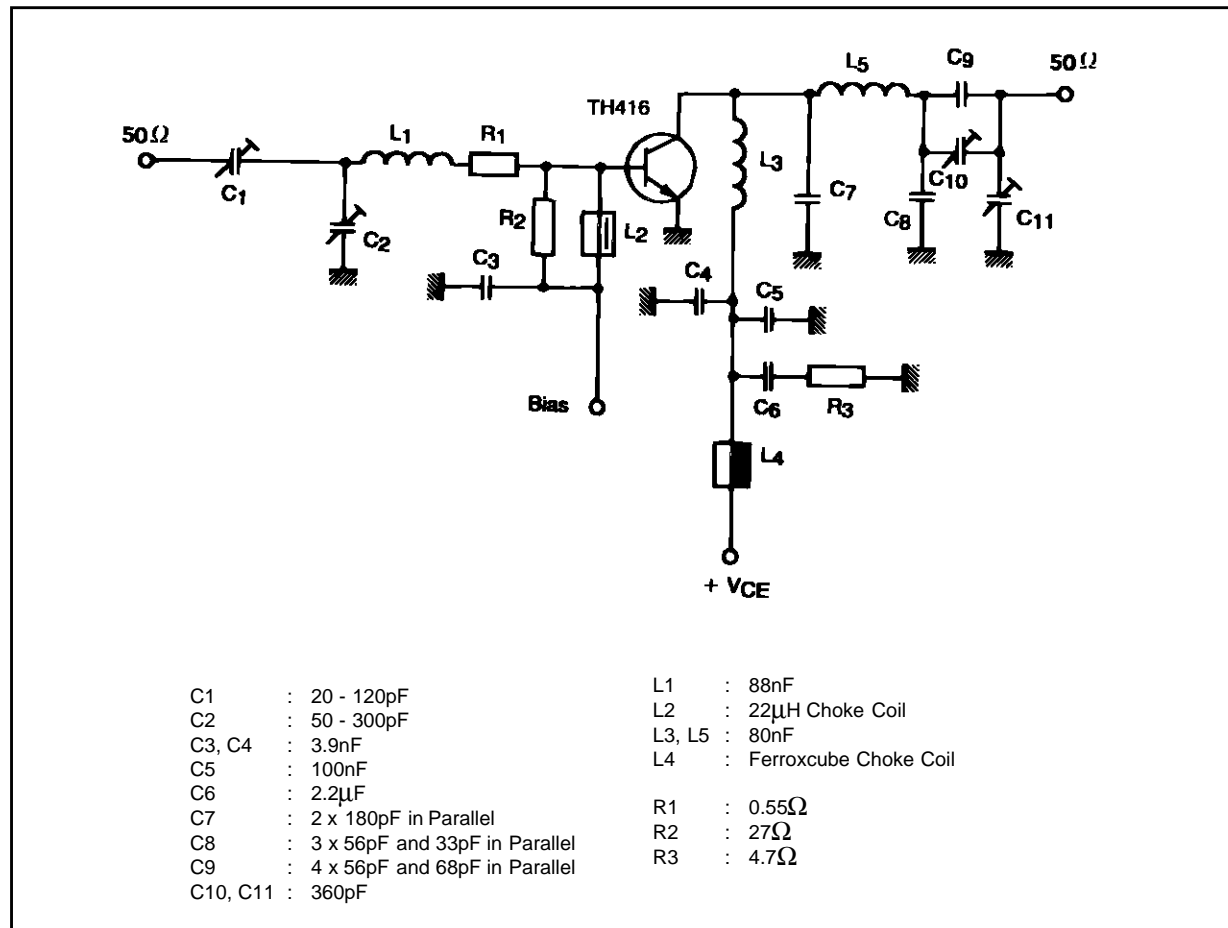
SAFE OPERATING AREA



TYPICAL PERFORMANCE (cont'd)

INTERMODULATION DISTORTION vs
POWER OUTPUT

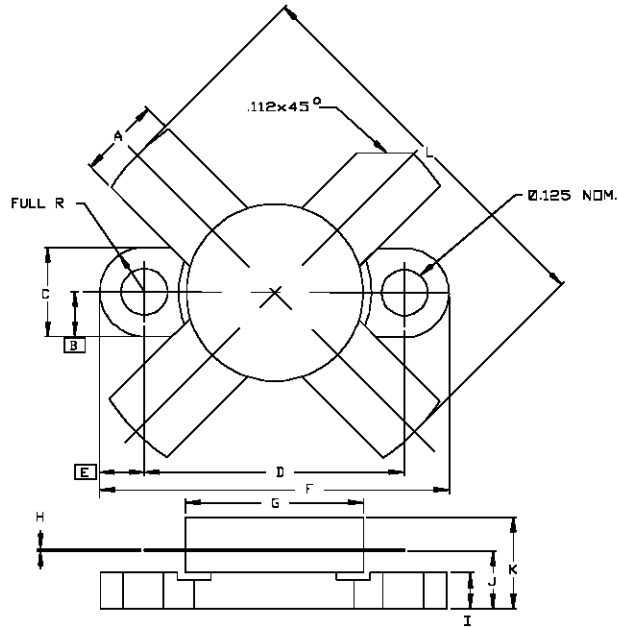
TEST CIRCUIT



SD1729 (TH416)

PACKAGE MECHANICAL DATA

Ref.: Dwg. No.12-0174



SGS-THOMSON MICROELECTRONICS			CONT'D		
	MINIMUM Inches/mm	MAXIMUM Inches/mm		MINIMUM Inches/mm	MAXIMUM Inches/mm
A	.220/5,59	.230/5,84	K		.280/7,11
B	.125/3,18		L		1.050/26,67
C	.245/6,22	.255/6,48			
D	.720/18,28	.730/18,54			
E	.125/3,18				
F	.970/24,64	.980/24,89			
G	.495/12,57	.505/12,83			
H	.003/0,08	.007/0,18			
I	.090/2,29	.110/2,79			
J	.160/4,06	.175/4,45			

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