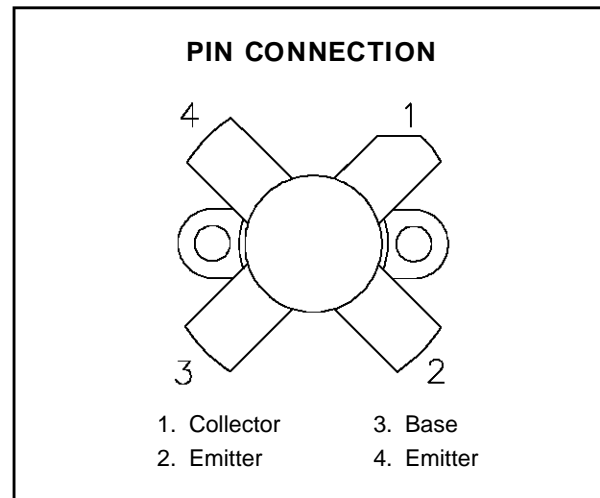
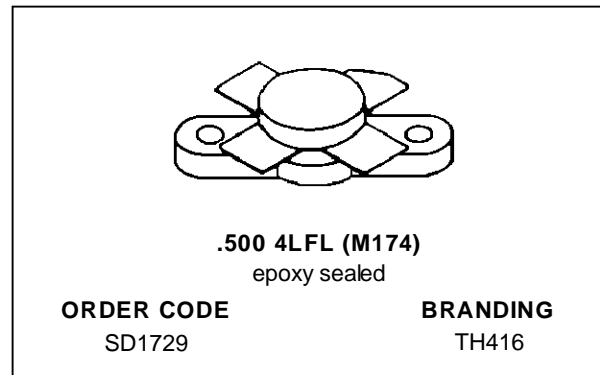


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- OPTIMIZED FOR SSB
- 30 MHz
- 28 VOLTS
- IMD -30 dB
- COMMON EMITTER
- GOLD METALLIZATION
- P<sub>OUT</sub> = 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<sub>case</sub> = 25°C)

Symbol	Parameter	Value	Unit
V <sub>CBO</sub>	Collector-Base Voltage	70	V
V <sub>CEO</sub>	Collector-Emitter Voltage	35	V
V <sub>EBO</sub>	Emitter-Base Voltage	4.0	V
I <sub>C</sub>	Device Current	12	A
P <sub>DISS</sub>	Power Dissipation	175	W
T <sub>J</sub>	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

### THERMAL DATA

R <sub>TH(j-c)</sub>	Junction-Case Thermal Resistance	1.0	°C/W
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## SD1729 (TH416)

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

#### STATIC

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

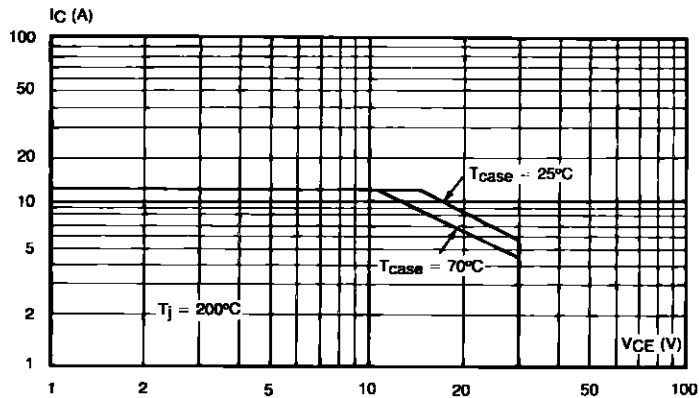
#### DYNAMIC

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

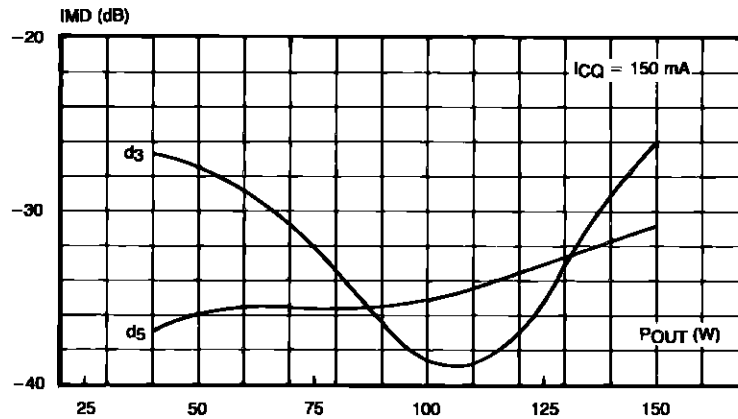
Note: \*  $f_1 = 30.00 \text{ MHz}$ ,  $f_2 = 30.001 \text{ MHz}$

#### TYPICAL PERFORMANCE

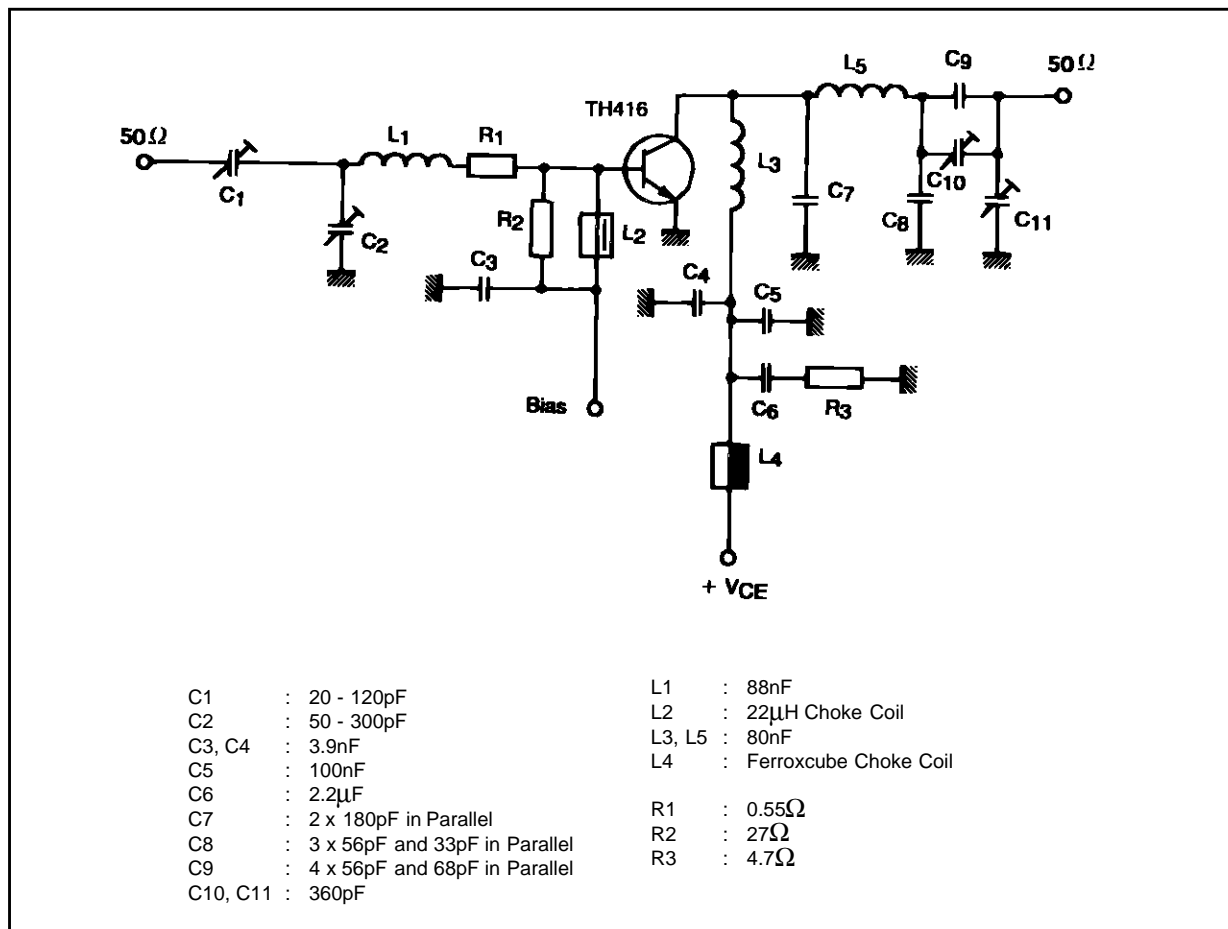
#### SAFE OPERATING AREA



## TYPICAL PERFORMANCE (cont'd)

INTERMODULATION DISTORTION vs  
POWER OUTPUT

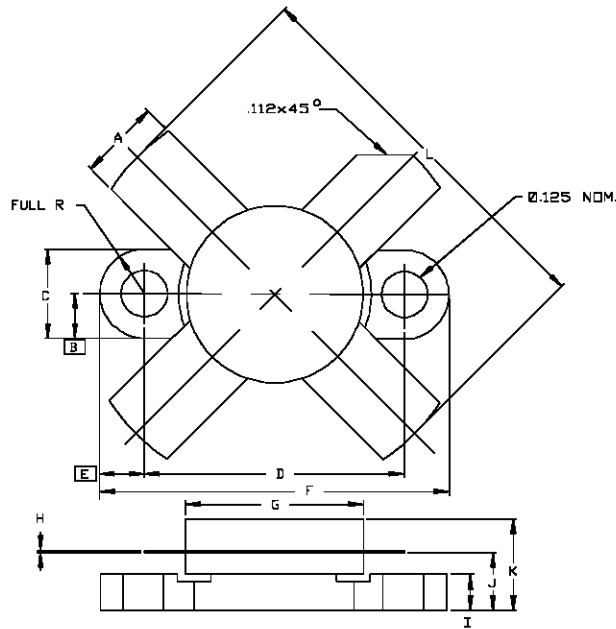
## TEST CIRCUIT



# 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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