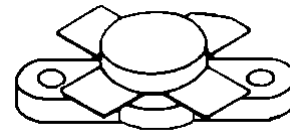


## RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

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



**.500 4LFL (M174)**  
epoxy sealed

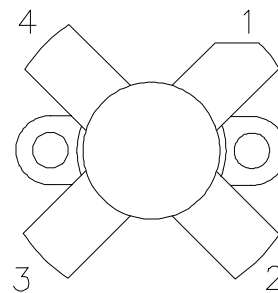
**ORDER CODE**  
SD1729

**BRANDING**  
TH416

### 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.

### PIN CONNECTION



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

### ABSOLUTE MAXIMUM RATINGS ( $T_{case} = 25^{\circ}C$ )

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

### THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.0	$^{\circ}C/W$
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# SD1729 (TH416)

## 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> = 50 mA	V <sub>BE</sub> = 0 V	70	—	—	V
BV <sub>CEO</sub>	I <sub>C</sub> = 100 mA	I <sub>B</sub> = 0 mA	35	—	—	V
BV <sub>EBO</sub>	I <sub>E</sub> = 20 mA	I <sub>C</sub> = 0 mA	4.0	—	—	V
I <sub>CES</sub>	V <sub>CE</sub> = 35 V	I <sub>E</sub> = 0 mA	—	—	20	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5 V	I <sub>C</sub> = 7 A	18	—	50	—

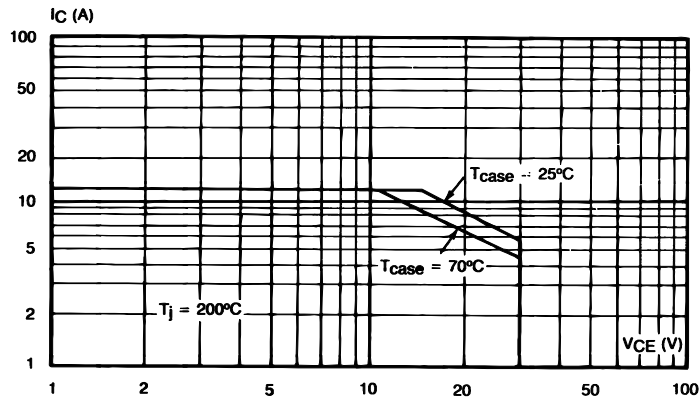
### DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P <sub>OUT</sub>	f = 30 MHz	V <sub>CE</sub> = 28 V	I <sub>CQ</sub> = 150 mA	130	—	—	W
G <sub>P</sub>	P <sub>OUT</sub> = 130 W PEP	V <sub>CE</sub> = 28 V	I <sub>CQ</sub> = 150 mA	12	—	—	dB
IMD*	P <sub>OUT</sub> = 130 W PEP	V <sub>CE</sub> = 28 V	I <sub>CQ</sub> = 150 mA	—	—	-30	dBc
η <sub>C</sub>	P <sub>OUT</sub> = 130 W PEP	V <sub>CE</sub> = 28 V	I <sub>CQ</sub> = 150 mA	37	—	—	%
C <sub>OB</sub>	f = 1 MHz	V <sub>CB</sub> = 28 V		—	220	—	pF

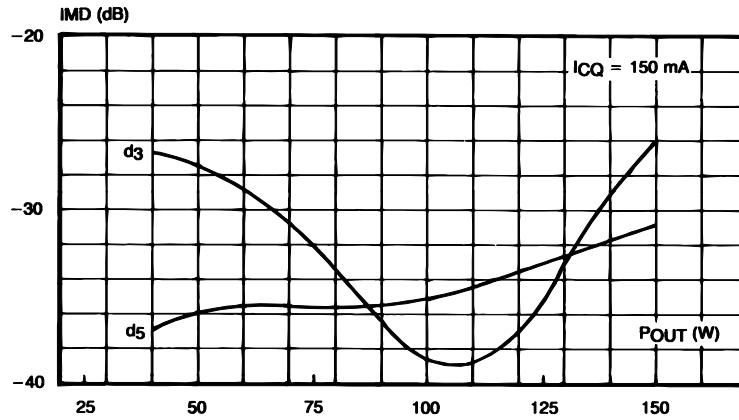
Note: \* f<sub>1</sub> = 30.00 MHz, f<sub>2</sub> = 30.001 MHz

### TYPICAL PERFORMANCE

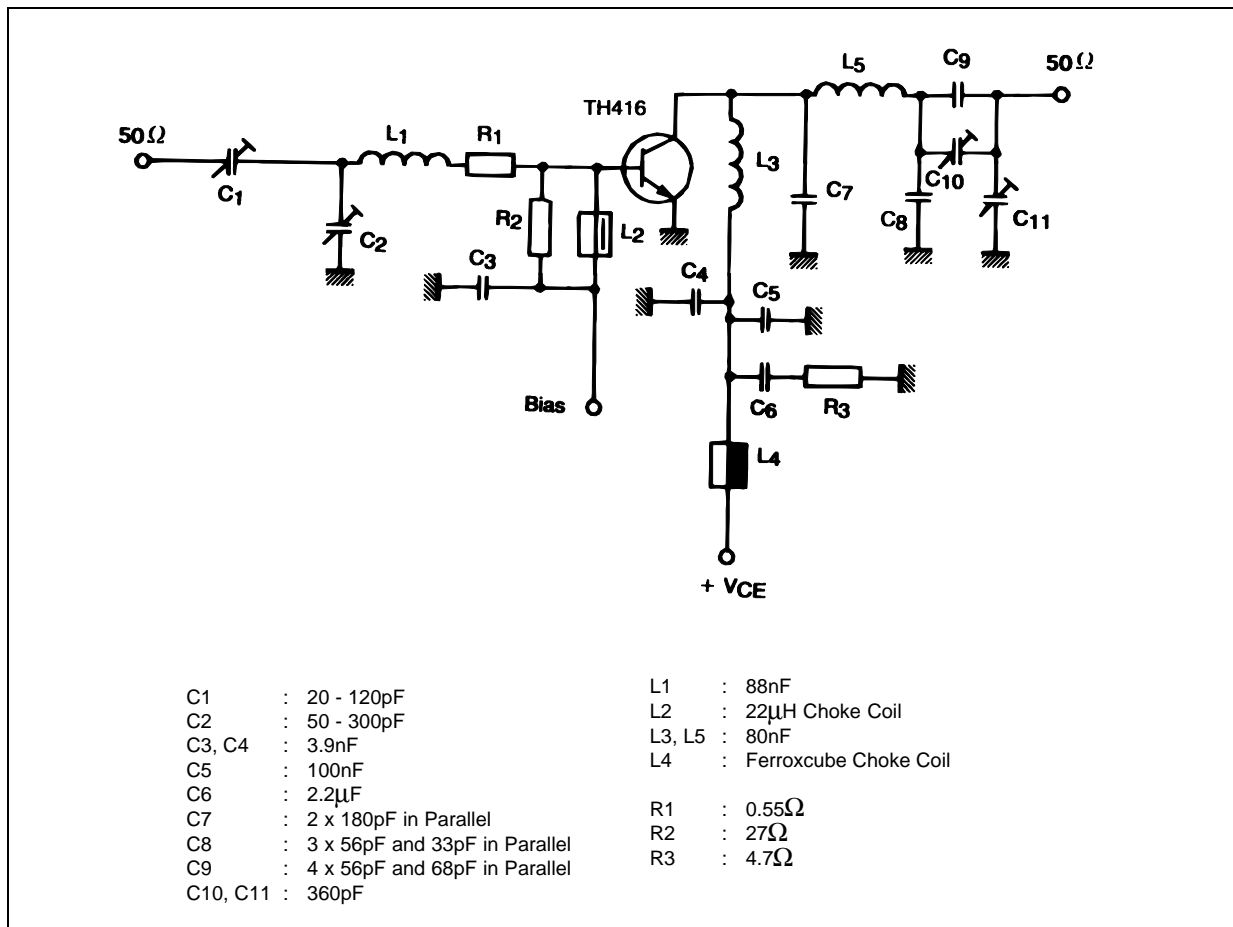
#### SAFE OPERATING AREA



## TYPICAL PERFORMANCE (cont'd)

INTERMODULATION DISTORTION vs  
POWER OUTPUT

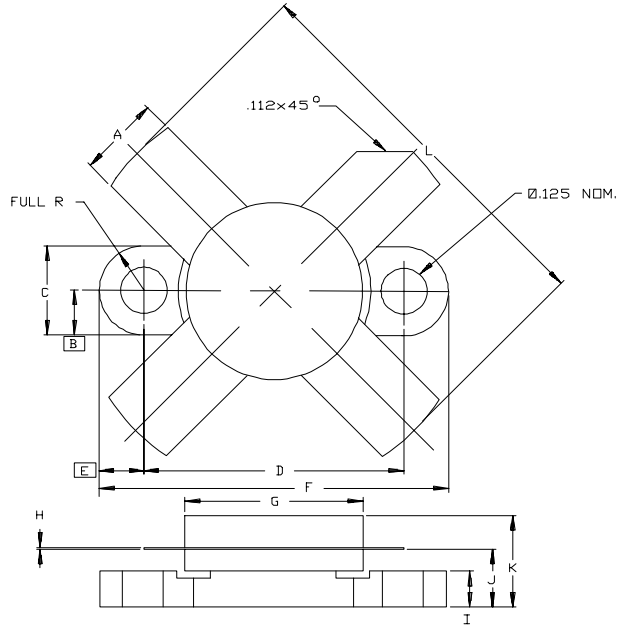
## TEST CIRCUIT



# 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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