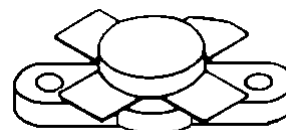


RF & MICROWAVE TRANSISTORS HF SSB APPLICATIONS

- 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

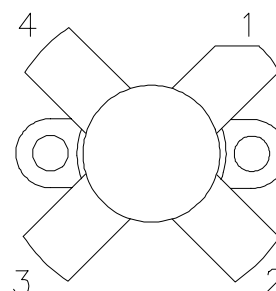
ORDER CODE
SD1729

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

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

THERMAL DATA

$R_{TH(j-c)}$	Junction-Case Thermal Resistance	1.0	$^{\circ}\text{C/W}$
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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_{CES}	$I_{\text{C}} = 50 \text{ mA}$	$V_{\text{BE}} = 0 \text{ V}$	70	—	—	V
BV_{CEO}	$I_{\text{C}} = 100 \text{ mA}$	$I_{\text{B}} = 0 \text{ mA}$	35	—	—	V
BV_{EBO}	$I_{\text{E}} = 20 \text{ mA}$	$I_{\text{C}} = 0 \text{ mA}$	4.0	—	—	V
I_{CES}	$V_{\text{CE}} = 35 \text{ V}$	$I_{\text{E}} = 0 \text{ mA}$	—	—	20	mA
h_{FE}	$V_{\text{CE}} = 5 \text{ V}$	$I_{\text{C}} = 7 \text{ A}$	18	—	50	—

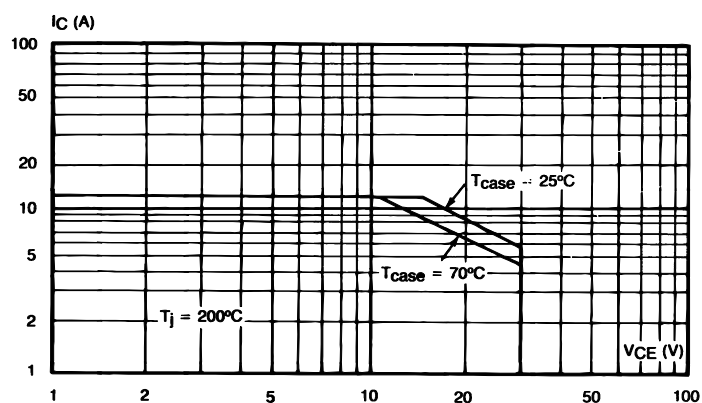
DYNAMIC

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

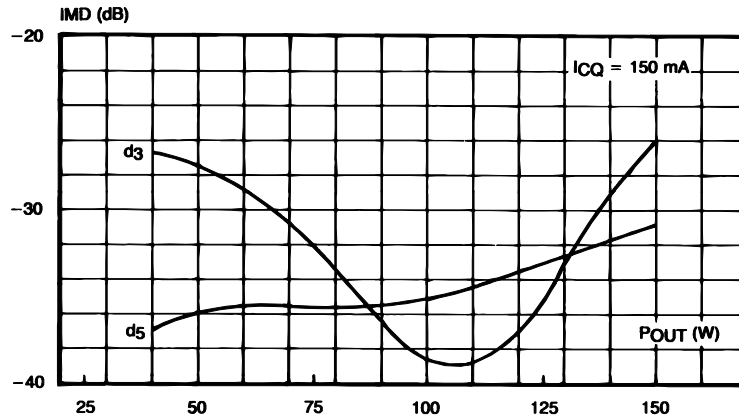
Note: * $f_1 = 30.00 \text{ MHz}$, $f_2 = 30.001 \text{ MHz}$

TYPICAL PERFORMANCE

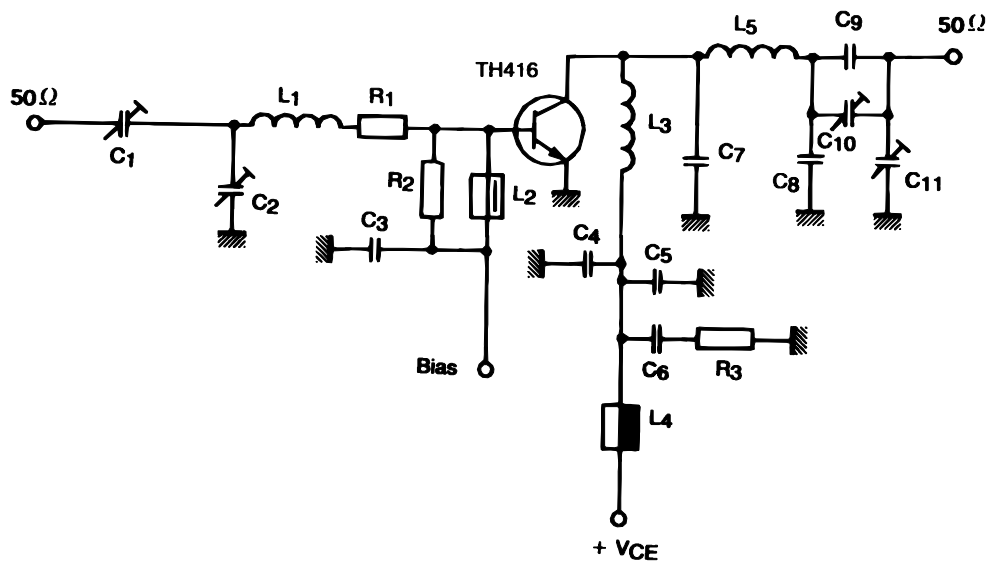
SAFE OPERATING AREA



TYPICAL PERFORMANCE (cont'd)

INTERMODULATION DISTORTION vs
POWER OUTPUT

TEST CIRCUIT

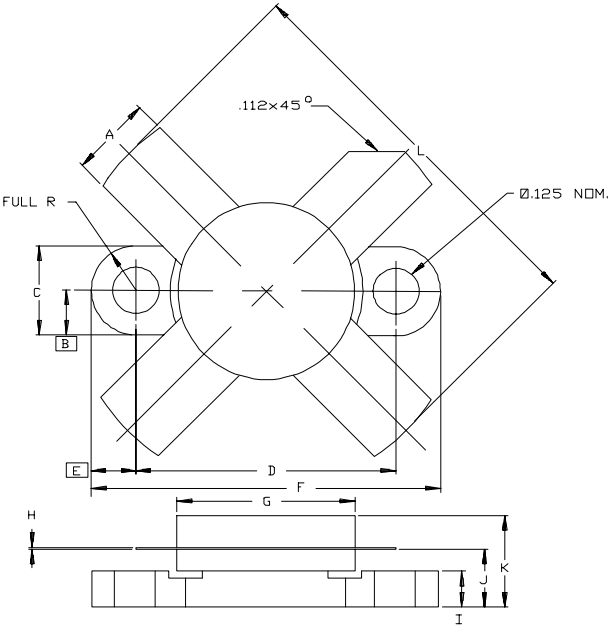


C1 : 20 - 120pF
 C2 : 50 - 300pF
 C3, C4 : 3.9nF
 C5 : 100nF
 C6 : 2.2μF
 C7 : 2 x 180pF in Parallel
 C8 : 3 x 56pF and 33pF in Parallel
 C9 : 4 x 56pF and 68pF in Parallel
 C10, C11 : 360pF

L1 : 88nF
 L2 : 22μH Choke Coil
 L3, L5 : 80nF
 L4 : Ferroxcube Choke Coil
 R1 : 0.55Ω
 R2 : 27Ω
 R3 : 4.7Ω

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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