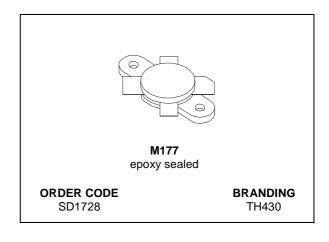


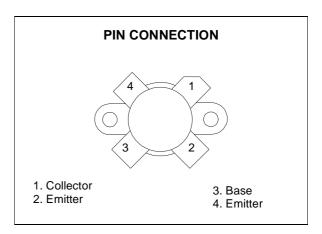
SD1728 (TH430) RF & MICROWAVE TRANSISTORS HF SSB APPLICATION

- OPTIMIZED FOR SSB
- 30 MHz
- 50 V
- IMD = -30 dB
- GOLD METALLIZATION
- COMMON EMITTER
- POUT = 250 W PEP WITH 14.5 dB GAIN



DESCRIPTION

The SD1728 is a 50 V epitaxial silicon NPN planar transistor designed primarily for SSB and VHF communications. This device utilizes emitter ballasting for improved ruggedness and reliability.



ABSOLUTE MAXIMUM RATINGS $(T_{CASE} = 25 \degree C)$

Symbol	Parameter	Value	Unit	
V _{CBO}	Collector-Base Voltage	110	V	
V _{CEO}	Collector-Emitter Voltage	55	V	
V _{EBO}	Emitter-Base Voltage	4.0	V	
Ic	Device Current	40	Α	
P _{DISS}	Power Dissipation	330	W	
Tj	Max. Operating Junction Temperature	200	°C	
T _{STG}	Storage Temperature	-65 to +150	°C	

THERMAL DATA

R _{th(j-c)}	Junction -Case Thermal Resistance	0.4	°C/W
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ELECTRICAL SPECIFICATION (T_{CASE} = 25 °C)

STATIC

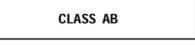
Symbol	Test Conditions	Min.	Тур.	Max.	Unit
BV _{CES}	I _C = 200 mA V _{BE} = 0 V	110			V
BV _{CEO}	I _C = 200 mA I _B = 0 mA	55			V
BV _{EBO}	$I_E = 20 \text{ mA}$ $I_C = 0 \text{ mA}$	4.0			V
I _{CEO}	V _{CE} = 30 V I _E = 0 mA	1.5		10	mA
I _{CES}	V _{CE} = 60 V I _E = 0 mA			10	mA
h _{FE}	V _{CE} = 6 V I _C = 10 A	15		45	

DYNAMIC

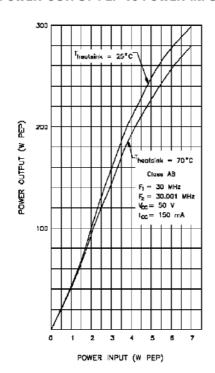
Symbol	Test Conditions	Min.	Тур.	Max.	Unit
Pout	V _{CC} = 50 V I _{CQ} = 150 mA f = 30 MHz	250			W
G _P *	V _{CC} = 50 V I _{CQ} = 150 mA P _{OUT} = 250 W PEP	14.5			dB
IMD*	V _{CC} = 50 V I _{CQ} = 150 mA P _{OUT} = 250 W PEP			-30	dBc
ηc [*]	V _{CC} = 50 V I _{CQ} = 150 mA P _{OUT} = 250 W PEP	37			%
C _{OB}	V _{CB} = 50 V f = 1 MHz			360	pF

^{*} Two Tone Method; f1 = 30.00 MHz; f2 = 30.001 MHz In Class C: GP Mi n. 13.5 dB, Efficiency 65%@ 30 MHz GP Mi n. 10 dB, Efficiency 57%@ 70 MHz

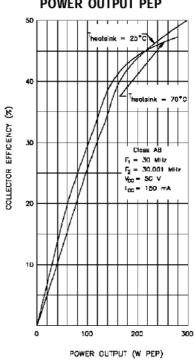
TYPICAL PERFORMANCE



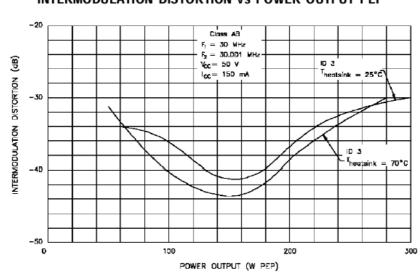
POWER OUTPUT PEP vs POWER INPUT



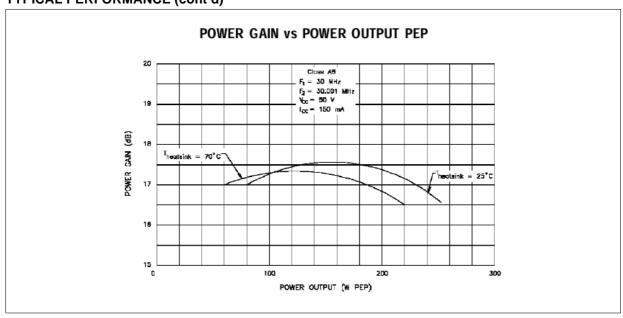
COLLECTOR EFFICIENCY vs POWER OUTPUT PEP



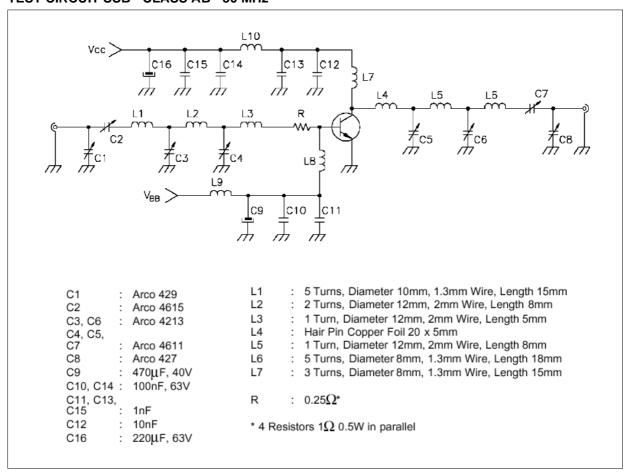
INTERMODULATION DISTORTION vs POWER OUTPUT PEP



TYPICAL PERFORMANCE (cont'd)



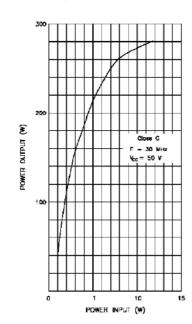
TEST CIRCUIT SSB - CLASS AB - 30 MHz



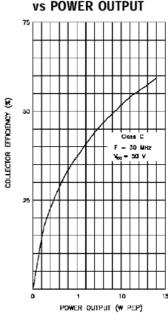
TYPICAL PERFORMANCE

CLASS C F = 30 MHz

POWER OUTPUT vs POWER INPUT

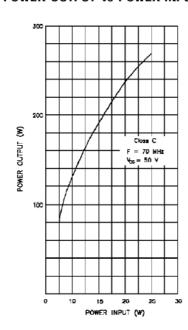


VS POWER OUTPUT

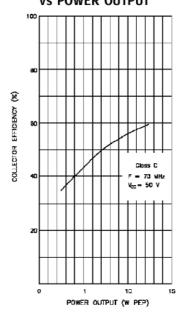


CLASS C F = 70 MHz

POWER OUTPUT vs POWER INPUT



COLLECTOR EFFICIENCY vs POWER OUTPUT

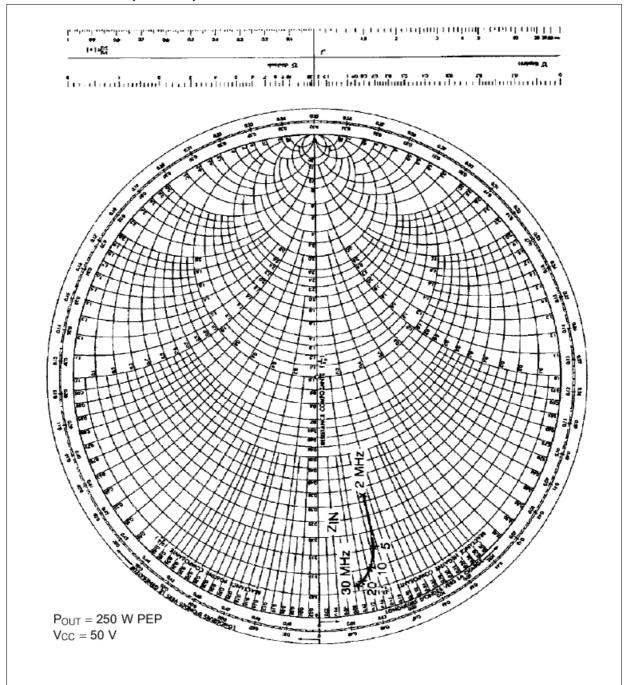


TYPICAL PERFORMANCE (cont'd) COLLECTOR BASE CAPACITANCE vs COLLECTOR BASE VOLTAGE 800 \mathfrak{S} VOLTAGE 800 COLLECTOR BASE 200 10 40 COLLECTOR BASE CAPACITANCE (pf) DC SAFE OPERATING AREA 1000 F - 1 NHz 800 COLLECTOR BASE VOLTAGE (V) 500 400 200

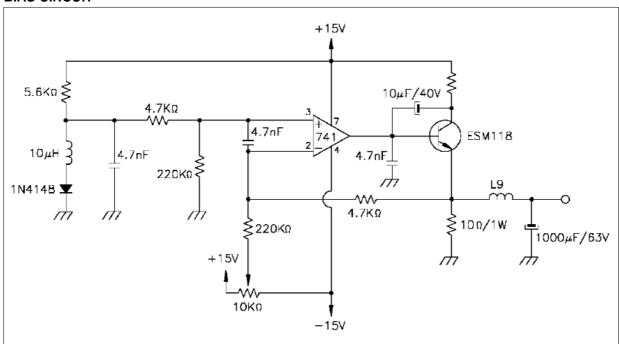
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COLLECTOR BASE CAPACITANCE (pf)

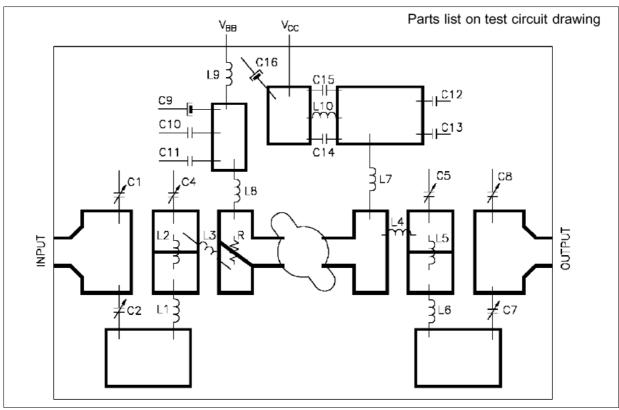
IMPEDANCE DATA (TYPICAL)



BIAS CIRCUIT

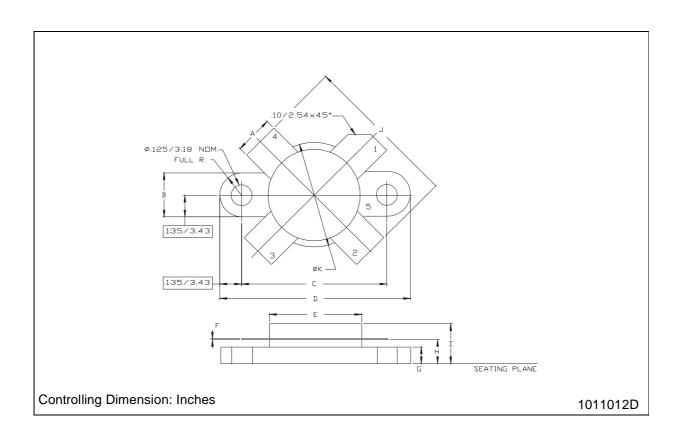


MOUNTING CIRCUIT



M177 (.550 DIA 4/L N/HERM W/FLG) MECHANICAL DATA

DIM.		mm			Inch	
	MIN.	TYP.	MAX	MIN.	TYP.	MAX
А	5.72		5.97	0.225		0.235
В	6.73		6.96	0.265		0.275
С	21.84		22.10	0.860		0.870
D	28.70		28.96	1.130		1.140
Е	13.84		14.10	0.545		0.555
F	0.08		0.18	0.003		0.007
G	2.49		2.74	0.098		0.108
Н	3.81		4.32	0.150		0.170
1			7.11			0.280
J	27.43		28.45	1.080		1.120
K	15.88		16.13	0.625		0.635



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