

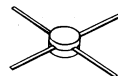
DESCRIPTION

The SD1115-2 is a 12.5 volt epitaxial silicon NPN planar transistor designed for both VHF and UHF portable/mobile communications use. This transistor will operate with high gain and efficiency under stable conditions at voltages of 7.5 and 12.5 voltages.

FEATURES

- * High gain at both VHF and UHF
- * Operates at both 7.5V and 12.5V
- * Infinite VSWR
- * Low profile stripline package
- * Hand-held or mobile communications use

Frequency = 175 MHz
Power Out = 3.0 Watts
Voltage = 12.5 Volts
Power Gain = 10.0 dB



Case : CB-299 (TO 117 SL)

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V _{CBO}	36.0	V
Collector-Emitter Voltage		V _{CEO}	18.0	V
Emitter-Base Voltage		V _{EBO}	4.0	V
Collector Current (Max.)		I _C	1.0	A
Total Device Dissipation at +25°C		P _{tot}	5.0	W
Storage and Junction Temperatures		T _{stg}	-65 to +150	°C
		T _j	+200	°C

Junction Case Thermal Resistance	R _{th(j-c)}	35.0	°C/W
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September 1981 - 1/6

ELECTRICAL CHARACTERISTICS $t_{\text{case}} = 25^{\circ}\text{C}$

STATIC

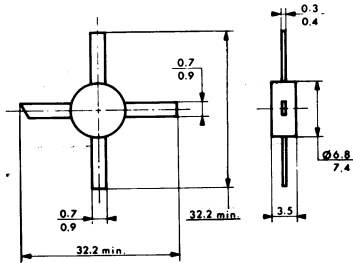
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
V_{CEO}^*	18.0	-	-	V	$I_{\text{C}} = 50 \text{ mA}$ $I_{\text{B}} = 0$
V_{CES}^*	36.0	-	-	V	$I_{\text{C}} = 50 \text{ mA}$ $V_{\text{BE}} = 0$
V_{EBO}	4.0	-	-	V	$I_{\text{E}} = 1 \text{ mA}$ $I_{\text{C}} = 0$
I_{CBO}	-	-	1.0	mA	$V_{\text{CB}} = 12.5 \text{ V}$ $I_{\text{E}} = 0$
h_{FE}	20.0	-	-	-	$V_{\text{CE}} = 5.0 \text{ V}$ $I_{\text{C}} = 100 \text{ mA}$

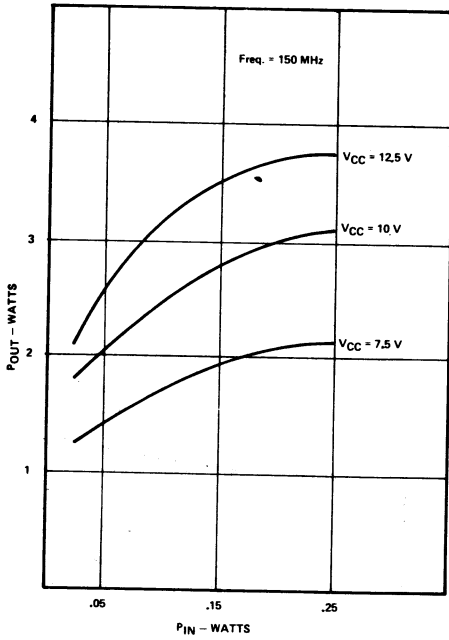
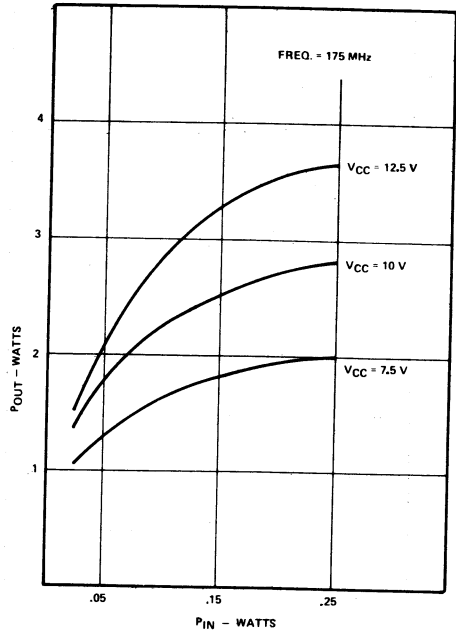
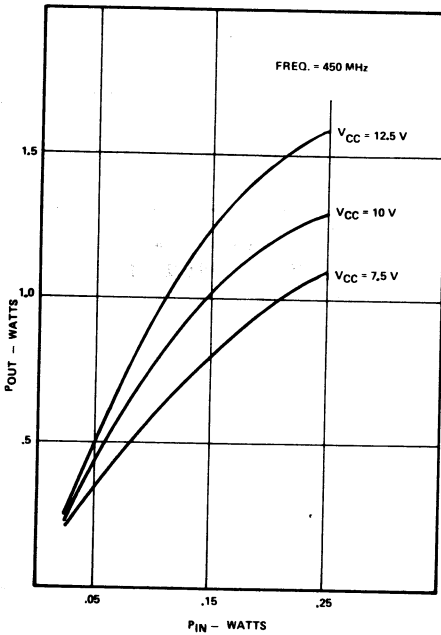
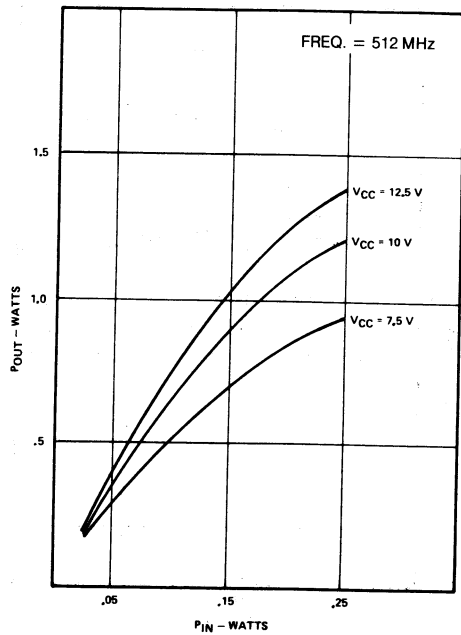
*Pulsed through 25 mH Inductor

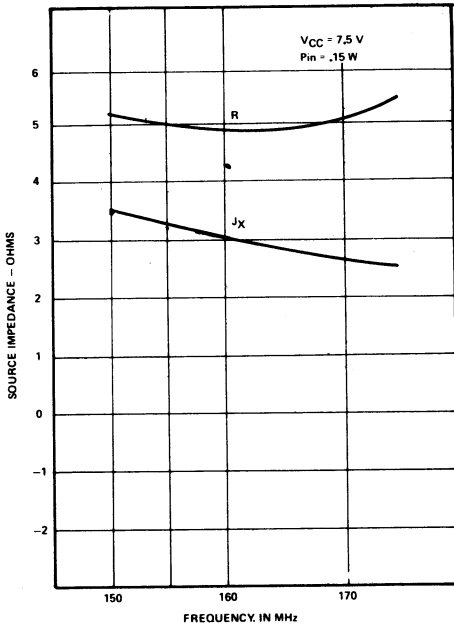
DYNAMIC

Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
P_{o}	2.0	-	-	W	$f = 175 \text{ MHz}$ $V_{\text{CE}} = 7.5 \text{ V}$
P_{g}	8.0	-	-	dB	$f = 175 \text{ MHz}$ $V_{\text{CE}} = 7.5 \text{ V}$
P_{o}	3.0	-	-	W	$f = 175 \text{ MHz}$ $V_{\text{CE}} = 12.5 \text{ V}$
P_{g}	10.0	-	-	dB	$f = 175 \text{ MHz}$ $V_{\text{CE}} = 12.5 \text{ V}$
C_{ob}	-	-	8.0	pF	$f = 1 \text{ MHz}$ $V_{\text{CB}} = 12.0 \text{ V}$ $I_{\text{E}} = 0$
C_{ib}	-	15.0	-	pF	$f = 1 \text{ MHz}$ $V_{\text{EB}} = 0.5 \text{ V}$ $I_{\text{C}} = 0$

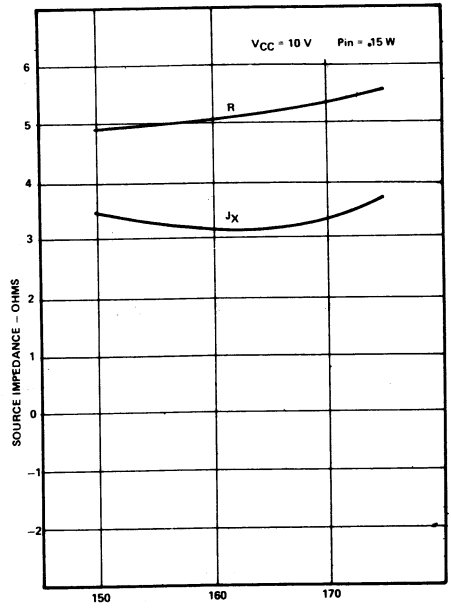
CASE DESCRIPTION

Dimensions
in millimetersCB-299
(TO 117 SL)

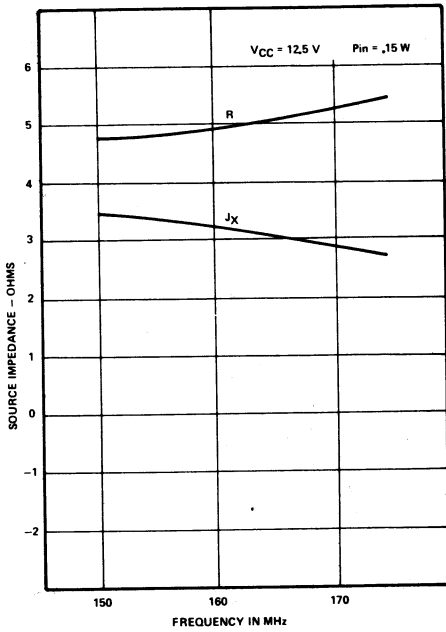
 P_{OUT} VS P_{IN} (150 MHz) P_{OUT} VS P_{IN} (175 MHz) P_{OUT} VS P_{IN} (450 MHz) P_{OUT} VS P_{IN} (512 MHz)



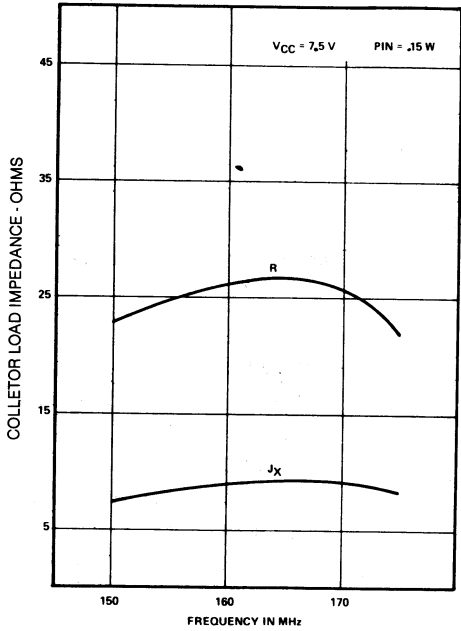
Z_S VS FREQ. (7.5 V)



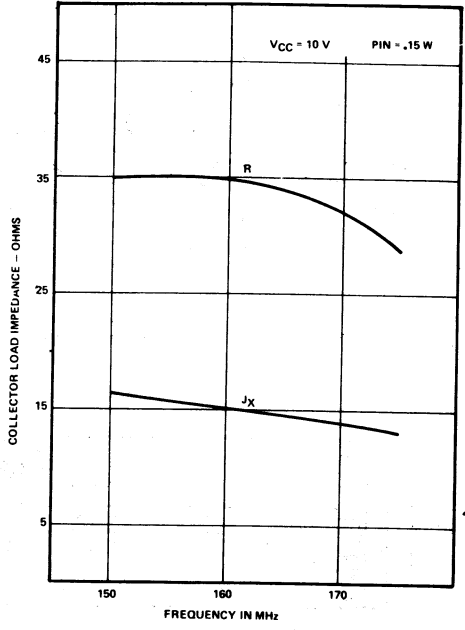
Z_S VS FREQ. (10V)



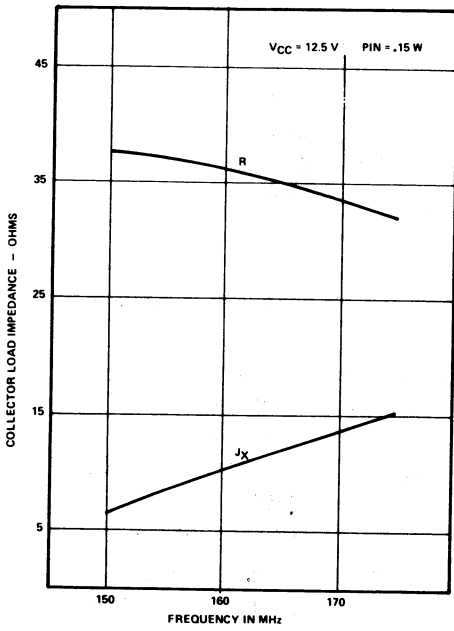
Z_S VS FREQ. (12.5V)



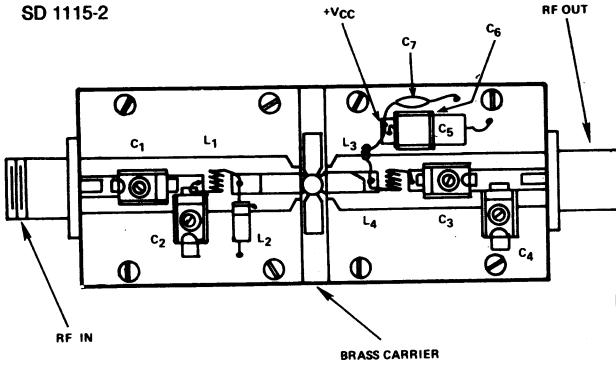
Z_{CL} VS FREQ. (7.5V)



Z_{CL} VS FREQ. (10V)

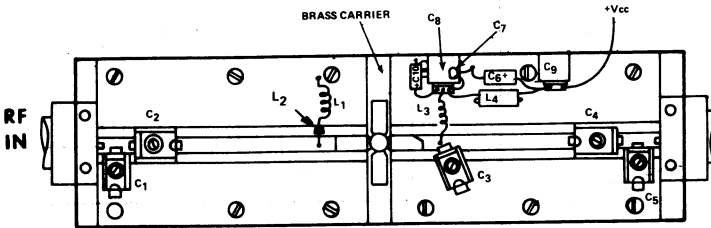
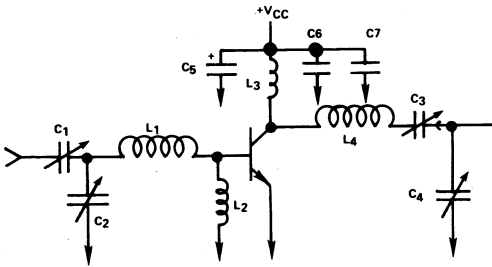


Z_{CL} VS FREQ. (12.5V)



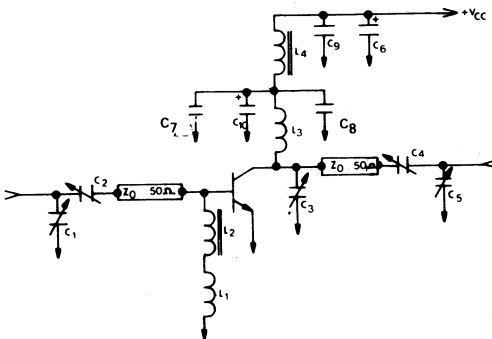
PARTS LIST (150-175 MHz)

- C1, C3 ARCO #403
- C2, C4 ARCO #402
- C5 ELECTROLYTIC - 10 μ f - 50 V
- C6 UNELCO 1000 pf
- C7 01 μ f DISC
- L1, L4 4T #20 ENAMELED WIRE, 3/16" I.D.
- L2 .33 μ H INDUCTOR
- L3 4-1/2T #22 ENAMELED WIRE, 1/8" I.D.



PARTS LIST (450-512 MHz)

- C1, C3, C5 ARCO #402
- C2 ARCO #400
- C4 ARCO #404
- C6, C10 ELECTROLYTIC 10 μ f
- C7 DISC .01 μ f
- C8, C9 UNELCO 1000 pf
- L1 12T #24 WIRE, .15" I.D.
- L2 FERROCUBE SLEEVE #3B ON LEAD OF L1
- L3 4T #20 T.C.B., .20" I.D.



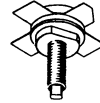
DESCRIPTION

The SD1169 is a 12.5 volt epitaxial silicon NPN planar transistor designed specifically for mobile communications use in the 66-88MHz frequency range. This transistor is nichrome ballasted for infinite VSWR protection at rated conditions.

FEATURES

- * 40 watts of power with greater than 6.0dB gain at 12.5 volts
- * Infinite VSWR at rated conditions
- * Stable performance
- * Low inductance stripline package
- * 30MHz to 88MHz operation

Frequency = 88 MHz
Power Out = 40 Watts
Voltage = 12.5 Volts
Power Gain = 6.0 dB



Case : CB-293 (.500 4LSTUD)

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	36.0	V
Collector-Emitter Voltage		V_{CEO}	18.0	V
Emitter-Base Voltage		V_{EBO}	4.0	V
Collector Current (Max.)		I_C	6.0	A
Total Device Dissipation at +25°C		P_{tot}	80.0	W
Storage and Junction Temperatures		T_{stg}	-65 to +150	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	2.2	°C/W
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September 1981 - 1/4

ELECTRICAL CHARACTERISTICS $t_{case} = 25^{\circ}C$

STATIC

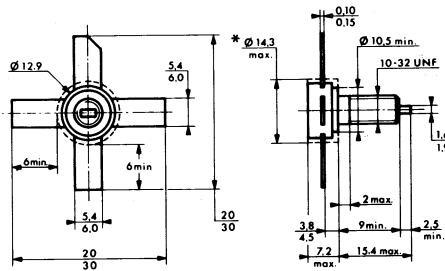
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
BV_{CEO*}	18.0	-	-	V	$I_C = 100mA$ $I_B = 0$
BV_{CES*}	36.0	-	-	V	$I_C = 50mA$ $V_{BE} = 0$
BV_{EBO}	4.0	-	-	V	$I_E = 10mA$ $I_C = 0$
I_{CBO}	-	-	5.0	mA	$V_{CB} = 15.0 V$ $I_E = 0$
h_{FE}	5.0	-	-	-	$V_{CE} = 5.0 V$ $I_C = 1A$

* Pulsed through 25 mH Inductor

DYNAMIC

Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
P_o	40.0	-	-	W	$f = 88 MHz$ $V_{CE} = 12.5 V$
P_g	6.0	-	-	dB	$f = 88 MHz$ $V_{CE} = 12.5 V$
Z_s		$0.85 + j0.3$		ohms	$f = 88 MHz$ $V_{CE} = 12.5 V$ $P_i = 5 W$
Z_{c1}		$1.73 + j1.52$		ohms	$f = 88 MHz$ $V_{CE} = 12.5 V$ $P_i = 5 W$
C_{ob}	-	-	200	pF	$f = 1 MHz$ $V_{CB} = 12.5 V$ $I_E = 0$
C_{ib}	-	640	-	pF	$f = 1 MHz$ $V_{EB} = 0.5 V$ $I_C = 0$

CASE DESCRIPTION

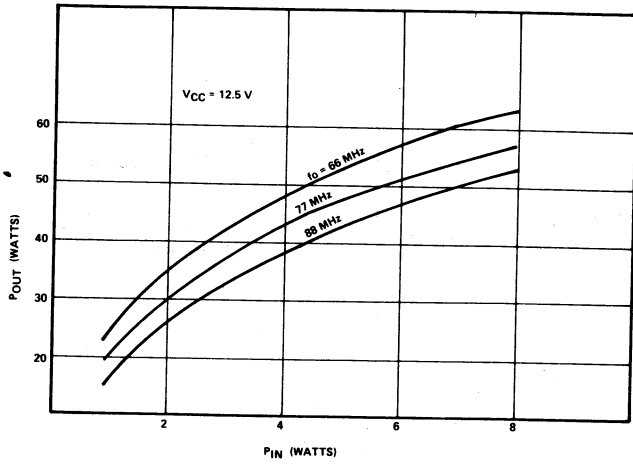


Dimensions in millimeters

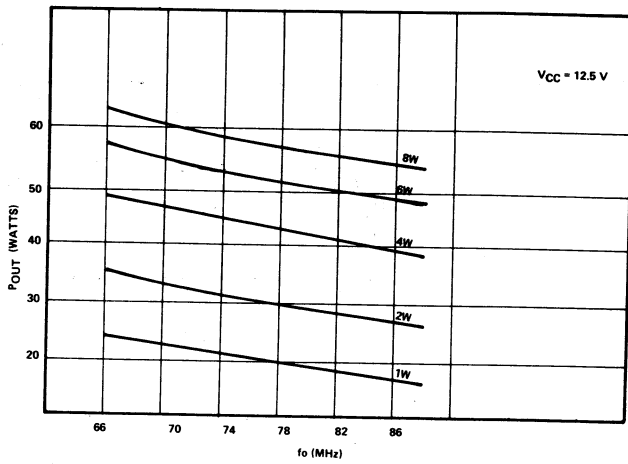
* Leads must not be bent, cut or used in this area

CB-293
(.500 4LSTUD)

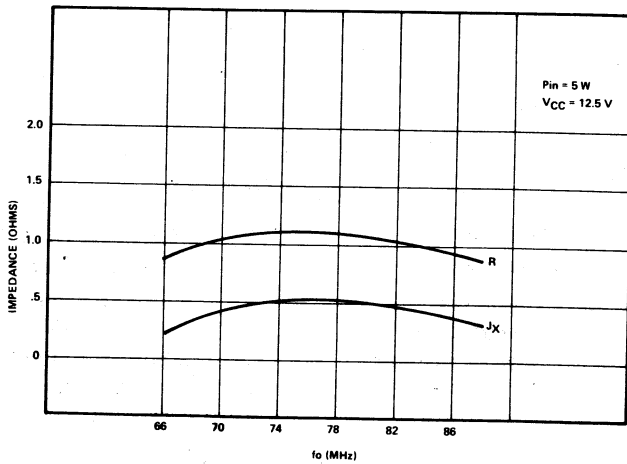
POWER OUTPUT VS POWER INPUT



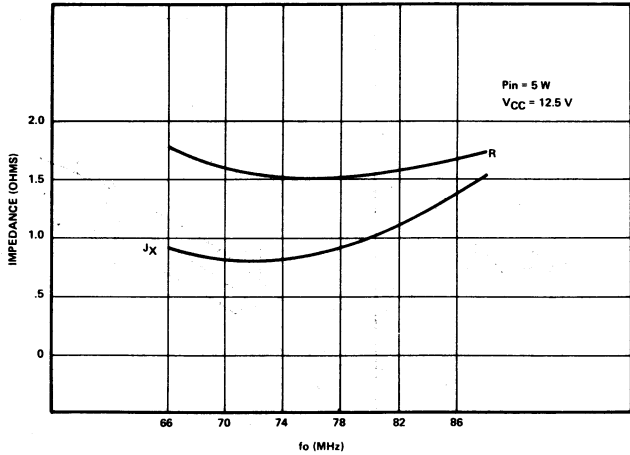
POWER OUTPUT VS FREQUENCY



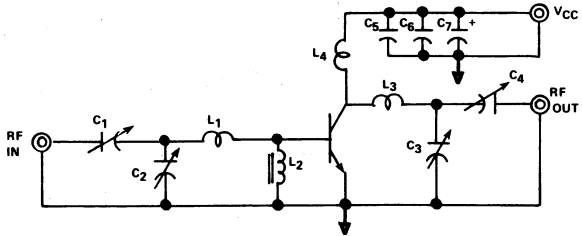
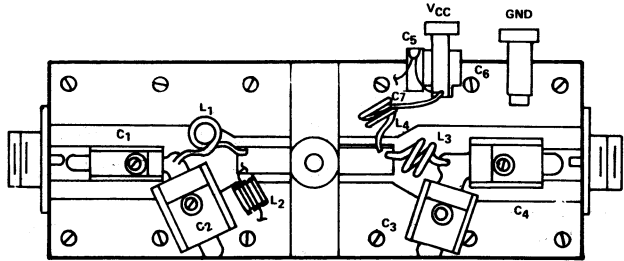
SOURCE IMPEDANCE VS FREQUENCY



COLLECTOR LOAD
IMPEDANCE VS FREQUENCY



TEST CIRCUIT LAYOUT



COMPONENT LIST

- | | | | |
|-------------------------------------|-----------------------|----------------------|--|
| C₁ | ARCO 423 | C₇ | 10μF ELECTROLYTIC |
| C₂, C₃ | ARCO 465 | L₁ | 1 TURN, #14 AWG, TINNED, 1/4" ID |
| C₄ | ARCO 463 | L₂ | 8 TURNS, #26 AWG, ENAMELED, ON FERROX CUBE SLEEVE #3B |
| C₅ | .022 μF ERIE | L₃ | 2 TURNS, #14 AWG, TINNED, 1/4" ID |
| C₆ | 1000 PF UNELCO | L₄ | 2 TURNS, #14 AWG, TINNED, 1/4" ID |

DESCRIPTION

The SD1232 is a silicon NPN transistor designed to be utilized in broadband linear amplifier circuitry such as CATV trunk, bridger and line extender amplifiers.

FEATURES

- * High gain bandwidth product
- * Low intermodulation, low cross-modulation distortion
- * Low noise figure
- * High power gain

$$f_T = 2.0 \text{ GHz}$$

$$X\text{-MOD} = -53 \text{ dB}$$

$$G_{VE} = 9.0 \text{ dB}$$



Case: CB-7 (TO 39)

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	40.0	V
Collector-Emitter Voltage		V_{CEO}	20.0	V
Emitter-Base Voltage		V_{EBO}	3.5	V
Collector Current (Max.)		I_C	0.1	A
Total Device Dissipation at +25°C		P_{tot}	1.5	W
Storage and Junction Temperatures		T_{stg}	-65 to +200	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	117.0	°C/W
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September 1981 - 1/4

ELECTRICAL CHARACTERISTICS $t_{case} = 25^{\circ}C$

STATIC

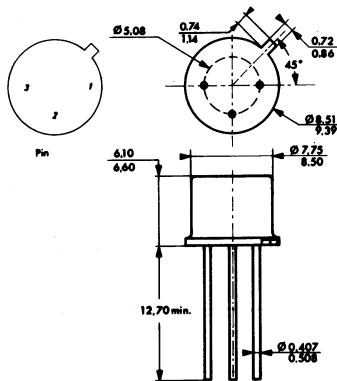
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
BV_{CEO*}	20.0	-	-	V	$I_C = 5mA$ $I_B = 0$
BV_{CBO}	40.0	-	-	V	$I_C = .1mA$ $I_E = 0$
BV_{EBO}	3.5	-	-	V	$I_E = .1mA$ $I_C = 0$
I_{CBO}	-	-	.1	mA	$V_{CB} = 20.0V$ $I_E = 0$
h_{FE}	50.0	150.0	-	-	$V_{CE} = 10.0V$ $I_C = 40mA$

*Pulsed through 25 mH Inductor

DYNAMIC

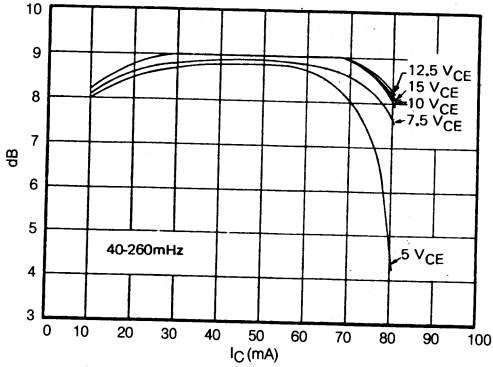
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
G_{VE}	-	9.0	-	dB	$f = 40-260MHz$ $V_{CE} = 10V$ $I_C = 40mA$
X-MOD	-	-	-53.0	dB	$f = 40-260MHz$ $V_{CE} = 10V$ $I_C = 40mA$
2ND OD	-	-	-40.0	dB	$f = 200MHz$ $V_{CE} = 10V$ $I_C = 40mA$
f_T	2000.0	2200.0	-	MHz	$f = 1MHz$ $V_{CE} = 10V$ $I_C = 40mA$
C_{ob}	-	2.0	3.0	pF	$f = 1MHz$ $V_{CB} = 30.0V$ $I_E = 0$
C_{ib}	-	5.0	7.0	pF	$f = 1MHz$ $V_{EB} = 0.5V$ $I_C = 0$

CASE DESCRIPTION

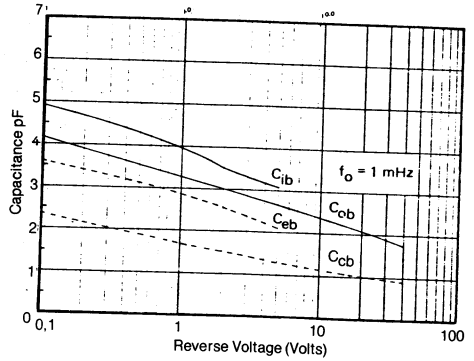


Dimensions in millimeters

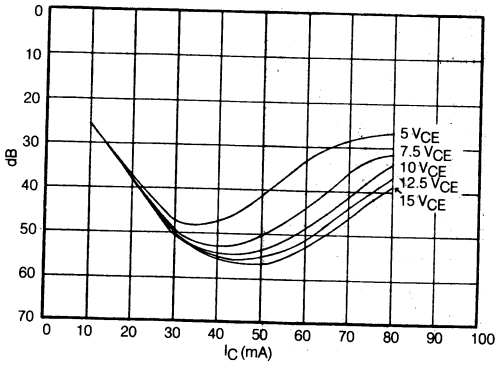
CB-7
(TO 39)



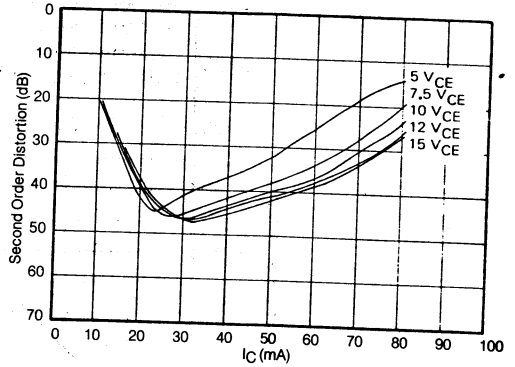
GAIN (dB) VS I_C



CAPACITANCE VS VOLTAGE

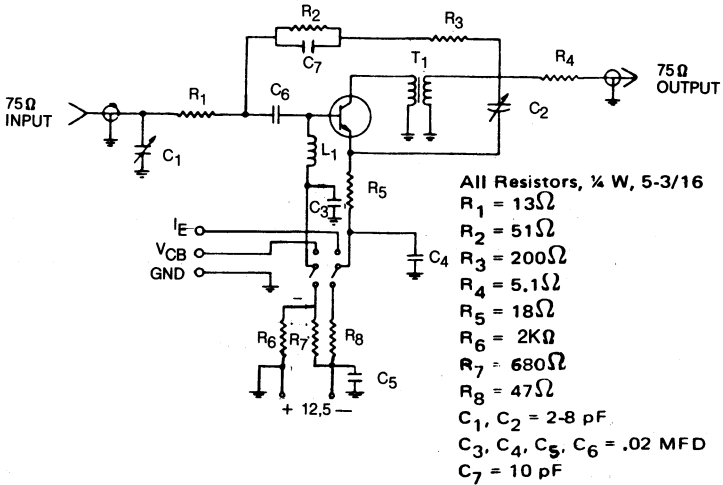


TRIPLE BEAT RATIO VS I_C
+ 50dBmV/CHANNEL



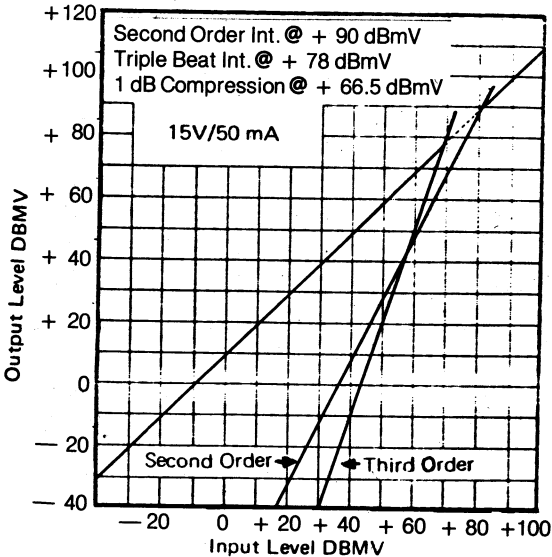
SECOND ORDER DISTORTION VS I_C
OUTPUT LEVEL = +50 dBmV

TEST CIRCUIT



$L_1 = 30T=30W$ on .125" Dia. Periodic Form

$T_1 =$ Ferrite Toroidal Transformer
 Q_1 Material 1/4" OD BT Pri, 9T Sec.



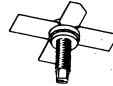
DESCRIPTION

The SD1234 is an epitaxial silicon NPN planar transistor designed primarily for UHF communication transmitters. This device utilizes ballasted emitter resistors and improved metallization systems to achieve infinite VSWR under severe operating conditions.

FEATURES

- * Designed for UHF military and commercial equipment
- * 3.0 watt (min.) with greater than 10.0dB gain
- * Withstands infinite VSWR under operating conditions
- * Low inductance stripline package
- * All leads electrically isolated from stud

Frequency = 470 MHz
Power Out = 3 Watts
Voltage = 12.5 Volts
Power Gain = 10.0dB



Case : CB-312 (.280 4LSTUD (B))

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	25.0	v
Collector-Emitter Voltage		V_{CEO}	16.0	v
Emitter-Base Voltage		V_{EBO}	4.0	v
Collector Current (Max.)		I_C	.75	A
Total Device Dissipation at +25°C		P_{tot}	5.0	W
Storage and Junction Temperatures		T_{stg}	-65 to +150	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	35.0	°C/W
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September 1981 - 1/4

ELECTRICAL CHARACTERISTICS $t_{\text{case}} = 25^{\circ}\text{C}$

STATIC

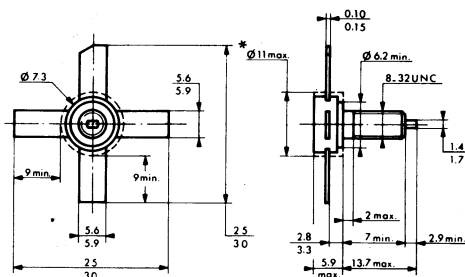
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
BV_{CEO}^*	16.0	-	-	V	$I_{\text{C}} = 25\text{mA}$ $I_{\text{B}} = 0$
BV_{CES}^*	30.0	-	-	V	$I_{\text{C}} = 5\text{mA}$ $V_{\text{BE}} = 0$
BV_{EBO}	4.0	-	-	V	$I_{\text{E}} = 1\text{mA}$ $I_{\text{C}} = 0$
I_{CBO}	-	-	1.0	mA	$V_{\text{CB}} = 15.0\text{V}$ $I_{\text{E}} = 0$
h_{FE}	20	-	-	-	$V_{\text{CE}} = 5.0\text{V}$ $I_{\text{C}} = 100\text{mA}$

* Pulsed through 25 mH Inductor

DYNAMIC

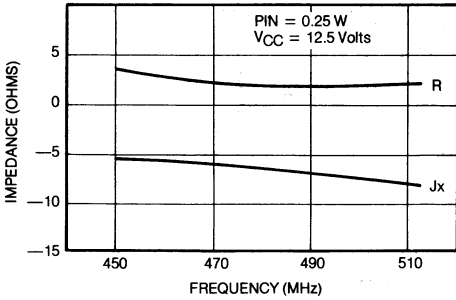
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
P_{o}	3.0	-	-	W	$f = 470\text{MHz}$ $V_{\text{CE}} = 12.5\text{V}$
P_{g}	10.0	-	-	dB	$f = 470\text{MHz}$ $V_{\text{CE}} = 12.5\text{V}$
Z_{s}		$2.0 - j6.0$		ohms	$f = 470\text{MHz}$ $V_{\text{CE}} = 12.5\text{V}$ $P_{\text{i}} = .25\text{W}$
Z_{cl}		$15 + j8.2$		ohms	$f = 470\text{MHz}$ $V_{\text{CE}} = 12.5\text{V}$ $P_{\text{i}} = .25\text{W}$
C_{ob}	-	6.0	-	pF	$f = 1\text{MHz}$ $V_{\text{CB}} = 12.0\text{V}$ $I_{\text{E}} = 0$
C_{ib}	-	20.0	-	pF	$f = 1\text{MHz}$ $V_{\text{EB}} = 0.5\text{V}$ $I_{\text{C}} = 0$

CASE DESCRIPTION

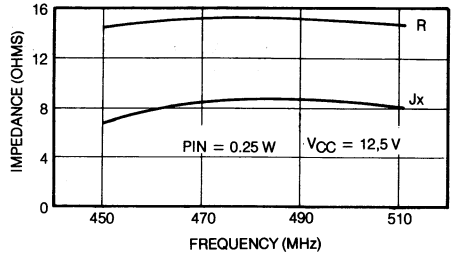
Dimensions
in millimeters

* Leads must not be bent, cut or used in this area

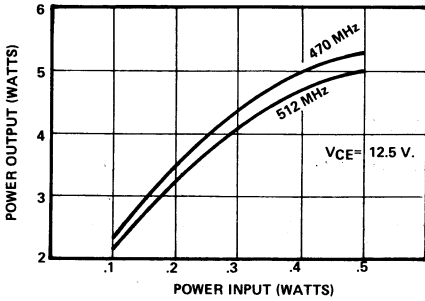
CB-312
(280 4LSTUD (B))



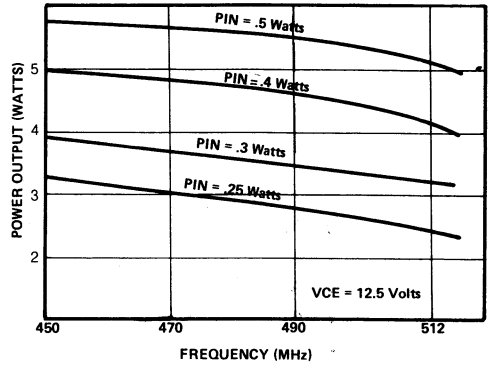
SOURCE IMPEDANCE VS FREQUENCY



COLLECTOR LOAD IMPEDANCE VS FREQUENCY

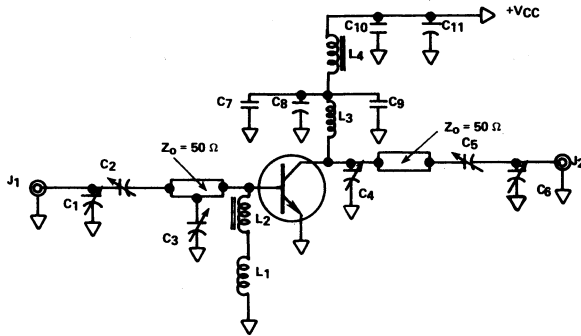
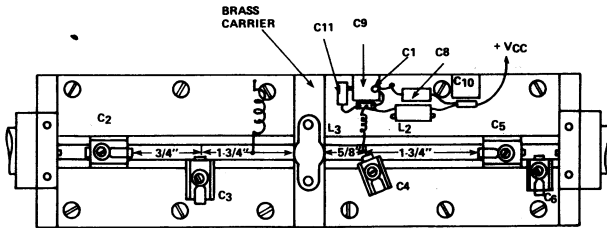


POWER OUTPUT VS POWER INPUT



POWER OUTPUT VS FREQUENCY

TEST FIXTURE – 450-512 MHz



PARTS LIST

3 EA.	C ₂ , C ₄ , C ₆	ARCO TRIMMER #402	1.5 pf – 20 pf
1 EA.	C ₃	ARCO TRIMMER #400	0.9 pf – 7.0 pf
1 EA.	C ₅	ARCO TRIMMER #404	8.0 pf – 60 pf
2 EA.	C ₉ , C ₁₀	UNELCO	1000 pf
2 EA.	C ₈ , C ₁₁	ELECTROLYTIC	10 μf MIN
1 EA.	C ₇	DISC	.01 μf
1 EA.	L ₁	MOLDED CHOKE	1.0 μh
1 EA.	L ₂	VK200 RFC	
1 EA.	L ₃	4 TURNS 20 TR ON .20" DIA.	

DESCRIPTION

This line of NPN silicon transistors is designed primarily for applications in the VHF/UHF frequency range. Primarily used in low noise, linear, broadband amplifiers, the device is capable of being utilized in circuits where high gain and low intermodulation products are required, such as MATV amplifiers.

FEATURES

- * High gain bandwidth product, f_T
- * Low noise figure
- * UHF package TO-72
- * Low output capacitance

Frequency = 200 MHz
 Voltage = 5.5 Volts
 Power Gain = 20.0 dB
 Noise Figure = 5.0 dB



Case : CB-4 (TO-72)

ABSOLUTE RATINGS	$t_{case} = 25^\circ C$	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	30.0	V
Collector-Emitter Voltage		V_{CEO}	15.0	V
Emitter-Base Voltage		V_{EBO}	3.5	V
Collector Current (Max.)		I_C	.05	A
Total Device Dissipation at +25°C		P_{tot}	.20	W
Storage and Junction Temperatures		T_{stg}	-65 to +200	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	875.0	°C/W
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September 1981 - 1/2

ELECTRICAL CHARACTERISTICS $t_{case} = 25^{\circ}C$

STATIC

Symbols	Values			Units	Test Conditions	
	Min.	Typ.	Max.			
V_{CE0*}	15.0	-	-	V	$I_C = 10mA$	$I_B = 0$
V_{CBO*}	30.0	-	-	V	$I_C = 0.1mA$	$I_E = 0$
V_{EBO}	3.5	-	-	V	$I_E = 0.1mA$	$I_C = 0$
I_{CBO}	-	-	0.1	μA	$V_{CB} = 15.0V$	$I_E = 0$
h_{FE}	30.0	-	300.0	-	$V_{CE} = 10.0V$	$I_C = 10mA$

*Pulsed through 25 mH Inductor

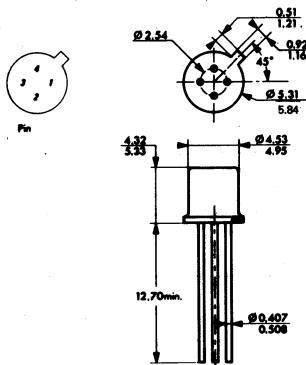
DYNAMIC --- SD1300

Symbols	Values			Units	Test Conditions	
	Min.	Typ.	Max.			
G_{PE}	-	20.0	-	dB	$f = 200MHz$	$V_{CE} = 5.5V$ $I_C = 15mA$
NF	-	-	5.0	dB	$f = 450MHz$	$V_{CE} = 5.0V$ $I_C = 2mA$
f_T	1500.0	-	-	MHz	$f = 200MHz$	$V_{CE} = 10.0V$ $I_C = 5mA$
C_{ob}	-	-	1.8	pF	$f = 1MHz$	$V_{CB} = 10.0V$ $I_E = 0$
C_{ib}	-	-	1.8	pF	$f = 1MHz$	$V_{EB} = 0.5V$ $I_C = 0$

DYNAMIC --- SD1301

G_{PE}	-	20.0	-	dB	$f = 200MHz$	$V_{CE} = 5.5V$ $I_C = 15mA$
NF	-	-	5.0	dB	$f = 450MHz$	$V_{CE} = 5.0V$ $I_C = 2mA$
f_T	1500.0	2000.0	-	MHz	$f = 200MHz$	$V_{CE} = 10.0V$ $I_C = 5mA$
C_{ob}	-	-	1.0	pF	$f = 1MHz$	$V_{CB} = 10.0V$ $I_E = 0$
C_{ib}	-	-	1.0	pF	$f = 1MHz$	$V_{EB} = 0.5V$ $I_C = 0$

CASE DESCRIPTION



Dimensions in millimeters

CB-4
(TO-72)

DESCRIPTION

The SD1303 is a silicon NPN transistor designed primarily for applications in the VHF/UHF frequency range. Primarily used in low noise, linear, broadband amplifiers, the device is capable of being utilized in circuits where high gain and low intermodulation products are required, such as MATV amplifiers.

FEATURES

- * High gain bandwidth product, f_T
- * Low noise figure
- * UHF package TO-72
- * Low output capacitance

Frequency = 450 MHz
Voltage = 6.0 Volts
Current = 1.5 mA
Power* Gain = 15.0 dB



Case : CB-4 (TO-72)

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	30.0	V
Collector-Emitter Voltage		V_{CEO}	15.0	V
Emitter-Base Voltage		V_{EBO}	3.5	V
Collector Current (Max.)		I_C	.05	A
Total Device Dissipation at +25°C		P_{tot}	.20	W
Storage and Junction Temperatures		T_{stg}	-65 to +200	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	875.0	°C/W
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September 1981 - 1/2

ELECTRICAL CHARACTERISTICS $t_{\text{case}} = 25^{\circ}\text{C}$

STATIC

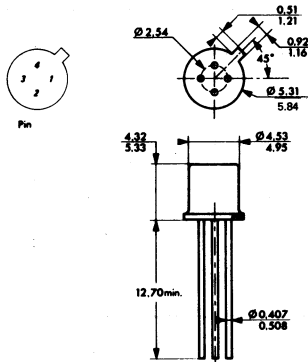
Symbols	Values			Units	Test Conditions	
	Min.	Typ.	Max.			
V_{CEO}^*	15.0	-	-	V	$I_{\text{C}} = 1\text{mA}$	$I_{\text{B}} = 0$
V_{CBO}^*	30.0	-	-	V	$I_{\text{C}} = .1\text{mA}$	$I_{\text{E}} = 0$
V_{EBO}	3.5	-	-	V	$I_{\text{E}} = .1\text{mA}$	$I_{\text{C}} = 0$
I_{CBO}	-	-	0.1	mA	$V_{\text{CB}} = 15.0\text{V}$	$I_{\text{E}} = 0$
h_{FE}	30.0	-	300.0		$V_{\text{CE}} = 10.0\text{V}$	$I_{\text{C}} = 10\text{mA}$

* Pulsed through 25 mH Inductor

DYNAMIC

Symbols	Values			Units	Test Conditions		
	Min.	Typ.	Max.				
P_{g}	15.0	18.0	-	dB	$f = 450\text{MHz}$	$V_{\text{CE}} = 6.0\text{V}$	$I_{\text{C}} = 1.5\text{mA}$
N_{F}		3.0	4.0	dB	$f = 450\text{MHz}$	$V_{\text{CE}} = 6.0\text{V}$	$I_{\text{C}} = 1.5\text{mA}$
f_{T}	2500.0	3000.0	-	MHz	$f = 200\text{MHz}$	$V_{\text{CE}} = 10.0\text{V}$	$I_{\text{C}} = 10\text{mA}$
C_{ob}	-	.45	.80	pF	$f = 1\text{MHz}$	$V_{\text{CB}} = 6.0\text{V}$	$I_{\text{E}} = 0$
C_{ib}	-	.70	1.00	pF	$f = 1\text{MHz}$	$V_{\text{EB}} = 0.5\text{V}$	$I_{\text{C}} = 0$

CASE DESCRIPTION



Dimensions in millimeters

CB-4
(TO-72)

**DESCRIPTION**

The SD1309 is an NPN silicon transistor designed primarily for applications in the UHF frequency range. Primarily used in low noise, linear, broadband amplifiers, the device is capable of being utilized in circuits, such as antenna oscilloscope and spectrum analyzer amplifiers.

FEATURES

- * High gain bandwidth product, f_T
- * Low noise figure
- * Low feedback capacitance
- * TO72 package

f_T = 3000 MHz
 Frequency = 200 MHz
 Voltage = 10.0 Volts
 Current = 2.0 mA



Case : CB-4 (TO-72)

ABSOLUTE RATINGS	t case = 25°C	SYMBOLS	VALUES	UNITS
Collector-Base Voltage		V_{CBO}	25.0	V
Collector-Emitter Voltage		V_{CEO}	12.0	V
Emitter-Base Voltage		V_{EBO}	3.5	V
Peak Collector Current (Max.)		I_C	50.0	mA
Total Device Dissipation at +25°C		P_{tot}	200.0	mW
Storage and Junction Temperatures		T_{stg}	-65 to +200	°C
		T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	875.0	°C/W
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September 1981 - 1/2

ELECTRICAL CHARACTERISTICS $t_{\text{case}} = 25^{\circ}\text{C}$

STATIC

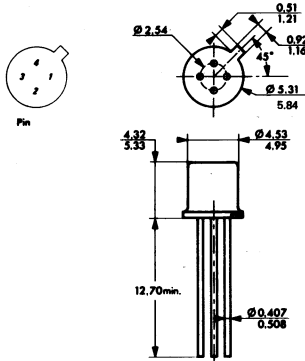
Symbols	Values			Units	Test Conditions	
	Min.	Typ.	Max.			
V_{CEO}^*	12.0	-	-	V	$I_{\text{C}} = 3.0\text{mA}$	$I_{\text{B}} = 0$
V_{CBO}^*	25.0	-	-	V	$I_{\text{C}} = 0.01\text{mA}$	$I_{\text{E}} = 0$
V_{EBO}	3.5	-	-	V	$I_{\text{E}} = 0.01\text{mA}$	$I_{\text{C}} = 0$
I_{CBO}	-	-	0.1	mA	$V_{\text{CB}} = 15.0\text{V}$	$I_{\text{E}} = 0$
h_{FE}	25.0	-	-	-	$V_{\text{CE}} = 1.0\text{V}$	$I_{\text{C}} = 0.5\text{mA}$

* Pulsed through 25 mH Inductor

DYNAMIC

Symbols	Values			Units	Test Conditions	
	Min.	Typ.	Max.			
N.F.	-	-	3.5	dB	$f = 470\text{MHz}$	$V_{\text{CE}} = 0.98\text{V}$
f_{T}	3000.0	-	-	MHz	$f = 200\text{MHz}$	$V_{\text{CE}} = 10.0\text{V}$ $I_{\text{C}} = 2.0\text{mA}$
C_{cb}	-	-	1.4	pF	$f = 1\text{MHz}$	$V_{\text{CB}} = 0\text{V}$ $I_{\text{E}} = 0$
C_{eb}	-	-	0.8	pF	$f = 1\text{MHz}$	$V_{\text{EB}} = 0.5\text{V}$ $I_{\text{C}} = 0$

CASE DESCRIPTION



Dimensions in millimeters

CB-4
(TO-72)

DESCRIPTION

The SD1375 is a PNP silicon transistor designed primarily for applications in the VHF-UHF frequency range. The device is used in high-gain, low-noise amplifier, oscillator and mixer applications.

FEATURES

- * Low noise figure -- 3.5dB @ 450MHz
- * High power gain -- 17dB @ 450MHz
- * High gain bandwidth product
- * Low collector base capacitance -- C_{CB}

Frequency = 450 MHz
Current = 2.0 mA
Voltage = 10.0 Volts
Power Gain = 17.0 dB



Case : CB-4 (TO-72)

ABSOLUTE RATINGS	t case = 25°C		
	SYMBOLS	VALUES	UNITS
Collector-Base Voltage	V_{CBO}	30.0	V
Collector-Emitter Voltage	V_{CEO}	30.0	V
Emitter-Base Voltage	V_{EBO}	3.0	V
Collector Current (Max.)	I_C	.03	A
Total Device Dissipation at +25°C	P_{tot}	.20	W
Storage and Junction Temperatures	T_{stg}	-65 to +200	°C
	T_j	+200	°C

Junction Case Thermal Resistance	$R_{th(j-c)}$	875.0	°C/W
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September 1981 - 1/2

ELECTRICAL CHARACTERISTICS $t_{case} = 25^{\circ}C$

STATIC

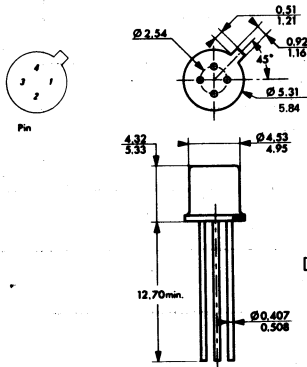
Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
BV_{CEO*}	30.0	-	-	V	$I_C = 1mA$ $I_B = 0$
BV_{CBO*}	30.0	-	-	V	$I_C = 0.1mA$ $I_E = 0$
BV_{EBO}	3.0	-	-	V	$I_E = 0.1mA$ $I_C = 0$
I_{CBO}	-	-	0.1	mA	$V_{CB} = 10.0V$ $I_E = 0$
h_{FE}	30.0	-	300.0	-	$V_{CE} = 10.0V$ $I_C = 2mA$

*Pulsed through 25 mH Inductor

DYNAMIC

Symbols	Values			Units	Test Conditions
	Min.	Typ.	Max.		
P_g	17.0	-	-	dB	$f = 450MHz$ $V_{CE} = 10.0V$ $I_C = 2.0mA$
N_F	-	-	3.5	dB	$f = 450MHz$ $V_{CE} = 10.0V$ $I_C = 2.0mA$
f_T	1200.0	1500.0	-	MHz	$f = 200MHz$ $V_{CE} = 10.0V$ $I_C = 2.0mA$
C_{ob}	-	0.4	0.8	pF	$f = 1MHz$ $V_{CB} = 10.0V$ $I_E = 0$

CASE DESCRIPTION



Dimensions in millimeters

CB-4
(TO-72)