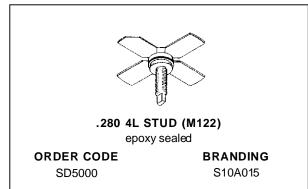


## **SD5000**

## RF & MICROWAVE TRANSISTORS GENERAL PURPOSE LINEAR APPLICATIONS

PRELIMINARY DATA

- GOLD METALLIZATION
- EMITTER SITE BALLASTING
- INTERNAL INPUT MATCHING
- OVERLAY GEOMETRY
- METAL/CERAMIC PACKAGE
- COMMON EMITTER CONFIGURATION
- Pout = 1.5 W MIN. WITH 9.5 dB GAIN



#### **DESCRIPTION**

The SD5000 is a NPN Silicon Transistor designed for high gain linear performance at 1000 MHz.

This part uses gold metallized die and polysilicon site ballasting to achieve high reliability and ruggedness.

The SD5000 can be used for applications such as Telecommunications, Radar, ECM, Space and other commercial and military systems.

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

Symbol	Parameter	Value	Unit
Vсво	Collector-Base Voltage	50	V
V <sub>CES</sub>	Collector-Emitter Voltage	50	V
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V
Ic	Device Current	1.0	Α
Poiss	Power Dissipation	7.0	W
TJ	Junction Temperature	+200	°C
T <sub>STG</sub>	Storage Temperature	- 65 to +150	°C

#### THERMAL DATA

R <sub>TH(i-c)</sub>	Junction-Case Thermal Resistance	25	°C/W
(J-C)	Carlotter Case Thermal Resistance		] 0, , ,

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## SD5000

## **ELECTRICAL SPECIFICATIONS** (Tcase = 25°C)

## STATIC

Symbol	Test Conditions	Value			Unit
Symbol	ymbol rest conditions	Min.	Тур.	Max.	01111
ВУсво	$I_C = 10mA$	50	_	_	V
BV <sub>EBO</sub>	$I_E = 5mA$	3.5	_	_	V
BV <sub>CES</sub>	I <sub>C</sub> = 10mA	50	_	_	V
BV <sub>CEO</sub>	$I_C = 5mA$	23	_	_	V
Ісво	V <sub>CB</sub> = 28V	_	0.2	_	mA
hFE	$V_{CE} = 5V$ $I_{C} = 100 \text{mA}$	18	_	200	_

### DYNAMIC

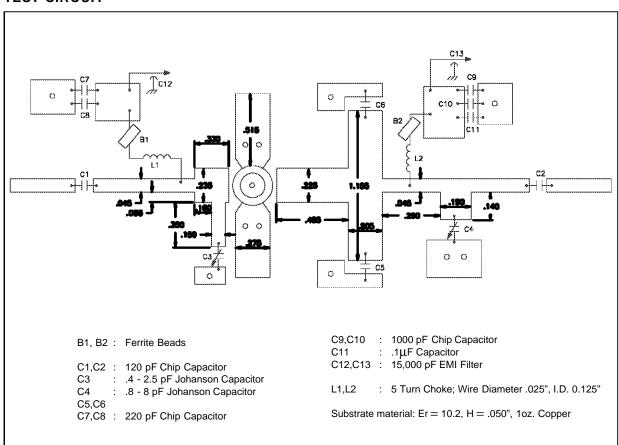
Symbol		Test Conditions		Value		Unit	
Syllibol		lest Conditions			Тур.	Max.	Unit
P <sub>OUT</sub> 1dB	f = 1 GHz	$V_{CC} = 20 \text{ V}$	$I_C=220mA$	1.5			W
GP	f = 1 GHz	$V_{CC} = 20 V$	$I_C = 220 \text{ mA}$	9.5	_		dB
VSWR	f = 1 GHz	V <sub>CC</sub> = 20 V	I <sub>C</sub> = 220 mA	_	_	25:1	_
Сов	f = 1 MHz	$V_{CB} = 20 \text{ V}$		_	_	4.0	pF

:

#### **IMPEDANCE DATA**

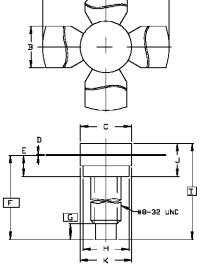
FREQ.	Z <sub>IN</sub> (Ω)	Z <sub>CL</sub> (Ω)
1000 MHz	4.0 + j 3.3	20.8 + j 33.3

#### **TEST CIRCUIT**



#### PACKAGE MECHANICAL DATA

Ref.: Dwg. No. 12-0122



45 <sup>0</sup>

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	MINIMUM Inches/mm	MAXIMUM Inches/mm	
Α	1.010/25,65	1.055/26,80	
В	.220/5,59	.230/5,84	
U	.270/6,86	285/7.24	
D	.003/0,08	.007/0,18	
E	.117/2,97	.137/3,48	
F	572/14,53		
G	.130/3,30		
Н	.245/6,22	.255/6,48	
I	.640/16,26		
7	.175/4,45	.217/5,51	
к	.275/6,99	285/7.24	

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