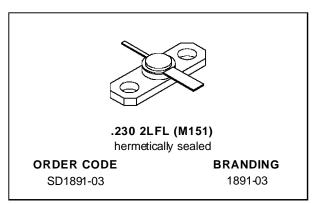
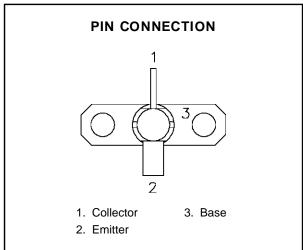


# SD1891-03

# RF & MICROWAVE TRANSISTORS 1.6 GHz SATCOM APPLICATIONS

- 1.65 GHz
- 28 VOLTS
- GOLD METALLIZED SYSTEM
- POLYSILICON SITE BALLASTING
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- P<sub>OUT</sub> = 5.0 W MIN. WITH 14.0 dB GAIN





#### **DESCRIPTION**

The SD1891-03 is a 28 V silicon NPN transistor designed for INMARSAT and other 1.6 GHz SAT-COM applications. This device utilizes polysilicon site ballasting with a gold metallized die to achieve high reliability and ruggedness.

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

Symbol	Parameter	Value	Unit	
V <sub>CBO</sub>	Collector-Base Voltage	45	V	
V <sub>CEO</sub>	Collector-Emitter Voltage	15	V	
V <sub>EBO</sub>	Emitter-Base Voltage	3.5	V	
Ic	Device Current	1.1	Α	
Poiss	Power Dissipation	8.8	W	
TJ	Junction Temperature	+200	°C	
T <sub>STG</sub>	Storage Temperature	- 65 to +200	°C	

#### THERMAL DATA

R <sub>TH(j-c)</sub> Junction-Case Thermal Resistance	20.0	°C/W
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# **ELECTRICAL SPECIFICATIONS** (Tcase = 25°C)

#### STATIC

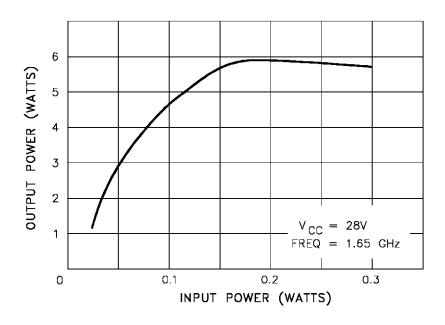
Symbol	Test Conditions	Value			Unit		
		Min.	Тур.	Max.	Unit		
ВУсво	I <sub>C</sub> = 1mA	$I_E = 0mA$		45	_	_	V
BV <sub>EBO</sub>	I <sub>E</sub> = 1mA	$I_C = 0mA$		3.5	_		V
I <sub>CBO</sub>	V <sub>CB</sub> = 24V	$I_E = 0mA$		_	_	0.5	mA
h <sub>FE</sub>	V <sub>CE</sub> = 5V	I <sub>C</sub> = 100mA		15	_	150	_

#### **DYNAMIC**

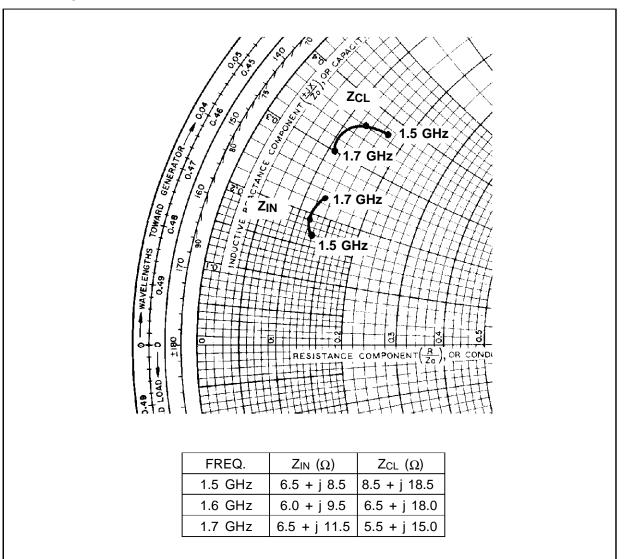
Symbol	Test Conditions		Value			Unit	
	rest Conditions			Min.	Тур.	Max.	Unit
Pout	f = 1.65 GHz	$P_{IN} = 200 \text{ mW}$	$V_{CE} = 28 V$	5.0	_	_	W
G <sub>P</sub>	f = 1.65 GHz	$P_{IN} = 200 \text{ mW}$	$V_{CE} = 28 \text{ V}$	14	_	_	dB
ης	f = 1.65 GHz	$P_{IN} = 200 \text{ mW}$	$V_{CE} = 28 \text{ V}$	45	_	_	%
Сов	f = 1 MHz	V <sub>CB</sub> = 28 V		_	2.5	_	pF

## **TYPICAL PERFORMANCE**

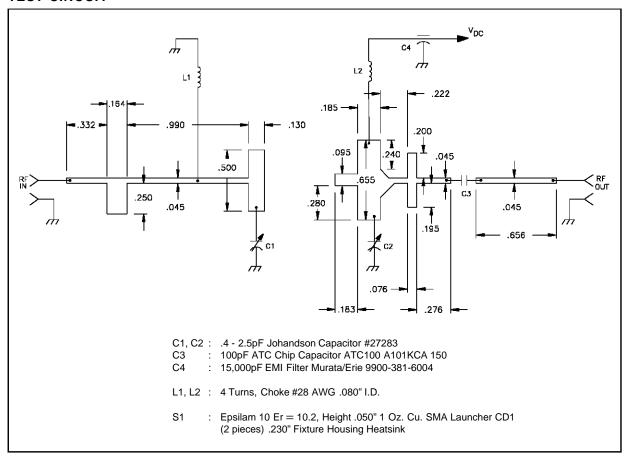
#### POWER OUTPUT vs POWER INPUT



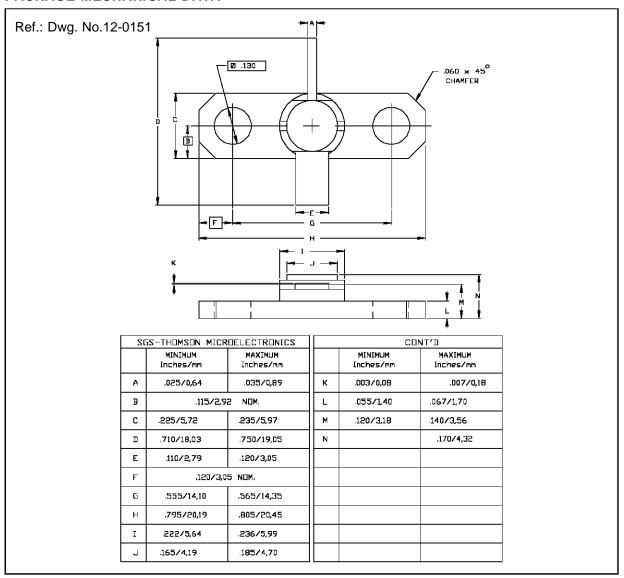
#### **IMPEDANCE DATA**



#### **TEST CIRCUIT**



#### PACKAGE MECHANICAL DATA



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