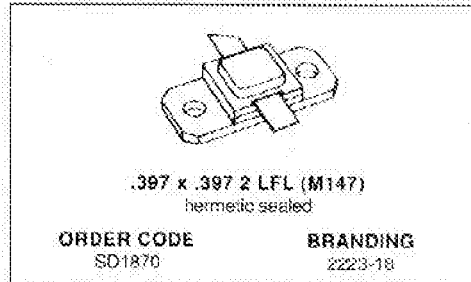


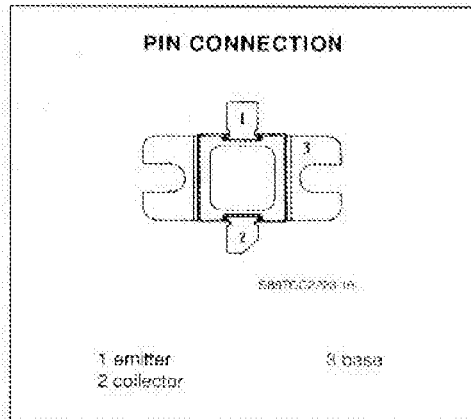
**RF & MICROWAVE TRANSISTORS  
MICROWAVE TELECOMMUNICATION APPLICATIONS**

- FREQUENCY 2.2-2.3GHz
- POWER OUT 18.0W
- POWER GAIN 6.5dB
- VOLTAGE 24.0V
- HERMETIC PACKAGE
- ALL GOLD METALLIZED SYSTEM
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- LOW THERMAL RESISTANCE
- COMMON BASE
- BROADBAND PERFORMANCE



**DESCRIPTION**

The TCC2223-18 is an internally input and output matched NPN silicon transistor designed for microwave applications. The device utilizes polysilicon site ballasting with gold metallized die to achieve high reliability and ruggedness. The TCC2223-18 is a 24V device designed to provide 18W over 2.2-2.3GHz band with a minimum gain of 6.5dB. The SD1870 is branded 2223-18.



**ABSOLUTE MAXIMUM RATINGS (T<sub>case</sub> = 25°C)**

Symbol	Parameter	Value	Unit
V <sub>CEO</sub>	Collector - Base Voltage	15	V
V <sub>CE0</sub>	Collector - Emitter Voltage	45	V
V <sub>EB0</sub>	Emitter - Base Voltage	3.5	V
I <sub>C</sub>	Collector Current (max.)	6.1	A
P <sub>tot</sub>	Total Device Dissipation at + 25°C	58.3	W
T <sub>stg</sub>	Storage Temperature	- 65 to 200	°C
T <sub>j</sub>	Junction Temperature	200	°C

**THERMAL DATA**

R <sub>(c-j)</sub>	Junction-case Thermal Resistance	3.0	°C/W
--------------------	----------------------------------	-----	------

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

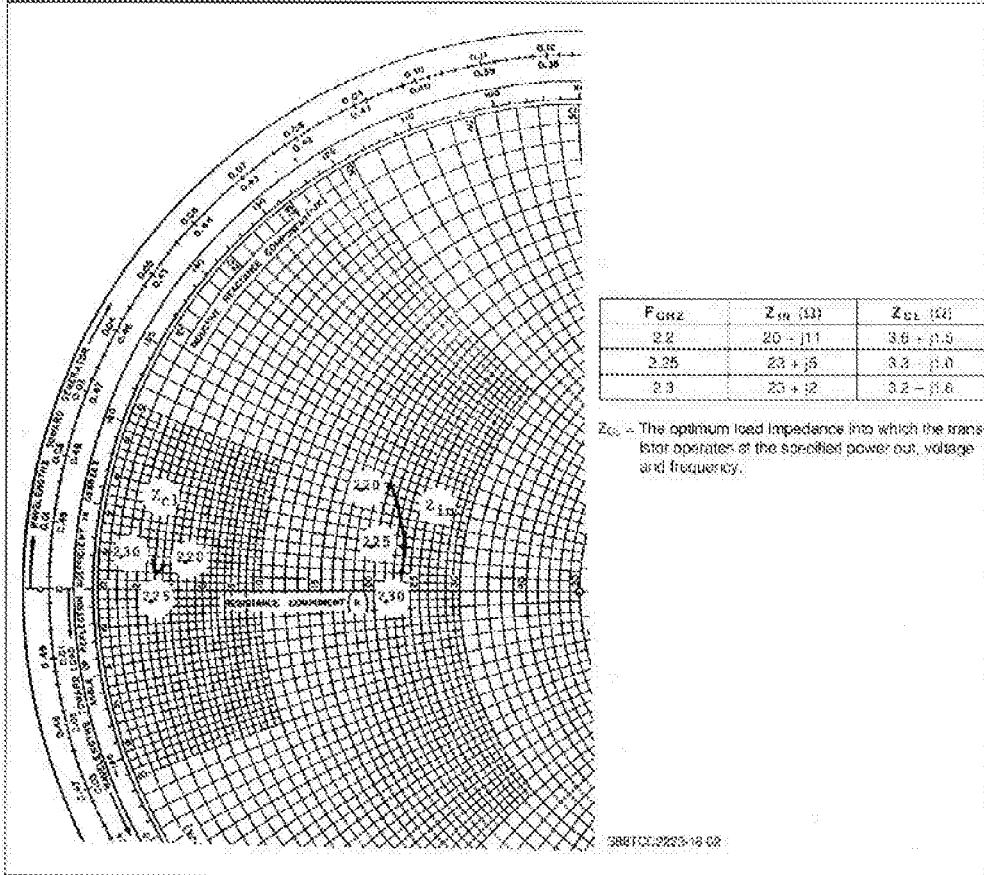
## STATIC

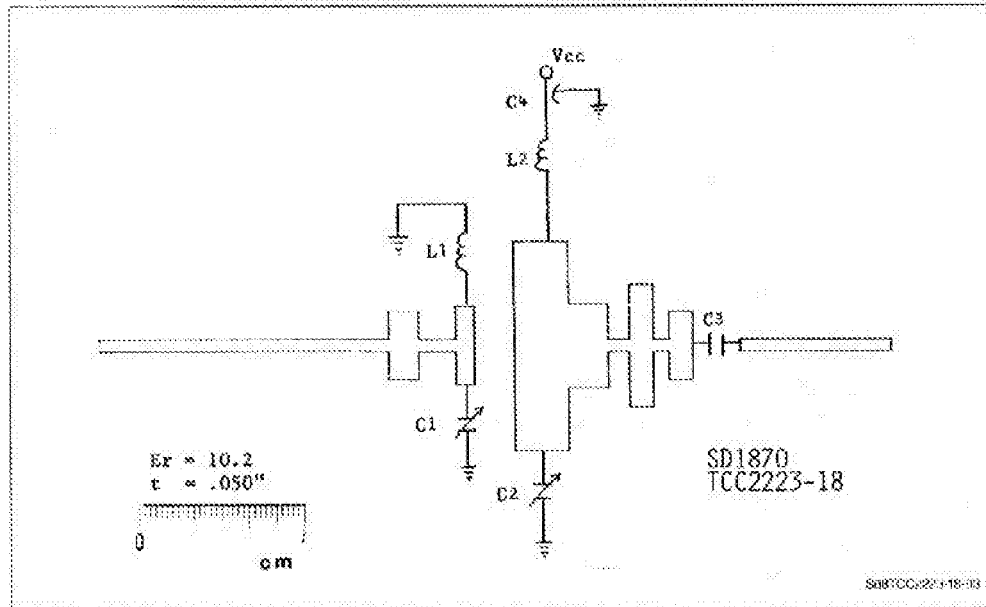
Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
$BV_{CEO}$	$I_C = 8mA$	$I_B = 0$	15			V
$BV_{CBO}$	$I_C = 8mA$	$V_{BE} = 0$	45			V
$BV_{EBC}$	$I_E = 8mA$	$I_C = 0$	3.5			V
$I_{CBO}$	$V_{CB} = 24V$	$V_{BE} = 0$			0.4	mA
$\beta_{FE}$	$V_{CE} = 5V$	$I_C = 5A$	15		150	

## DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
$P_O$	$f = 2.2 - 2.3GHz$	$V_{CB} = 24V$	$P_{IN} = 4W$	18			W
$P_G$	$f = 2.2 - 2.3GHz$	$V_{CB} = 24V$	$P_{IN} = 4W$	6.5			dB
$\eta_c$	$f = 2.2 - 2.3GHz$	$V_{CB} = 24V$	$P_{OUT} = 18W$	40			%

TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE WORKSHEET



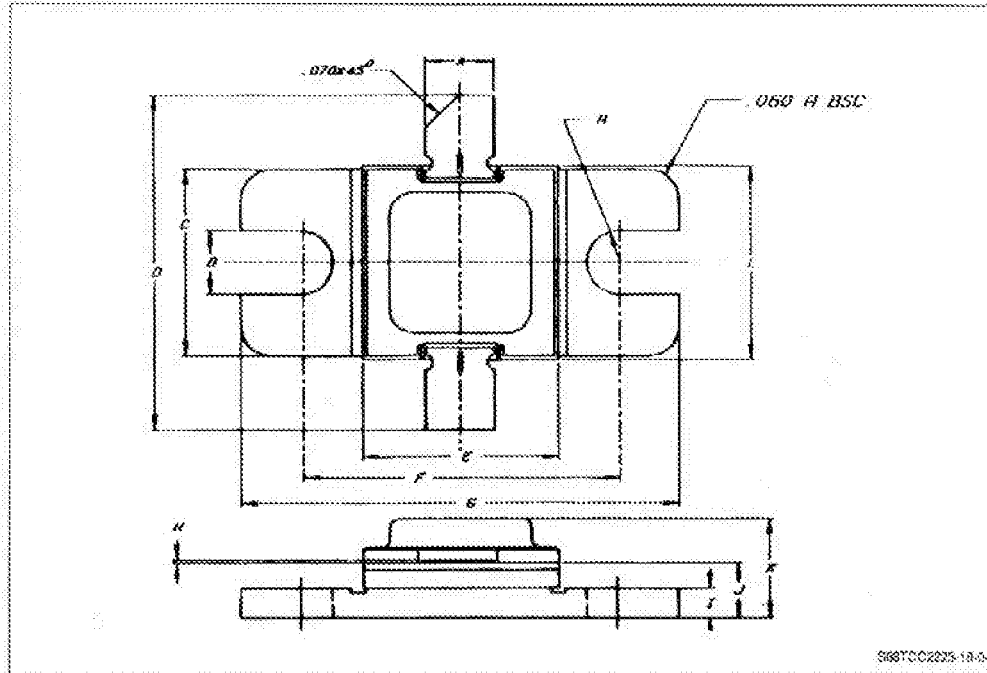


**PARTS LIST**

ITEM REF.	Description
L1	2 Turns #20 Wire 100" Dia
L2	2 Turns #20 Wire 100" Dia
C1	4 -- 2.5pF Johanson Trimmer Capacitor
C2	4 -- 2.5pF Johanson Trimmer Capacitor
C3	100pF ATC Chip Capacitor Size A
C4	15,000pF EMI Filter Capacitor (erie)
	Circuit Board Material Epsilon 10
	er = 10.2 T = .050" 1oz Copper

PACKAGE MECHANICAL DATA

.397 x .397 2LFL



9887202223-18-04

	Minimum Inches/mm	Maximum Inches/mm
A	.135/3.43	.145/3.68
B	.125/3.18 BSC	
C	.380/9.65	.390/9.91
D	.885/22.48	
E	.392/9.96	.402/10.26
F	.645/16.38	.655/16.64

	Minimum Inches/mm	Maximum Inches/mm
G	.895/22.73	.905/22.99
H	.002/0.05	.006/0.15
I	.055/1.40	.065/1.65
J	.105/2.67	.125/3.18
K		.230/5.84
L	.682/9.96	.402/10.29