

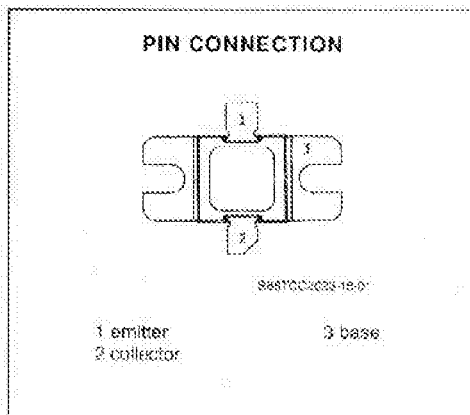
RF & MICROWAVE TRANSISTORS
MICROWAVE TELECOMMUNICATION APPLICATIONS

- FREQUENCY 2.0-2.3GHz
- POWER OUT 16.0W
- POWER GAIN 6.0dB
- 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 TCC2023-16 is an internally input and output matched NPN silicon transistor designed for microwave applications. The device utilizes polysilicon site ballasting with gold metalized die to achieve high reliability and ruggedness. The TCC2023-16 is a 28V device designed to provide 16W over the 2.0-2.3GHz band with a minimum gain of 6.0dB.



ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C)

Symbol	Parameter	Value	Unit
V _{CE0}	Collector - Base Voltage	15	V
V _{CS0}	Collector - Emitter Voltage	45	V
V _{ES0}	Emitter - Base Voltage	3.5	V
I _C	Collector Current (max.)	6.1	A
P _{TOT}	Total Device Dissipation at + 25°C	58.3	W
T _{STG}	Storage Temperature	- 65 to 200	°C
T _J	Junction Temperature	200	°C

THERMAL DATA

R _{th(j-c)}	Junction-case Thermal Resistance	3.0	°C/W
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TCC2023-16

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

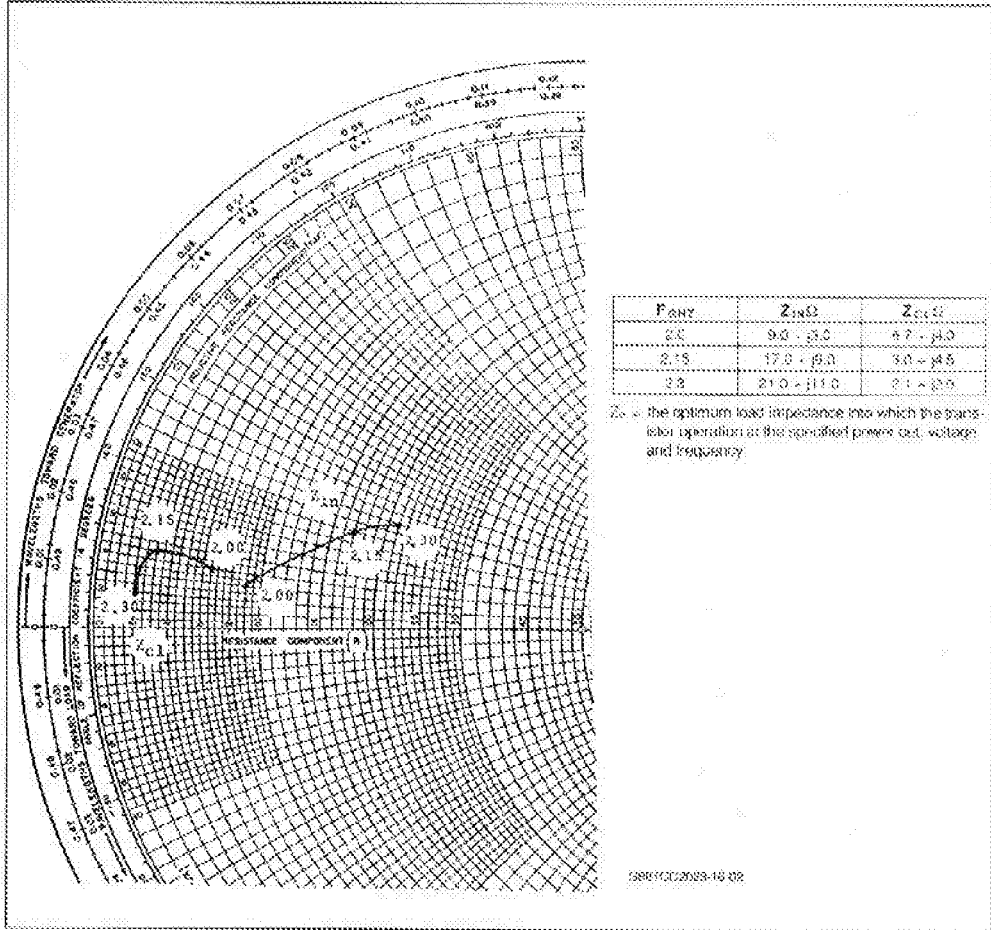
STATIC

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_{EBO}	$I_E = 8mA$	$I_C = 0$	3.5			V
I_{CEO}	$V_{CE} = 24V$	$V_{BE} = 0$.4	mA
h_{FE}	$V_{CE} = 5V$	$I_C = 5A$	15		150	

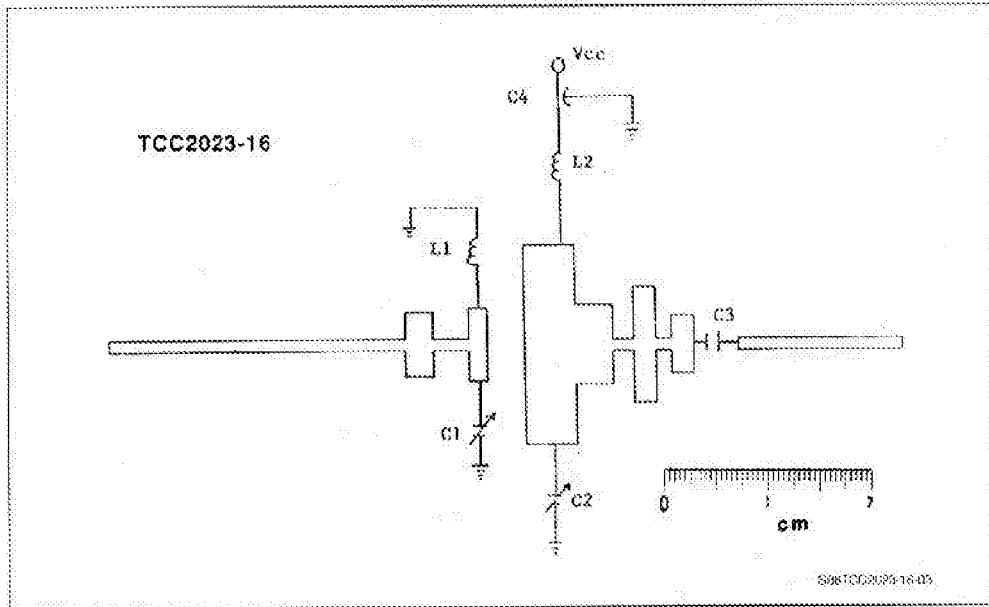
DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_D	$f = 2.0-2.3GHz$	$V_{CE} = 24V$	$P_{IN} = 4W$	16			W
P_A	$f = 2.0-2.3GHz$	$V_{CE} = 24V$	$P_{IN} = 4W$	6			dB
nc	$f = 2.0-2.3GHz$	$V_{CE} = 24V$	$P_{OUT} = 16W$	40			%

TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE



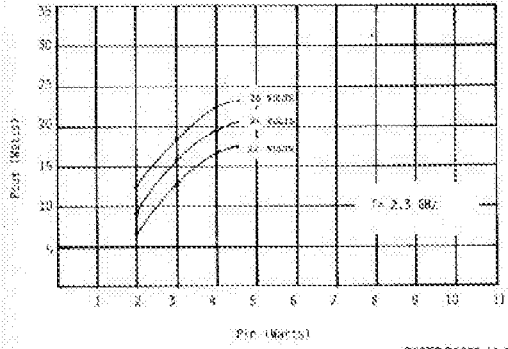
TCC2023-16



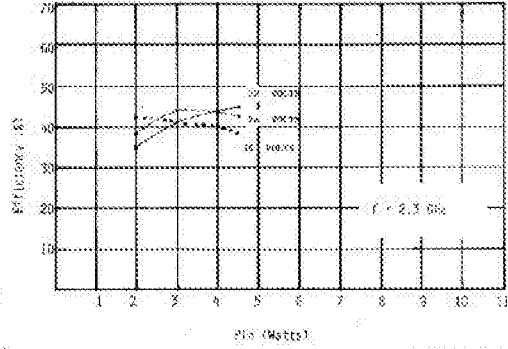
PARTS LIST

ITEM REF.	Description
L1	2 Turns #26Wire 100° Dia
L2	2 Turns #26Wire 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 Epsilam 10
	er 10.2 t = 0.50" 1oz Copper

POUT vs. P_{IN} f = 2.3GHz



EFFICIENCY vs. P_{IN} f = 2.3GHz



S98TCC2023-16-04

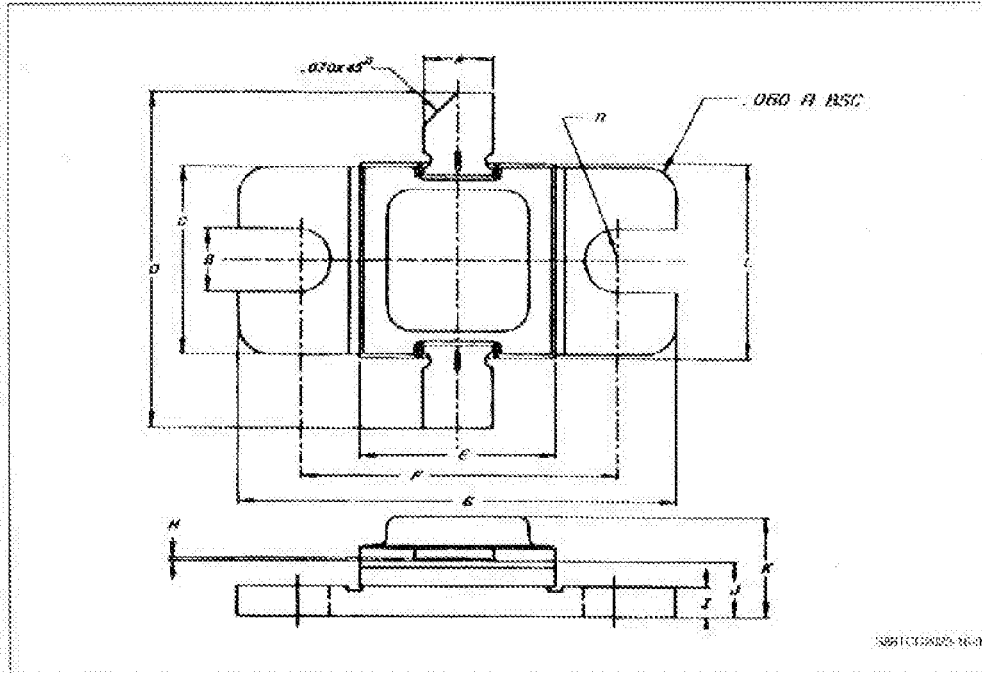
S98TCC2023-16-05

VCC = 22, 24, 26V

TCC2023-16

PACKAGE MECHANICAL DATA

397 x 397 2LFL



	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	.385/9.78	
E	.390/9.91	.402/10.20
F	.645/16.38	.655/16.64

	Minimum Inches/mm	Maximum Inches/mm
G	.395/22.73	.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	.392/9.96	.402/10.20