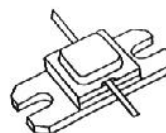


RF & MICROWAVE TRANSISTORS
MICROWAVE TELECOMMUNICATION APPLICATIONS

- FREQUENCY 2.0-2.3GHz
- POWER OUT 6.0W
- POWER GAIN 7.8dB
- VOLTAGE 24.0V
- HERMETIC PACKAGE
- ALL GOLD METALLIZED SYSTEM
- OVERLAY DIE GEOMETRY
- HIGH RELIABILITY AND RUGGEDNESS
- LOW THERMAL RESISTANCE
- COMMON BASE
- BROADBAND PERFORMANCE



.397 x .397 2LFL (M155)
 hermetic sealed

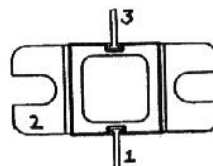
ORDER CODE
 SD1886

BRANDING
 2023-6

DESCRIPTION

The TCC2023-6 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 TCC2023-6 is a 24 Volt device designed to provide 6.0 Watts over the 2.0-2.3GHz band with a minimum gain of 7.8dB.

PIN CONNECTION



S88TCC2023-6-01

1 emitter
 2 collector

3 base

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

Symbol	Parameter	Value	Unit
V_{CEO}	Collector - Base Voltage	15	V
V_{CBO}	Collector - Emitter Voltage	45	V
V_{EBO}	Emitter - Base Voltage	3.5	V
I_C	Collector Current (max.)	1.9	A
P_{tot}	Total Device Dissipation at + 25°C	18.4	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	9.5	°C/W
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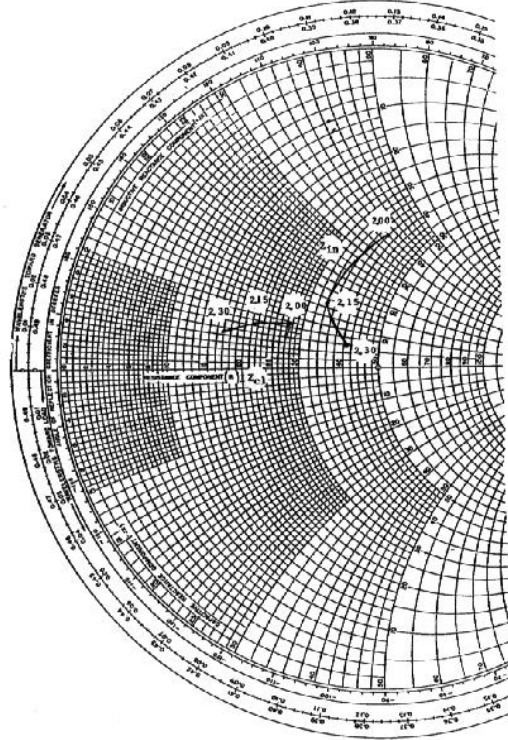
ELECTRICAL CHARACTERISTICS ($T_{\text{case}} = 25^{\circ}\text{C}$)**STATIC**

Symbol	Test Conditions		Value			Unit
			Min.	Typ.	Max.	
BV_{CEO}	$I_{\text{C}} = 2\text{mA}$	$I_{\text{B}} = 0$	15			V
BV_{CBO}	$I_{\text{C}} = 2\text{mA}$	$V_{\text{BE}} = 0$	45			V
BV_{EBO}	$I_{\text{E}} = 2\text{mA}$	$I_{\text{C}} = 0$	3.5			V
I_{CBO}	$V_{\text{CB}} = 24\text{V}$	$V_{\text{BE}} = 0$			.1	mA
h_{FE}	$V_{\text{CE}} = 5\text{V}$	$I_{\text{C}} = .1\text{A}$	15		150	

DYNAMIC

Symbol	Test Conditions			Value			Unit
				Min.	Typ.	Max.	
P_{O}	$f = 2.0\text{-}2.3\text{GHz}$	$V_{\text{CB}} = 24\text{V}$	$P_{\text{IN}} = 1.0\text{W}$	6.0			W
P_{G}	$f = 2.0\text{-}2.3\text{GHz}$	$V_{\text{CB}} = 24\text{V}$	$P_{\text{IN}} = 1.0\text{W}$	7.8			dB
η_{C}	$f = 2.0\text{-}2.3\text{GHz}$	$V_{\text{CB}} = 24\text{V}$	$P_{\text{OUT}} = 6\text{W}$	40			%

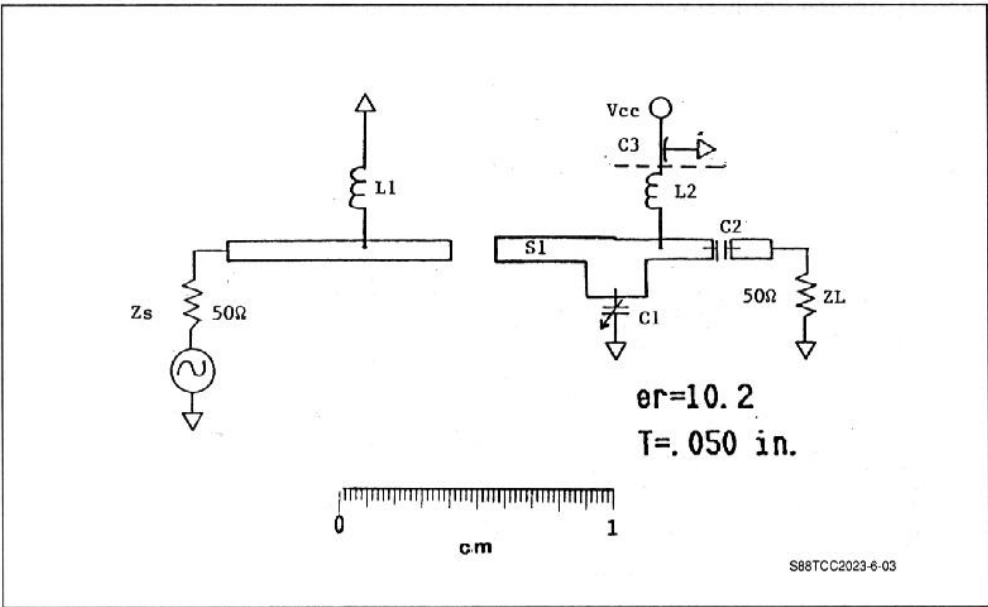
TYPICAL SERIES EQUIVALENT INPUT/OUTPUT IMPEDANCE



F_{GHz}	$Z_{IN}\Omega$	$Z_{CL}\Omega$
2.0	$38 + j39$	$27.5 + j8.5$
2.15	$34 + j15$	$21.5 + j7.5$
2.3	$41 + j50$	$17.0 + j5.5$

Z_{CL} = the optimum load impedance into which the transistor operates at the specified power out, voltage and frequency.

588TCC2023-6-02

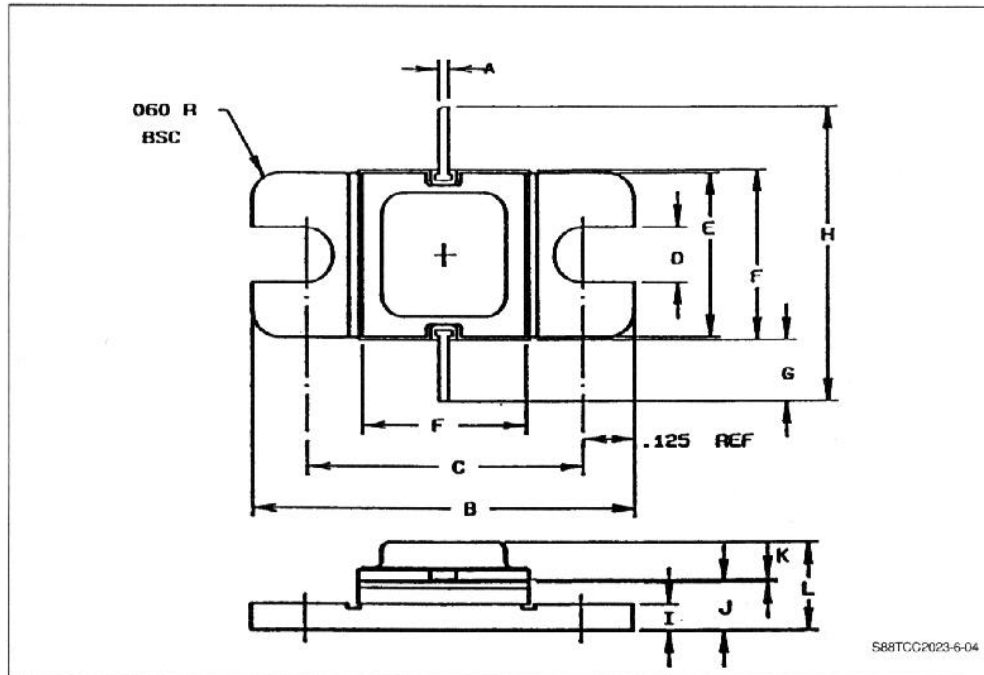


PARTS LIST

ITEM REF.	Description of ITEM
L1	3 Turn Choke #28 ,Wire .080 ^m ID.
L2	3 Turn Choke #28 ,Wire .080 ^m ID.
C1	.4-25pF Johanson Capacitor
C2	100pF Chip Cap. ATC
C3	15,000pF Emi Murata/Erie
S1	Epsilam10 ER = 10.2 H = .050" 1 OZ. CU
	SMA LAUNCHER CDI (2 pieces)
	.397 SQ. FIXTURE HOUSING
	HEAT SINK

PACKAGE MECHANICAL DATA

.397 x .397 2LFL



	Minimum Inches/mm	Maximum Inches/mm
A	.015/0.38	.025/0.64
B	.890/22.61	.910/23.11
C	.640/16.26	.660/16.76
D	.120/3.05	.130/3.30
E	.380/9.65	.390/9.91
F	.392/9.96	.402/10.29

	Minimum Inches/mm	Maximum Inches/mm
G	.240/6.10	.260/6.60
H	.885/22.48	
I	.055/1.40	.065/1.65
J	.110/2.79	.130/3.30
K	.003/0.08	.006/0.15
L	.200/5.08	.200/5.59