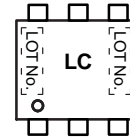
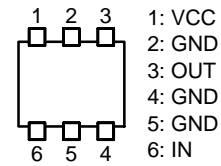


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**MARKING DIAGRAM**



**PIN DESCRIPTION**



$V_{CC}$	Supply Voltage	6	V
$I_{CC}$	Circuit Current	40	mA
$P_D$	Allowable Power Dissipation	280	mW
$T_{opr}$	Operating Temperature	-40 to +85	°C
$T_{stg}$	Storage Temperature	-55 to +150	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

**RECOMMENDED OPERATING CONDITIONS** ( $T_a = 25^\circ\text{C}$ )

Symbol	Parameter	Ratings			Unit
		Min	Typ	Max	
$V_{CC}$	Supply Voltage	4.5	5	5.5	V
$T_{opr}$	Operating Ambient Temperature	-40	+25	+85	°C

Functional operation above the stresses listed in the Recommended Operating Ranges is not implied. Extended exposure to stresses beyond the Recommended Operating Ranges limits may affect device reliability.

NOTE: Pay attention to handling since it is liable to be affected by static electricity due to the high frequency process adopted.

**ORDERING INFORMATION**

See detailed ordering and shipping information on page 5 of this data sheet.

# SMA3103

## ELECTRICAL CHARACTERISTICS (Ta = 25°C, VCC = 5 V, ZS = ZL = 50 Ω)

Symbol	Parameter	Conditions	Ratings			Unit
			Min	Typ	Max	
I <sub>CC</sub>	Circuit Current		14.0	19.0	25.0	mA
G <sub>p</sub>	Power Gain	f = 1 GHz	24.0	26.5	29.0	dB
		f = 2.2 GHz	24.0	27.0	30.0	
ISL	Isolation	f = 1 GHz	31.0	33.0	–	dB
		f = 2.2 GHz	31.0	33.0	–	
RL <sub>in</sub>	Input Return Loss	f = 1 GHz	12.0	20.0	–	dB
		f = 2.2 GHz	10.0	14.0	–	
RL <sub>out</sub>	Output Return Loss	f = 1 GHz	12.0	20.0	–	dB
		f = 2.2 GHz	10.0	16.0	–	
NF	Noise Figure	f = 1 GHz	–	4.7	5.3	dB
		f = 2.2 GHz	–	4.7	5.3	
Po(1dB)	Gain 1 dB Compression Output Power	f = 1 GHz	6.0	8.2	–	dBm
		f = 2.2 GHz	4.0	5.7	–	
f <sub>u</sub>	Upper Limit Operating Frequency	3 dB down below flat gain at f = 1 GHz	–	3.3	–	GHz

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

### Test Circuit

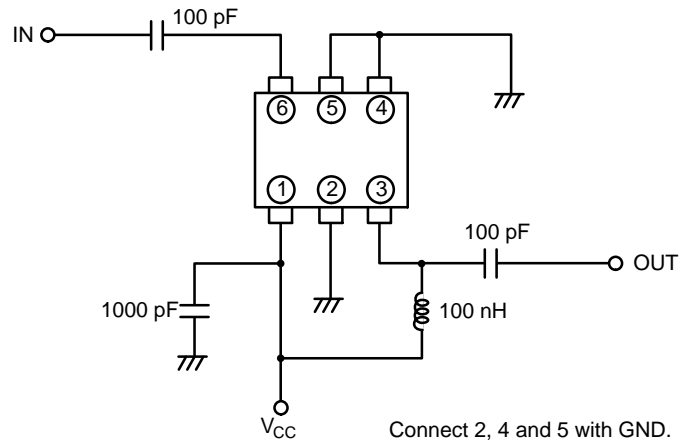


Figure 1. Test Circuit

# SMA3103

## Design of the Evaluation Board

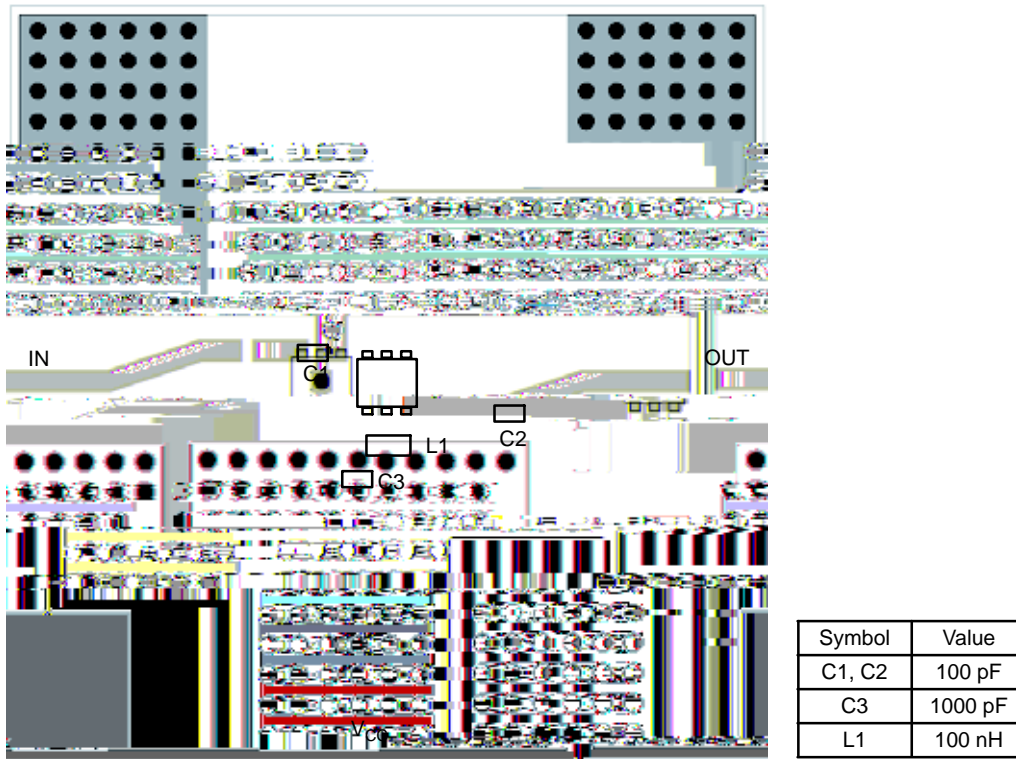


Figure 2. Design of the Evaluation Board

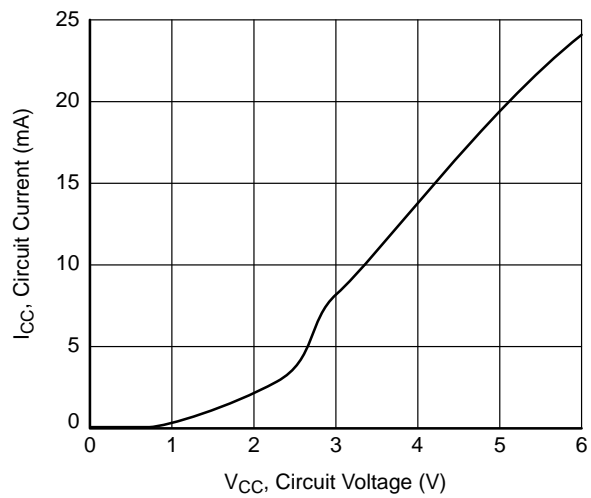
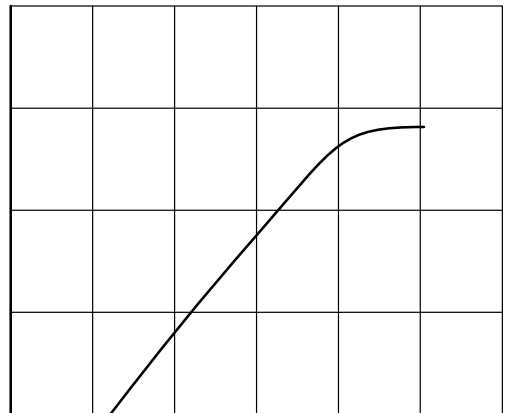
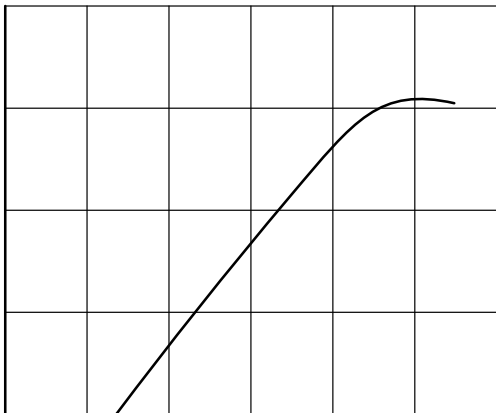
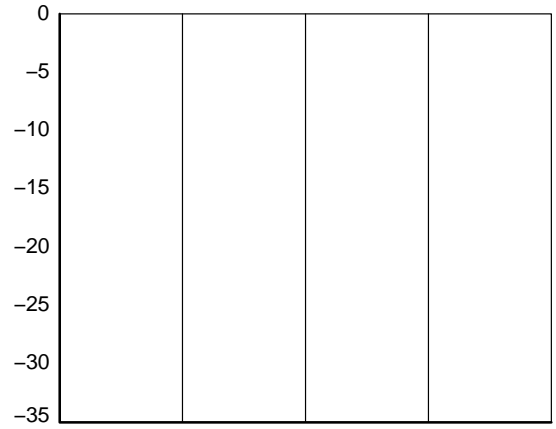
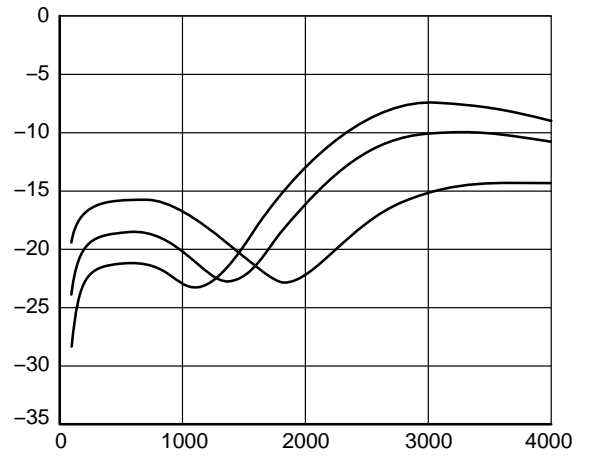
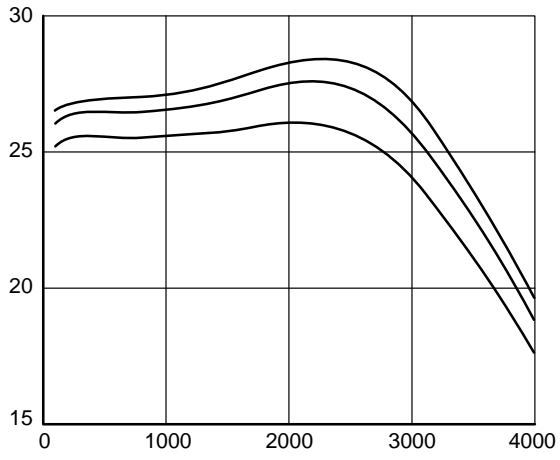
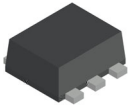


Figure 3. I<sub>CC</sub> - V<sub>CC</sub>

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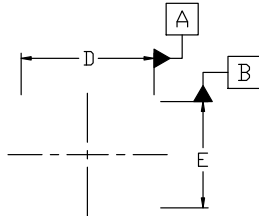






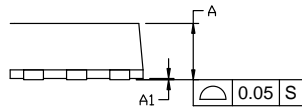
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**ISSUE A**

DATE 28 SEP 2022

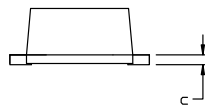


⌀ 0.1 (M) A

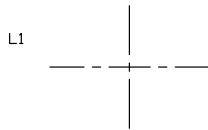
TOP VIEW



SIDE VIEW



FRONT VIEW



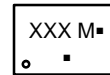
BOTTOM VIEW

NOTES:

1. NO INDUSTRY STANDARD APPLIES TO THIS PACKAGE.
2. ALL DIMENSIONS ARE IN MILLIMETERS.
3. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND THE BAR PROTRUSIONS.

DIM	MILLIMETERS		
	MIN.	NOM.	MAX.
A	0.80	0.85	0.90
A1	0.00	---	0.02
b	0.25	0.30	0.40
c	0.12	0.15	0.25
D	1.94	2.00	2.06
E	1.54	1.60	1.66
He	2.05	2.10	2.15
L	0.19	0.25	0.31
L1	0.00	0.07	0.12

**GENERIC MARKING DIAGRAM\***



- XXX = Specific Device Code
- M = Date Code
- = Pb-Free Package

(Note: Microdot may be in either location)

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present. Some products may not follow the Generic Marking.

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