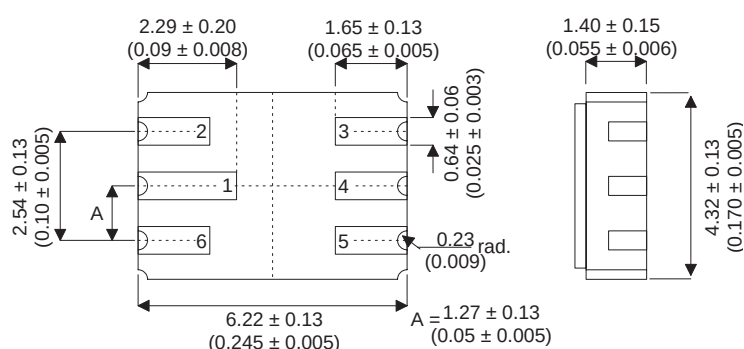


DUAL HIGH FREQUENCY NPN TRANSISTORS IN A HERMETICALLY SEALED CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA

Dimensions in mm (inches)



**LCC2 PACKAGE
(MO-041BB)**

Underside View

PAD 1 – Collector 1

PAD 2 – Base 1

PAD 3 – Base 2

PAD 4 – Collector 2

PAD 5 – Emitter 2

PAD 6 – Emitter 1

FEATURES

- **SILICON PLANAR EPITAXIAL NPN TRANSISTOR**
- **HERMETIC CERAMIC SURFACE MOUNT PACKAGE**
- **CECC SCREENING OPTIONS AVAILABLE**
- **SPACE QUALITY LEVELS AVAILABLE**
- **HIGH SPEED SATURATED SWITCHING**

APPLICATIONS:

For high reliability general purpose applications requiring small size and low weight devices.

ABSOLUTE MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$ unless otherwise stated)

ABSOLUTE MAXIMUM RATINGS (T _C = 25°C unless otherwise stated)		Per Side	Total Device
V _{CBO}	Collector – Base Voltage	140V	
V _{CEO}	Collector – Emitter Voltage	80V	
V _{EBO}	Emitter – Base Voltage	7V	
I _C	Collector Current	1A	
P _D	Power Dissipation	350mW	500mW
P _D	Derate above 50°C	2.33mW / °C	3.33mW / °C
R _{θJA}	Thermal Resistance Junction to Ambient	429°C / W	300°C / W
T _j	Max Junction Temperature	200°C	
T _{stg}	Storage Temperature	–55°C to 200°C	

Semelab Plc reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V _{(BR)CEO} * Collector – Emitter Breakdown Voltage	I _C = 10mA I _B = 0	80			V
V _{(BR)CBO} * Collector – Base Breakdown Voltage	I _C = 100μA I _E = 0	140			V
V _{(BR)EBO} * Emitter – Base Breakdown Voltage	I _E = 100μA I _C = 0	7			V
I _{CBO} Collector Cut-off Current	V _{CB} = 90V V _{BE} = 0 T _{amb} = 150°C			10	nA
I _{EBO} Emitter Cut-off Current	V _{EB} = 5V			10	nA
V _{CE(sat)} * Collector – Emitter Saturation Voltage	I _C = 150mA I _B = 15mA I _C = 500mA I _B = 50mA			0.20 0.50	V
V _{BE(sat)} * Base – Emitter Saturation Voltage	I _C = 150mA I _B = 15mA			1.1	
h _{FE} * DC Current Gain	I _C = 0.1mA V _{CE} = 10V	50			—
	I _C = 10mA V _{CE} = 10V	90			
	I _C = 150mA V _{CE} = 10V T _{amb} = –55°C	100 40		300	
	I _C = 500mA V _{CE} = 10V	50			
	I _C = 1A V _{CE} = 10V	15			

* Pulse test t_p = 300μs , δ ≤ 2%

DYNAMIC CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
f _T Transition Frequency	I _C = 50mA V _{CE} = 10V f = 20MHz	100			MHz
C _{EBO} Capacitance	V _{EB} = 0.5V I _C = 0 f = 1.0MHz			60	pF
C _{CBO} Input Capacitance	V _{CB} = 10V I _E = 0 f = 1.0MHz			12	pF
h _{fe} Small Signal Current Gain	I _C = 1mA V _{CE} = 5V f = 1kHz	80		400	—
NF Noise Figure	I _C = 100μA V _{CE} = 10V f = 1kHz R _g = 1KΩ			4	dB