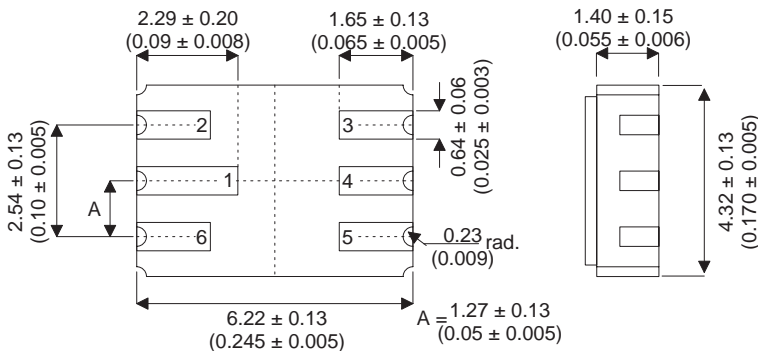


DUAL BIPOLAR NPN DEVICES IN A HERMETICALLY SEALED LCC2 CERAMIC SURFACE MOUNT PACKAGE FOR HIGH RELIABILITY APPLICATIONS

MECHANICAL DATA

Dimensions in mm (inches)



LCC2 (MO-041BB)

PIN OUT

Pin 1 – Collector 1
Pin 2 – Base 1
Pin 3 – Base 2

Pin 4 – Collector 2
Pin 5 – Emitter 2
Pin 6 – Emitter 1

FEATURES

- SILICON PLANAR EPITAXIAL NPN TRANSISTOR
- HERMETIC CERAMIC SURFACE MOUNT PACKAGE
- CECC SCREENING OPTIONS
- SPACE QUALITY LEVELS OPTIONS
- JAN LEVEL SCREENING OPTIONS
- HIGH VOLTAGE

All Semelab hermetically sealed products can be processed in accordance with the requirements of BS, CECC and JAN, JANTX, JANTXV and JANS specifications.

ABSOLUTE MAXIMUM RATINGS

($T_{case} = 25^{\circ}C$ unless otherwise stated)

		Single Side	Total Device
V_{CBO}	Collector-Base Voltage	150V	
V_{CEO}	Collector-Emitter Voltage($I_B=0$)	150V	
V_{EBO}	Emitter-Base Voltage($I_B=0$)	6V	
I_C	Continuous Collector Current	300mA	
P_D	Power Dissipation	300mW	500mW
		$T_{amb} = 25^{\circ}C$	
		Derate above $25^{\circ}C$	
T_j	Operating Temperature Range	1.72mW/ $^{\circ}C$	2.86mW/ $^{\circ}C$
T_{stg}	Storage Temperature Range	-65 to $200^{\circ}C$	-65 to $200^{\circ}C$
R_{thJA}	Thermal Resistance Junction to Ambient		350 $^{\circ}C$

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 ($T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS					
$V_{(BR)CEO}$ Collector-Emmitter Breakdown Voltage ¹	$I_C=10mA$ $I_B=0$	150			V
$V_{(BR)CBO}$ Collector-Base Breakdown Voltage	$I_C=10\mu A$ $I_E=0$	150			V
$V_{(BR)EBO}$ Emmitter-Base Breakdown Voltage	$I_E=10\mu A$ $I_C=0$	6			V
I_{CBO} Collector Cutoff Current	$V_{CB}=75V$ $I_E=0$ $T_{amb}=150^{\circ}C$			0.05	μA
				50	
I_{EBO} Emmitter Cutoff Current	$V_{BE(off)}=4V$ $V_{CE}=0$			25	nA
ON CHARACTERISTICS					
h_{FE} DC Current Gain	$I_C=0.1mA$ $V_{CE}=10V$	35			
	$I_C=1mA$ $V_{CE}=10V$	50			
	$I_C=10mA$ $V_{CE}=10V$	75			
	$I_C=150mA$ $V_{CE}=10V$	100		300	
	$I_C=300mA$ $V_{CE}=10V$	20			
$V_{CE(SAT)}$ Collector-Emmitter Saturation Voltage ¹	$I_C=10mA$ $I_B=1mA$			0.2	V
	$I_C=50mA$ $I_B=5mA$			0.25	
	$I_C=150mA$ $I_B=15mA$			0.4	
$V_{BE(SAT)}$ Base-Emmitter Saturation Voltage ¹	$I_C=10mA$ $I_B=1mA$			0.8	V
	$I_C=50mA$ $I_B=5mA$			0.9	
	$I_C=150mA$ $I_B=15mA$			1.2	
SMALL SIGNAL CHARACTERISTICS					
f_T Current Gain-Bandwidth Product (100MHz)	$V_{CE}=20V$ $I_C=20mA$	150			MHz
C_{obo} Output Capacitance (1MHz)	$V_{CB}=10V$ $I_E=0$			8	pF
C_{ibo} Input Capacitance (1MHz)	$V_{EB}=0.5V$ $I_C=0$			80	
h_{ie} Input Impedance (1kHz)	$V_{CE}=10V$ $I_C=10mA$	0.25		1.25	
h_{fe} Small-Signal Current Gain (1kHz)	$V_{CE}=10V$ $I_C=10mA$			375	
h_{oe} Output Admittance (1kHz)	$V_{CE}=10V$ $I_C=10mA$			200	
SWITCHING CHARACTERISTICS					
t_d Delay Time	$I_C=150mA$ $I_B^1=15mA$		20		ns
t_r Rise Time	$V_{CC}=100V$ $V_{EB(off)}=-2V$		35		
t_s Storage Time	$I_C=150mA$ $I_B^1=15mA$		800		
t_f Fall Time	$I_{B1}=I_{B2}=15mA$		80		

1) Pulse Test: Pulse Width < 300 μs , Duty Cycle <2%

2) f_t is defined as frequency at which $|h_{fe}| \cdot f_{test}$