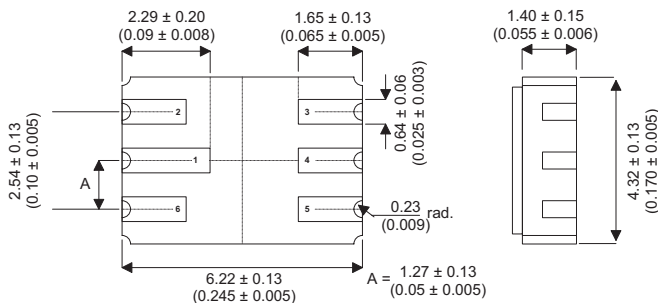


MECHANICAL DATA

Dimensions in mm (inches)



LCC2 PACKAGE
Underside View

- | | |
|----------------------------|----------------------------|
| PAD 1 – Collector 1 | PAD 4 – Collector 2 |
| PAD 2 – Base 1 | PAD 5 – Emitter 2 |
| PAD 3 – Base 2 | PAD 6 – Emitter 1 |

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

FEATURES

- Hermetic Ceramic Surface Mount Package
- CECC Screening Options
- Space Quality Levels Options

ABSOLUTE MAXIMUM RATINGS

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

		EACH SIDE	TOTAL DEVICE
V_{CBO}	Collector – Base Voltage	45V	
V_{CEO}	Collector – Emitter Voltage ¹	45V	
V_{EBO}	Emitter – Base Voltage	6V	
I_C	Continuous Collector Current	30	
P_D	Total Device Dissipation	300mW	500mW
	$T_{AMB} = 25^{\circ}\text{C}$ Derate above 25°C	1.72mW / $^{\circ}\text{C}$	2.86W / $^{\circ}\text{C}$
T_{STG}	Storage Temperature Range	-65 to 200°C	
T_L	Lead temperature (Soldering, 10 sec.)	300 $^{\circ}\text{C}$	

NOTES

1. Base – Emitter Diode Open Circuited.

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.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.

E-mail: sales@semelab.co.uk Website: <http://www.semelab.co.uk>

Document Number 2747

Issue 1

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

Parameter	Test Conditions ¹	Min.	Typ.	Max.	Unit
INDIVIDUAL TRANSISTOR CHARACTERISTICS					
$V_{(BR)CBO}$ Collector – Base Breakdown Voltage	$I_C = 10\text{mA}$ $I_E = 0$	45			V
$V_{(BR)CEO^*}$ Collector – Emitter Breakdown Voltage	$I_C = 10\text{mA}$ $I_B = 0$	45			
$V_{(BR)EBO}$ Emitter – Base Breakdown Voltage	$I_E = 10\text{mA}$ $I_C = 0$	6			
I_{CBO} Collector Cut-off Current	$V_{CB} = 45\text{V}$ $I_E = 0$ $T_A = 150^{\circ}\text{C}$			10	nA
				10	μA
I_{CEO} Collector Cut-off Current	$V_{CE} = 5\text{V}$ $I_B = 0$			2	nA
I_{EBO} Emitter Cut-off Current	$V_{EB} = 5\text{V}$ $I_C = 0$			2	
h_{FE} DC Current Gain	$V_{CE} = 5\text{V}$ $I_C = 10\text{mA}$ $T_A = -55^{\circ}\text{C}$	150		600	—
		30			
	$V_{CE} = 5\text{V}$ $I_C = 100\text{mA}$	225			
	$V_{CE} = 5\text{V}$ $I_C = 1\text{mA}$	300			
V_{BE} Base – Emitter Voltage	$V_{CE} = 5\text{V}$ $I_C = 100\text{mA}$			0.70	V
$V_{CE(sat)}$ Collector – Emitter Saturation Voltage	$I_B = 100\text{mA}$ $I_C = 1\text{mA}$			0.35	
h_{ib} Small Signal Common – Base Input Impedance	$V_{CB} = 5\text{V}$ $I_C = 1\text{mA}$ $f = 1\text{kHz}$	25		32	Ω
h_{ob} Small Signal Common – Base Output Admittance	$V_{CB} = 5\text{V}$ $I_C = 1\text{mA}$ $f = 1\text{kHz}$			1	μmho
$ h_{fe} $ Small Signal Common – Base Current Gain	$V_{CE} = 5\text{V}$ $I_C = 500\text{mA}$ $f = 20\text{MHz}$	3			—
C_{obo} Common – Base Open Circuit Output Capacitance	$V_{CB} = 5\text{V}$ $I_E = 0$ $f = 140\text{kHz to } 1\text{MHz}$			6	pF
TRANSISTOR MATCHING CHARACTERISTICS					
$\frac{h_{FE1}}{h_{FE2}}$ Static Forward Current Gain Balance Ratio	$V_{CE} = 5\text{V}$ $I_C = 100\mu\text{A}$ See Note 2.	0.9		1	—
$ V_{BE1} - V_{BE2} $ Base – Emitter Voltage Differential	$V_{CE} = 5\text{V}$ $I_C = 100\mu\text{A}$			3	mV
	$V_{CE} = 5\text{V}$ $I_C = 10\mu\text{A to } 1\text{mA}$			5	
$ D(V_{BE1} - V_{BE2})DT_A $ Base – Emitter Voltage Differential Change With Temperature	$V_{CE} = 5\text{V}$ $I_C = 100\mu\text{A}$ $T_{A1} = 25^{\circ}\text{C}$ $T_{A2} = -55^{\circ}\text{C}$			0.8	mV
	$V_{CE} = 5\text{V}$ $I_C = 100\mu\text{A}$ $T_{A1} = 25^{\circ}\text{C}$ $T_{A2} = 125^{\circ}\text{C}$			1	

* Pulse Test: $t_p = 300\mu\text{s}$, $\delta \leq 1\%$.

NOTES

- 1) Terminals not under test are open circuited under all test conditions.
- 2) The lower of the two readings is taken as h_{FE1} .

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.

Semelab plc. Telephone +44(0)1455 556565. Fax +44(0)1455 552612.

E-mail: sales@semelab.co.uk Website: <http://www.semelab.co.uk>

Document Number 2747

Issue 1