

SILICON EPITAXIAL PNP TRANSISTOR

BCY71DCSM

- Low Current / Low Voltage Transistor In A Dual Ceramic Hermetic Package
- Designed For General Purpose Industrial Applications
- Screening Options Available



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

		Each Side	Total Device
V_{CBO}	Collector - Base Voltage	-45V	
V_{CEO}	Collector - Emitter Voltage	-45V	
V_{EBO}	Emitter – Base Voltage	-5V	
I_C	Continuous Collector Current	-200mA	
I_{CM}	Peak Collector Current	-200mA	
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above 25°C	350mW 2mW/ $^\circ\text{C}$	500mW* 2.9mW/ $^\circ\text{C}$
T_J	Junction Temperature Range	-65 to $+200^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-65 to $+200^\circ\text{C}$	

THERMAL PROPERTIES (Each Side.)

Symbols	Parameters	Min.	Typ.	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient			500	$^\circ\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case			150	$^\circ\text{C}/\text{W}$

* Total device power dissipation limited by package.

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ELECTRICAL CHARACTERISTICS (Each Side, $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	Test Conditions	Min.	Typ.	Max.	Units
I_{CES}	Collector-Emitter Cut-Off Current	$V_{CE} = -20\text{V}$ $V_{BE} = 0$			-0.1	μA
		$V_{CE} = -45\text{V}$ $V_{BE} = 0$			-10	
I_{EBO}	Emitter-Base Cut-Off Current	$V_{EB} = -5\text{V}$ $I_C = 0$			10	
$V_{CE(sat)}^{**}$	Collector-Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1.0\text{mA}$			-0.25	V
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$			-0.5	
$V_{BE(sat)}^{**}$	Base-Emitter Saturation Voltage	$I_C = -10\text{mA}$ $I_B = -1.0\text{mA}$	-0.6		-0.9	
		$I_C = -50\text{mA}$ $I_B = -5\text{mA}$			-1.2	
h_{FE}^{**}	Forward-current transfer ratio	$I_C = -0.01\text{mA}$ $V_{CE} = -1.0\text{V}$		60		
		$I_C = -0.1\text{mA}$ $V_{CE} = -1.0\text{V}$	80			
		$I_C = -1.0\text{mA}$ $V_{CE} = -1.0\text{V}$	90			
		$I_C = -10\text{mA}$ $V_{CE} = -1.0\text{V}$	100		600	
		$I_C = -50\text{mA}$ $V_{CE} = -1.0\text{V}$	15			

DYNAMIC CHARACTERISTICS

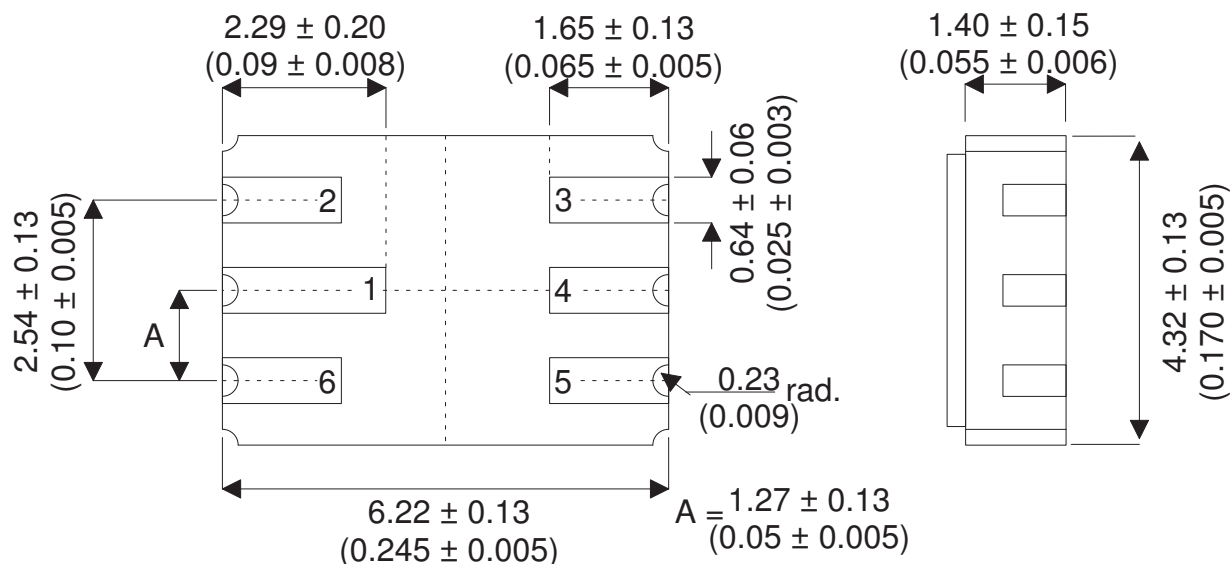
f_T	Transition Frequency	$I_C = -0.1\text{mA}$ $V_{CE} = -20\text{V}$ $f = 10.7\text{MHz}$	15			MHz
		$I_C = -10\text{mA}$ $V_{CE} = -20\text{V}$ $f = 100\text{MHz}$	250			
h_{fe}	Small-Signal Current Gain	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$	100		400	
C_{obo}	Output Capacitance	$I_E = 0$ $V_{CB} = -10\text{V}$ $f = 1.0\text{MHz}$			6	pF
C_{ibo}	Input Capacitance	$I_C = 0$ $V_{EB} = -1.0\text{V}$ $f = 1.0\text{MHz}$			8	
NF	Noise Figure	$I_C = -0.1\text{mA}$ $V_{CE} = -5\text{V}$ $R_g = 2\text{K}\Omega$ $f = 10\text{Hz To } 10\text{KHz}$			2	dB
h_{ie}	Input Impedance	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$	2		12	$\text{K}\Omega$
h_{re}	Reverse Voltage Ratio	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$			20×10^{-4}	
h_{oe}	Output Admittance	$I_C = -1.0\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$	10		60	μS

** Pulse Test: $t_p = 300\mu\text{s}$, $\delta \leq 2\%$

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Mechanical Data

Dimensions in mm (inches)



LCC2 (MO-041BB)

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