

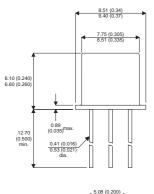
NPN SILICON PLANAR EPITAXIAL

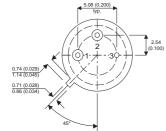
TRANSISTOR IN HERMETICALLY **SEALED METAL CASE** 



## **MECHANICAL DATA**

Dimensions in mm(Inches)





TO39 PACKAGE(TO205AD)

Pin 1 = Emitter

Pin 2 = Base

Pin 3 = Collector

## **ABSOLUTE MAXIMUM RATINGS** (T<sub>case</sub> = 25°C unless otherwise stated)

$\overline{V_{CBO}}$	Maximum Collector to Base Continuous Voltage	150V		
$V_{CEO}$	Maximum Collector to Emitter Continous voltage	60V		
$V_{EBO}$	Maximum Emitter to Base Continouse reverse Voltage	7V		
$I_{\mathbb{C}}$	Maximum Continuous Collector Current	10A		
$I_{B}$	Maximum Continuous Base Current	2A		
$P_{TOT}$	Maximum total Power Dissipation up to T <sub>case</sub> = 25°C	30W		
	T <sub>case</sub> = 100°C	15W		
	$T_{amb} = 25$ °C	1W		
$T_{c}$	Junction Temperature	-65 to +175°C		
T <sub>stg</sub>	Storage Temperature	150°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.

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**BUY82** 

## THERMAL CHARACTERISTICS

R <sub>th j-case</sub>	Thermal resistance to case	Max	5.0°C/W
R <sub>th j-amb</sub>	Thermal resistance juntion to ambient	Max	150°C/W

## **ELECTRICAL CHARACTERISTICS** (T<sub>case</sub> = 25°C unless otherwise stated)

	Parameter	Test Conditions		Min.	Тур.	Max.	Unit
h <sub>21E</sub>	Static value of common-emitter	$V_{CE} = 5V$	I <sub>C</sub> = 1.5A	40			_
	forward current transfer ratio *	$V_{CE} = 5v$	I <sub>C</sub> = 10A	15			
\/	Collector-Emitter Saturation Voltage*	I <sub>C</sub> = 10A	I <sub>B</sub> = 5V			1.0	V
V <sub>CE(SAT)</sub>		I <sub>C</sub> = 1.5A	I <sub>B</sub> = 150mA			0.8	
V	Base - Emitter Saturation Voltage*	I <sub>C</sub> = 10A	I <sub>B</sub> = 1.0A			1.8	
V <sub>BE(SAT)</sub>		I <sub>C</sub> = 1.5A	I <sub>B</sub> = 150mA			1.2	
1-	Collector - Base Cut-off Current	V <sub>CB</sub> = 100V	I <sub>E</sub> = 0			10	μΑ
I <sub>CBO</sub>			T <sub>Case</sub> = 150°C			500	
I <sub>EBO</sub>	Emitter - Base Cut-off Current	$V_{EB} = 5V$	$I_C = 0$			10	
+	Turn on time	I <sub>C</sub> = 5A	I <sub>B1</sub> = 0.5A			1	μs
t <sub>on</sub>		I <sub>C</sub> = 10A	I <sub>B1</sub> = 1A			1.5	
t	Turn off time	I <sub>C</sub> = 5A	$I_{B1} = -I_{B2} = 0.5A$			1	
t <sub>off</sub>		I <sub>C</sub> = 10A	$I_{B1} = -I_{B2} = 1A$			1	
C	Output capacitance	V <sub>CB</sub> = 10V	I <sub>E</sub> = 0			200	
C <sub>22b</sub>		f =1MHz			200		
_	Input capacitance	V <sub>EB</sub> = 0.5V	I <sub>C</sub> = 0			950	pF
C <sub>11b</sub>		f =1MHz				850	
f	Transition Frequency	V <sub>CE</sub> = 10V	I <sub>C</sub> = 100mA	40			MHz
f <sub>T</sub>		f = 20MHz		40			

<sup>\*</sup> Measured under pulse conditions: Pulse length = 300 ms, duty cycle = 1.5%

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