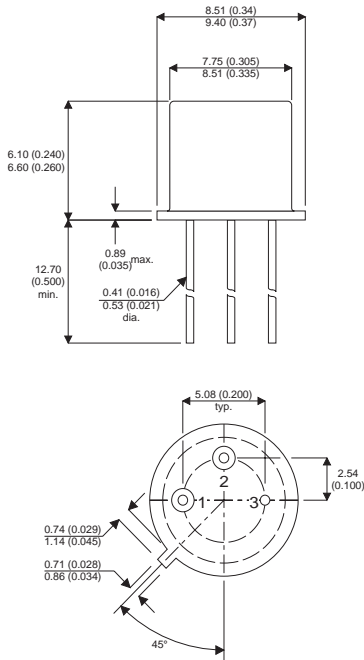


MECHANICAL DATA

Dimensions in mm (inches)



TO39 PACKAGE (TO-205AD)

Underside View

Pin 1 = Emitter Pin 2 = Base Pin 3 = Collector

**MEDIUM POWER SILICON
NPN PLANAR TRANSISTOR**

FEATURES

- $V_{CEO} = 40V$
- $I_C = 0.7A$
- $P_{tot} = 5W$

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

V_{CBO}	Collector – Base Voltage	60V
V_{CEO}	Collector – Emitter Voltage	40V
V_{CER}	Collector – Emitter Sustaining Voltage	50V
V_{CEX}	Collector - Emitter Voltage	60V
V_{EBO}	Emitter-Base Voltage	5V
I_C	Collector Current	0.7A
P_{TOT}	Power Dissipation $T_{amb} = 25^{\circ}C$	1W
	$T_{case} = 25^{\circ}C$	5W
T_j	Junction Temperature	200°C
T_{stg}	Storage Temperature	-65 to 200°C
$R_{th(jc)}$	Thermal Resistance Junction to Case	35°C / W
$R_{th(ja)}$	Thermal Resistance Junction to Ambient	175°C / W

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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Document Number 3065

Issue 1

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

Parameter		Test Conditions		Min.	Typ.	Max.	Unit
$V_{CEO(SUS)}$	Collector – Emitter Voltage	$I_C = 100\mu A$	$I_B = 0$	40			V
$V_{CER(SUS)*}$	Collector – Emitter Voltage	$R_{BE} = 10\Omega$	$I_C = 10mA$	50			
$V_{(BR)CBO*}$	Collector – Base Breakdown Voltage	$I_C = 0.1mA$	$I_E = 0$	60			
$V_{(BR)EBO*}$	Emitter – Base Breakdown Voltage	$I_E = 0.1mA$	$I_C = 0$	5			
I_{CBO}	Collector – Base Cut-off Current	$V_{CB} = 30V$	$I_E = 0$			0.25	μA
I_{EBO}	Emitter - Base Cut-off Current	$V_{EB} = 4V$	$I_C = 0$			0.25	
$V_{CE(sat)*}$	Collector – Emitter Saturation Voltage	$I_C = 0.15A$	$I_B = 0.015A$			1.4	V
$V_{BE(sat)*}$	Base – Emitter Saturation Voltage	$I_C = 0.15A$	$I_B = 0.015A$			1.7	
h_{21E*}	Static Forward Current Transfer ratio	$I_C = 0.15A$	$V_{CE} = 10V$	50		250	—
f_T	Transistion Frequency	$V_{CE} = 10V$ $f = 20MHz$	$I_C = 0.05A$	100			MHz
C_{22b}	Output Capacitance	$V_{CB} = 10V$	$f = 1MHz$			15	ρF
C_{11b}	Input Capacitance	$V_{EB} = 10V$	$f = 1MHz$			80	

* Pulsed $t_p = 300\mu S$ $\delta \leq 2\%$