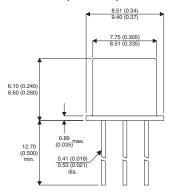
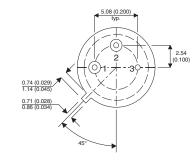




MECHANICAL DATA

Dimensions in mm (inches)





Underside View TO39 PACKAGE (TO-205AD)

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

SILICON NPN PLANAR TRANSISTOR

FEATURES

- V_{CBO} = 120V
- V_{CEO} = 120V
- $I_C = 1.0A$

DESCRIPTION

General Purpose NPN Transistor in a Hermetic TO39 Package

ABSOLUTE MAXIMUM RATINGS (T_{case} = 25°C unless otherwise stated)

V_{CBO}	Collector – Base Voltage (open emitter)	120V
V_{CEO}	Collector - Emitter Voltage (open base)	120V
$I_{\mathbb{C}}$	Collector Current (d.c.)	1.0A
I _{CM}	Collector Current (peak value)	2A
P_{TOT}	Total Device Dissipation @ T _{amb} ≤ 45°C	0.7W
P_{TOT}	Total Device Dissipation @ $T_C \le 25^{\circ}C$	5W
P_{TOT}	Total Device Dissipation @ $T_C \le 100^{\circ}C$	2.85W
T _{stg}	Storage Temperature	−65 to 200°C
Tj	Junction Temperature	200°C
$R_{\theta JC}$	Thermal Resistance Junction to Case	35°C / W
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	220°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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ELECTRICAL CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

Parameter		Test Con	Min.	Тур.	Max.	Unit	
V _{(BR)CEO*}	Collector – Emitter Breakdown Voltage	I _C = 10mA	I _B = 0	120			V
V _{(BR)CBO*}	Collector – Base Breakdown Voltage	I _C = 100μA	$I_E = 0$	120			V
V _{(BR)EBO*}	Emitter – Base Breakdown Voltage	I _E = 100μA	I _C = 0	6			V
I _{CBO}	Collector Cut-off Current	V _{CB} = 60V	I _E = 0			0.1	μА
		V _{CB} = 60V	$I_E = 0$			50	
		$T_{amb} = 150^{\circ}C$				50	
V _{CE(sat)*}	Collector – Emitter Saturation Voltage	I _C = 0.1A	I _B = 0.01A			0.15	V
		$I_{C} = 0.5A$	$I_{B} = 0.05A$			0.5	
		I _C = 1.0A	$I_B = 0.15A$			1.0	
V _{BE(sat)*}	Base – Emitter Saturation Voltage	I _C = 0.1A	$I_B = 0.01A$			0.9	
		$I_{\rm C} = 0.5A$	$I_{B} = 0.05A$			1.1	V
		I _C = 1.0A	$I_B = 0.15A$			1.2	
h _{FE*}	DC Current Gain	I _C = 0.1A	$V_{CE} = 5V$	40			
		I _C = 0.5A	$V_{CE} = 5V$	30			_
		I _C = 1.0A	V _{CE} = 5V	15			

 t^{\star} Pulse test $t_p = 300 \mu s$, $\delta \leq 1.5\%$

DYNAMIC CHARACTERISTICS (T_{case} = 25°C unless otherwise stated)

. 6000									
Parameter		Test Conditions			Min.	Тур.	Max.	Unit	
f _T	Transition Frequency	I _C = 100mA	V _{CE} = 20V	f = 35MHz	50			MHz	
C _{obo}	Output Capacitance	V _{CB} = 10V	$I_E = 0$	f = 1.0MHz			20	pF	
C _{ibo}	Input Capacitance	$V_{EB} = 0$	I _E = 0	f = 1.0MHz			300	pF	
t _{on}	Turn-On Time	$I_{\rm C} = 0.5A$	V _{CC} = 20V			0.3			
t _{off}	Turn-Off Time	I _{B1} =- I _{B2} =	0.05A			1.0		μs	

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