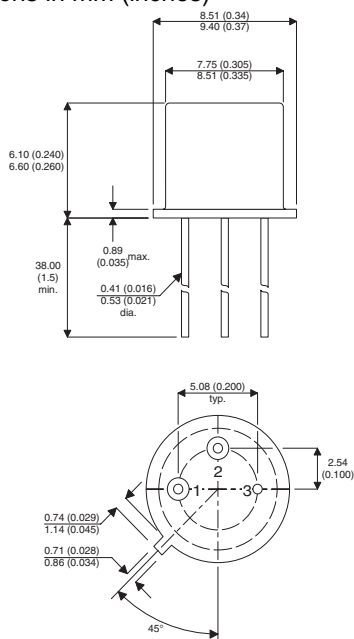


MECHANICAL DATA

Dimensions in mm (inches)



TO5 (TO-205AA)

Underside View

PIN 1 – Emitter

PIN 2 – Base

PIN 3 – Collector

HIGH VOLTAGE SILICON EPITAXIAL NPN TRANSISTOR

FEATURES

- **SILICON PLANAR EPITAXIAL NPN TRANSISTOR**
- **HIGH BREAKDOWN VOLTAGE**
- **LOW SATURATION VOLTAGE**
- **HERMETIC TO5 or TO39 ('S' Suffix) PACKAGE**
- **HI-RELIABILITY SCREENING OPTIONS AVAILABLE**

APPLICATIONS

For high reliability general purpose high voltage switching and linear applications requiring small size and low weight devices.

ABSOLUTE MAXIMUM RATINGS T_{CASE} = 25°C unless otherwise stated

CASE		
V_{CBO}	Collector - Base Voltage	1000V
V_{CER}	Collector - Emitter Voltage ($R_{BE} = 1.0K\Omega$)	1000V
V_{EBO}	Emitter – Base Voltage	5V
I_C	Continuous Collector Current	0.5A
P_{tot}	Total Power Dissipation $T_{case} = 50^\circ C$	2W
	De-rate Linearly $T_{case} > 25^\circ C$	20mW/ $^\circ C$
$T_{sta.} T_J$	Operating and Storage Temperature Range	-55 to +150 $^\circ C$

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.

THERMAL CHARACTERISTICS

$R_{\theta JC}$	Thermal Resistance Junction - Case	Max	50	°C/W
$R_{\theta JA}$	Thermal Resistance Junction - Ambient	Max	175	°C/W

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

	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{(BR)CER}^*$	Collector - Emitter Breakdown Voltage	$I_C = 100\mu\text{A}$ $R_{BE} = 1.0\text{K}\Omega$	1000	-	-	V
$V_{(BR)CBO}^*$	Collector - Base Breakdown Voltage	$I_C = 200\mu\text{A}$	1000	-	-	
$V_{(BR)EBO}^*$	Emitter - Base Breakdown Voltage	$I_C = 0$ $I_E = 50\mu\text{A}$	5.0	-	-	
I_{CBO}^*	Collector - Base Cut-Off Current	$V_{CB} = 760\text{V}$	-	-	12	μA
		$T_{CASE} = 100^{\circ}\text{C}$	-	10	100	
I_{EBO}^*	Emitter - Base Cut-Off Current	$V_{EB} = 4\text{V}$	-	-	20	V
$V_{CE(sat)}^*$	Collector - Emitter Saturation Voltage	$I_C = 20\text{mA}$ $I_B = 5.0\text{mA}$	-	-	1.8	V
$V_{BE(sat)}^*$	Base - Emitter Saturation Voltage	$I_C = 20\text{mA}$ $I_B = 5.0\text{mA}$	-	-	1.0	V
h_{FE}^*	DC Current Gain	$I_C = 5\text{mA}$ $V_{CE} = 10\text{V}$	10	-	-	
		$I_C = 20\text{mA}$ $V_{CE} = 10\text{V}$	30	-	180	
		$T_{CASE} = -55^{\circ}\text{C}$	10	-	-	

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

f_T	Transition Frequency	$I_C = 20\text{mA}$ $V_{CE} = 10\text{V}$ $f = 10\text{MHz}$	10	-	-	MHz
C_{OBO}	Open Circuit Output Capacitance	$I_E = 0$ $V_{CB} = 10\text{V}$ $f = 1.0\text{MHz}$	-	-	30	pF

* Pulse test $t_p = 300\mu\text{s}$, $\delta < 2\%$

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