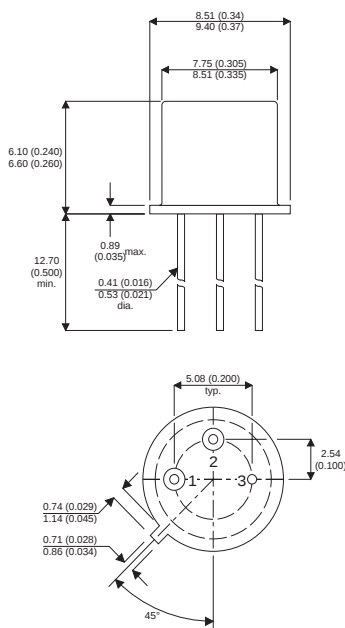


MECHANICAL DATA

Dimensions in mm(Inches)



TO39 PACKAGE(TO205AD)

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

NPN SILICON PLANAR EPITAXIAL TRANSISTOR IN HERMETICALLY SEALED METAL CASE

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

V_{CBO}	Maximum Collector to Base Continuous Voltage	150V
V_{CEO}	Maximum Collector to Emitter Continuous voltage	60V
V_{EBO}	Maximum Emitter to Base Continuous reverse Voltage	7V
I_C	Maximum Continuous Collector Current	10A
I_B	Maximum Continuous Base Current	2A
P_{TOT}	Maximum total Power Dissipation up to $T_{case} = 25^{\circ}C$	30W
	$T_{case} = 100^{\circ}C$	15W
	$T_{amb} = 25^{\circ}C$	1W
T_C	Junction Temperature	-65 to +175°C
T_{stg}	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.

THERMAL CHARACTERISTICS

$R_{th\ j-case}$	Thermal resistance to case	Max	5.0°C/W
$R_{th\ j-amb}$	Thermal resistance junction to ambient	Max	150°C/W

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
h_{21E}	Static value of common-emitter forward current transfer ratio *	$V_{CE} = 5V$ $I_C = 1.5A$	40		—
		$V_{CE} = 5v$ $I_C = 10A$	15		
$V_{CE(SAT)}$	Collector-Emitter Saturation Voltage*	$I_C = 10A$ $I_B = 5V$		1.0	V
		$I_C = 1.5A$ $I_B = 150mA$		0.8	
$V_{BE(SAT)}$	Base - Emitter Saturation Voltage*	$I_C = 10A$ $I_B = 1.0A$		1.8	
		$I_C = 1.5A$ $I_B = 150mA$		1.2	
I_{CBO}	Collector - Base Cut-off Current	$V_{CB} = 100V$ $I_E = 0$		10	μA
		$T_{Case} = 150^{\circ}C$		500	
I_{EBO}	Emitter - Base Cut-off Current	$V_{EB} = 5V$ $I_C = 0$		10	
t_{on}	Turn on time	$I_C = 5A$ $I_{B1} = 0.5A$		1	μs
		$I_C = 10A$ $I_{B1} = 1A$		1.5	
t_{off}	Turn off time	$I_C = 5A$ $I_{B1} = - I_{B2} = 0.5A$		1	
		$I_C = 10A$ $I_{B1} = - I_{B2} = 1A$		1	
C_{22b}	Output capacitance	$V_{CB} = 10V$ $I_E = 0$ $f = 1MHz$		200	pF
C_{11b}	Input capacitance	$V_{EB} = 0.5V$ $I_C = 0$ $f = 1MHz$		850	
f_T	Transition Frequency	$V_{CE} = 10V$ $I_C = 100mA$ $f = 20MHz$	40		MHz

* Measured under pulse conditions: Pulse length = 300 ms, duty cycle = 1.5%