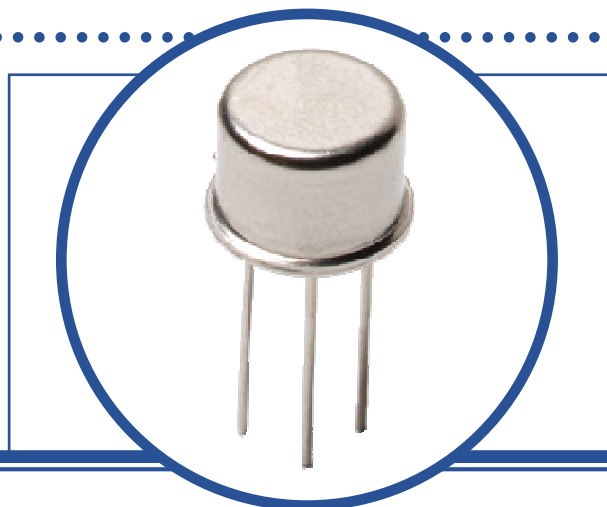


SILICON EPITAXIAL NPN TRANSISTOR

2N5154T2A

- Hermetic Metal TO39 Package
- High Reliability and Space Screening Options Available



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise stated)

V _{CBO}	Collector – Base Voltage (I _E = 0)	100V
V _{CEO}	Collector – Emitter Voltage (I _B = 0)	80V
V _{EBO}	Emitter – Base Voltage	5.5V
I _C	Continuous Collector Current	2A
I _{CM}	Peak Collector Current ⁽¹⁾	10A
P _D	Total Power Dissipation at T _A = 25°C	1W
	Derate Above 25°C	5.71mW/°C
P _D	Total Power Dissipation at T _C = 50°C	10W
	Derate Above 50°C	66.67mW/°C
T _J	Junction Temperature Range	-65 to +200°C
T _{stg}	Storage Temperature Range	-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Min.	Typ.	Max.	Units
R _{θJC}	Thermal Resistance, Junction To Case			15	°C/W
R _{θJA}	Thermal Resistance, Junction To Ambient			175	°C/W

(1) This value applies for P_w ≤ 8.3ms, duty cycle ≤ 1%.

Semelab Limited 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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Issue 1

Page 1 of 3

SILICON EPITAXIAL NPN TRANSISTOR 2N5154T2A

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(2)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	80			V
I_{CES}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$ $V_{BE} = 0$			1.0	μA
		$V_{CE} = 100\text{V}$ $V_{BE} = 0$			1.0	mA
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 60\text{V}$ $V_{BE} = -2\text{V}$ $T_C = 150^\circ\text{C}$			25	μA
I_{CEO}	Collector Cut-Off Current	$V_{CE} = 40\text{V}$ $I_B = 0$			50	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 4\text{V}$ $I_C = 0$			1.0	
		$V_{EB} = 5.5\text{V}$ $I_C = 0$			1.0	mA
$h_{FE}^{(2)}$	Forward-current transfer ratio	$I_C = 50\text{mA}$ $V_{CE} = 5\text{V}$	50			-
		$I_C = 2.5\text{A}$ $V_{CE} = 5\text{V}$ $T_C = -55^\circ\text{C}$	70		200	
			25			
		$I_C = 5\text{A}$ $V_{CE} = 5\text{V}$	40			
$V_{BE}^{(2)}$	Base-Emitter Voltage	$I_C = 2.5\text{A}$ $V_{CE} = 5\text{V}$			1.45	V
$V_{BE(sat)}^{(2)}$	Collector-Emitter Saturation Voltage	$I_C = 2.5\text{A}$ $I_B = 250\text{mA}$			1.45	
		$I_C = 5\text{A}$ $I_B = 500\text{mA}$			2.2	
$V_{CE(sat)}^{(2)}$	Base-Emitter Saturation Voltage	$I_C = 2.5\text{A}$ $I_B = 250\text{mA}$			0.75	
		$I_C = 5\text{A}$ $I_B = 500\text{mA}$			1.5	

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Magnitude of common-emitter, small-signal short-circuit, forward-current transfer ratio	$I_C = 500\text{mA}$ $V_{CE} = 5\text{V}$ $f = 20\text{MHz}$		1.2		-
h_{fe}	Small-Signal Current Gain	$I_C = 100\text{mA}$ $V_{CE} = 5\text{V}$ $f = 1.0\text{KHz}$	50			-
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			250	pF
t_{on}	Turn-On Time	$V_{CC} = 30\text{V}$ $I_C = 5\text{A}$ $I_{B1} = 500\text{mA}$ $I_{B2} = -I_{B1}$ $R_L = 6\Omega$			0.5	μS
t_s	Storage Time				1.4	
t_f	Fall Time				0.5	
t_{off}	Turn-Off Time				1.5	

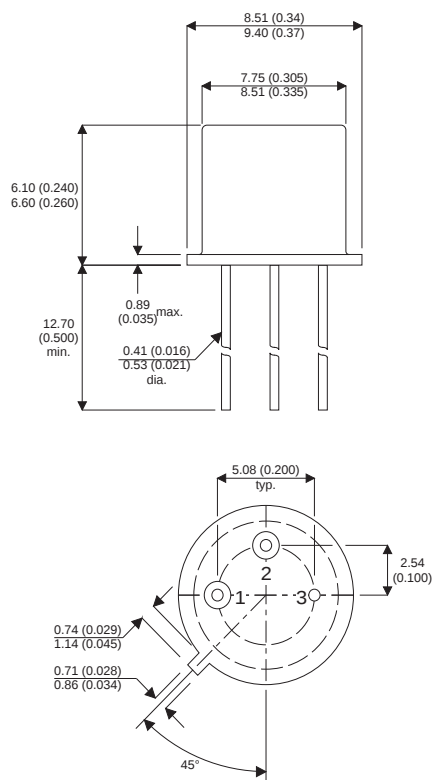
Notes

(2) Pulse Width $\leq 300\mu\text{s}$, $\delta \leq 2\%$

SILICON EPITAXIAL NPN TRANSISTOR 2N5154T2A

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector