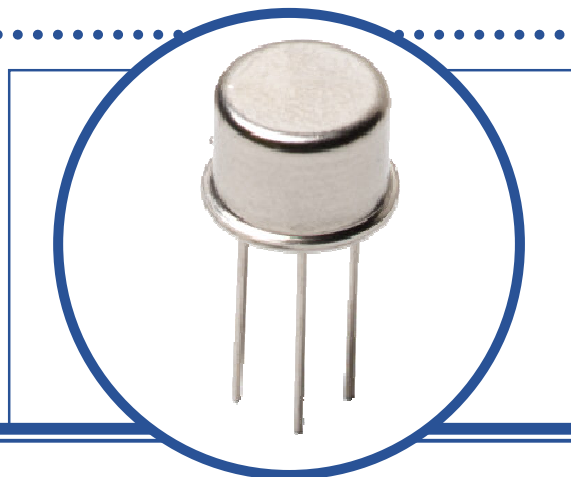


SILICON PLANAR NPN TRANSISTOR

2N3421

- Hermetic TO-39 Metal package.
- Ideally suited for Small Signal General Purpose and Switching Applications
- Screening Options Available



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

V _{CBO}	Collector – Base Voltage	125V
V _{CEO}	Collector – Emitter Voltage	80V
V _{EBO}	Emitter – Base Voltage	8V
I _C	Continuous Collector Current	3A
P _D	Total Power Dissipation at T _A = 25°C	1.0W
	Derate Above 25°C	5.7mW/°C
I _C ⁽²⁾	Continuous Collector Current	5A
T _J	Junction Temperature Range	-65 to +200°C
T _{stg}	Storage Temperature Range	-65 to +200°C

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
R _{θJA}	Thermal Resistance, Junction To Ambient	175	°C/W
R _{θJC}	Thermal Resistance, Junction To Case	18	°C/W

Notes

- (1) Pulse Width ≤ 380μs, δ ≤ 2%
(2) t_p ≤ 1ms, duty cycle ≤ 50 percent

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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SILICON PLANAR NPN TRANSISTOR 2N3421

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 50\text{mA}$ $I_B = 0$	80			V
I_{CEX}	Collector-Emitter Cut-off Current	$V_{CE} = 120\text{V}$ $V_{BE} = -0.5\text{V}$			0.3	μA
I_{CEO}	Collector-Emitter Cut-Off Current	$V_{CE} = 60\text{V}$ $I_B = 0$			5.0	
I_{EBO}	Emitter Cut-Off Current	$V_{EB} = 6\text{V}$ $I_C = 0$			0.5	
		$V_{EB} = 8\text{V}$ $I_C = 0$			10	V
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 1\text{A}$ $I_B = 100\text{mA}$			0.25	
		$I_C = 2\text{A}$ $I_B = 200\text{mA}$			0.5	
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 1\text{A}$ $I_B = 100\text{mA}$	0.6		1.2	
		$I_C = 2\text{A}$ $I_B = 200\text{mA}$	0.7		1.4	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 100\text{mA}$ $V_{CE} = 2\text{V}$	40			-
		$I_C = 1\text{A}$ $V_{CE} = 2\text{V}$	40		120	
		$I_C = 2\text{A}$ $V_{CE} = 2\text{V}$	30			
		$I_C = 5\text{A}$ $V_{CE} = 5\text{V}$	15			

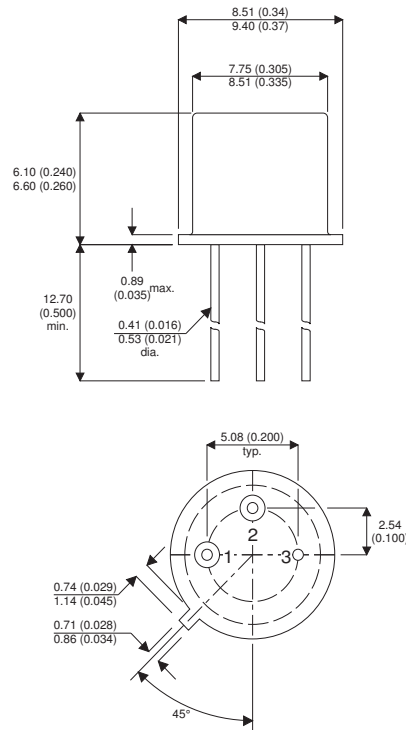
DYNAMIC CHARACTERISTICS

$ h_{fe} $	Small signal forward-current transfer ratio	$I_C = 100\text{mA}$ $V_{CE} = 10\text{V}$ $f = 20\text{MHz}$	1.0		8	-
t_r	Rise Time	$I_C = 1.0\text{A}$ $I_{B1} = 100\text{mA}$ $I_{B2} = -100\text{mA}$ $V_{BE(off)} = -3.7\text{V}$ $R_L = 20\Omega$		0.22		μs
t_d	Delay Time			0.08		
t_s	Storage Time			1.1		
t_f	Fall Time			0.2		
t_{off}	Turn Off Time			1.2		
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			150	pF

SILICON PLANAR NPN TRANSISTOR 2N3421

MECHANICAL DATA

Dimensions in mm (inches)



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

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector