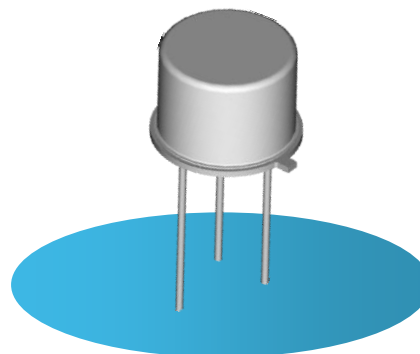


# SILICON PNP TRANSISTORS



## 2N5415 / 2N5416

- Hermetic TO-39 Metal Package.
- High Voltage
- Ideally Suited As Drivers In High Voltage Low Current Inverters, Switching and Series Regulators.
- High Reliability Screening Options Available.



### ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise stated)

Symbols	Parameters	2N5415	2N5416
$V_{CBO}$	Collector – Base Voltage	-200V	-350V
$V_{CEO}$	Collector – Emitter Voltage	-200V	-300V
$V_{EBO}$	Emitter – Base Voltage	-4V	-6V
$I_C$	Collector Current – Continuous		-1.0A
$I_B$	Base Current		-0.5A
$P_D$	Total Power Dissipation at $T_A = 25^\circ\text{C}$ Derate Above $25^\circ\text{C}$		1.0W 5.71mW/ $^\circ\text{C}$
$T_J$	Junction Temperature Range		-65 to $+200^\circ\text{C}$
$T_{stg}$	Storage Temperature Range		-65 to $+200^\circ\text{C}$

### THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	175	$^\circ\text{C}/\text{W}$

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 PNP TRANSISTOR



## 2N5415 / 2N5416

### 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	$I_C = -10\text{mA}$ $I_B = 0$	2N5415	-200		V
			2N5416	-300		
$V_{(BR)CER}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = -10\text{mA}$ $R_{BE} = 50\Omega$	2N5416	-350		V
$I_{CEO}$	Collector Cut-Off Current	$V_{CE} = -150\text{V}$ $I_B = 0$			-50	$\mu\text{A}$
$I_{CBO}$	Collector Cut-Off Current	$V_{CB} = -175\text{V}$	$I_E = 0$	2N5415	-50	
		$V_{CB} = -280\text{V}$		2N5416	-50	
$I_{EBO}$	Emitter Cut-Off Current	$V_{EB} = -4\text{V}$	$I_C = 0$	2N5415	-20	
		$V_{EB} = -6\text{V}$		2N5416	-20	
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = -50\text{mA}$ $I_B = -5\text{mA}$			-2.5	V
$V_{BE(on)}^{(1)}$	Base-Emitter On Voltage	$I_C = -50\text{mA}$ $V_{CE} = -10\text{V}$			-1.5	
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = -50\text{mA}$ $V_{CE} = -10\text{V}$	2N5415	30	150	
			2N5416	30	120	

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

Symbols	Parameters	Test Conditions	Min.	Typ	Max.	Units
$f_T$	Transition Frequency	$I_C = -10\text{mA}$ $V_{CE} = -10\text{V}$ $f = 5\text{MHz}$	15			MHz
$h_{fe}$	Small signal forward-current transfer ratio	$I_C = -5\text{mA}$ $V_{CE} = -10\text{V}$ $f = 1.0\text{KHz}$	25			
$C_{obo}$	Output Capacitance	$V_{CB} = -10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			25	pF

#### Notes

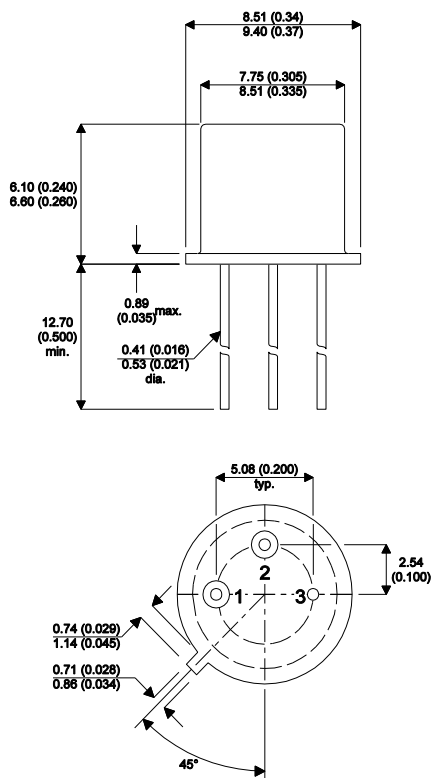
(1) Pulse Width  $\leq 380\mu\text{s}$ ,  $\delta \leq 2\%$

# SILICON PNP TRANSISTOR

## 2N5415 / 2N5416

### MECHANICAL DATA

Dimensions in mm (inches)



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

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector

### LEAD FINISH / ROHS

Part Number	Termination Finish <sup>(i)</sup>	SML ROHS
2N5415	Au (Gold)	G4 <sup>(ii)</sup>
2N5416		

Notes:

- i. Other lead finish options available (eg Hot Solder Dip). Specify lead finish requirements at point of order.
- ii. Standard lead finish is G4 = e4 as defined in J-STD-609 2<sup>nd</sup> Level Interconnect Category.

# Mouser Electronics

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