

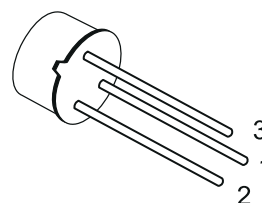
## SILICON PNP TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- PNP TRANSISTORS

### DESCRIPTION

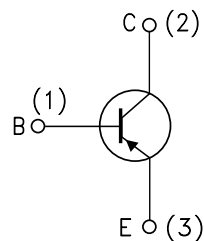
The 2N5415, 2N5416 are high voltage silicon epitaxial planar PNP transistors in Jedec TO-39 metal case designed for use in consumer and industrial line-operated applications.

These devices are particularly suited as drivers in high-voltage low current inverters, switching and series regulators.



**TO-39**

### INTERNAL SCHEMATIC DIAGRAM



SC08810

### ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value		Unit
		2N5415	2N5416	
$V_{CBO}$	Collector-Base Voltage ( $I_E = 0$ )	-200	-350	V
$V_{CEO}$	Collector-Emitter Voltage ( $I_B = 0$ )	-200	-300	V
$V_{EBO}$	Emitter-Base Voltage ( $I_C = 0$ )	-4	-6	V
$I_C$	Collector Current	-1		A
$I_B$	Base Current	-0.5		A
$P_{tot}$	Total Dissipation at $T_c \leq 25\text{ }^{\circ}\text{C}$	10		W
$P_{tot}$	Total Dissipation at $T_{amb} \leq 50\text{ }^{\circ}\text{C}$	1		W
$T_{stg}$	Storage Temperature	-65 to 200		$^{\circ}\text{C}$

## 2N5415 / 2N5416

### THERMAL DATA

R <sub>thj-case</sub>	Thermal Resistance Junction-case	Max	17.5	°C/W
R <sub>thj-amb</sub>	Thermal Resistance Junction-ambient	Max	175	°C/W

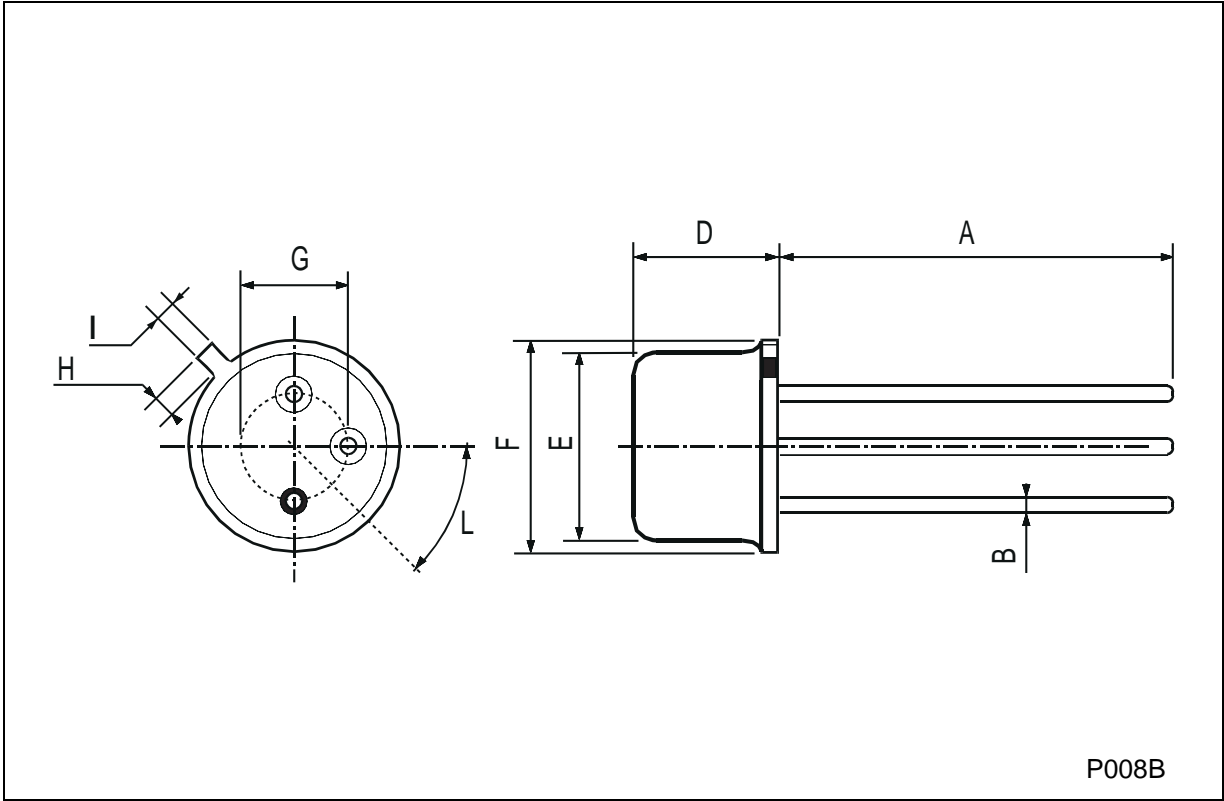
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I <sub>CBO</sub>	Collector Cut-off Current (I <sub>E</sub> = 0)	for <b>2N5415</b> V <sub>CB</sub> = -175 V for <b>2N5416</b> V <sub>CB</sub> = -280 V			-50 -50	μA μA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = -150 V			-50	μA
I <sub>EBO</sub>	Emitter Cut-off Current (I <sub>C</sub> = 0)	for <b>2N5415</b> V <sub>EB</sub> = -4 V for <b>2N5416</b> V <sub>EB</sub> = -6 V			-20 -20	μA μA
V <sub>CER</sub> *	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -50 mA R <sub>BE</sub> = 50Ω for <b>2N5416</b>	-350			V
V <sub>CEO(sus)</sub> *	Collector-Emitter Sustaining Voltage	I <sub>C</sub> = -10 mA for <b>2N5415</b> for <b>2N5416</b>	-200 -300			V V
V <sub>CE(sat)</sub> *	Collector-Emitter Saturation Voltage	I <sub>C</sub> = -50 mA I <sub>B</sub> = -5 mA			-2.5	V
V <sub>BE</sub> *	Base-Emitter Voltage	I <sub>C</sub> = -50 mA V <sub>CE</sub> = -10 V			-1.5	V
h <sub>FE</sub> *	DC Current Gain	I <sub>C</sub> = -50 mA V <sub>CE</sub> = -10 V for <b>2N5415</b> for <b>2N5416</b>	30 30		150 120	
h <sub>fe</sub>	Small Signal Current Gain	I <sub>C</sub> = -5 mA V <sub>CE</sub> = -10 V f = 1KHz	25			
f <sub>T</sub>	Transition frequency	I <sub>C</sub> = -10 mA V <sub>CE</sub> = -10 V f = 5MHz	15			MHz
C <sub>CBO</sub>	Collector Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = -10 V f = 1MHz			25	pF

\* Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

TO-39 MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A	12.7			0.500		
B			0.49			0.019
D			6.6			0.260
E			8.5			0.334
F			9.4			0.370
G	5.08			0.200		
H			1.2			0.047
I			0.9			0.035
L	45° (typ.)					



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