

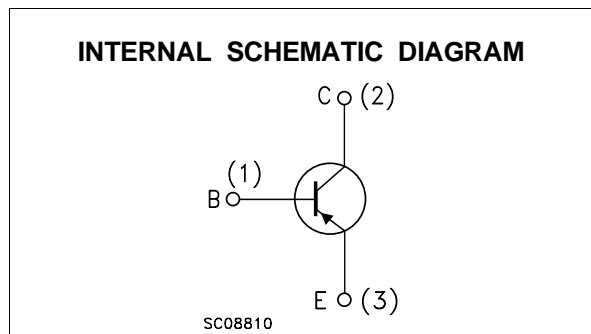
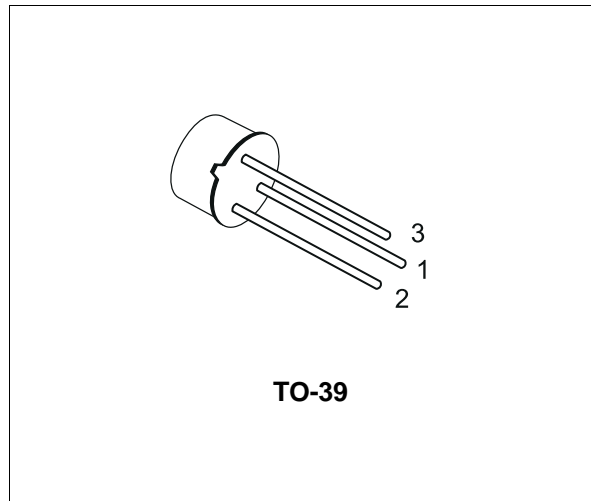
## SILICON PNP TRANSISTORS

- 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.



### 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

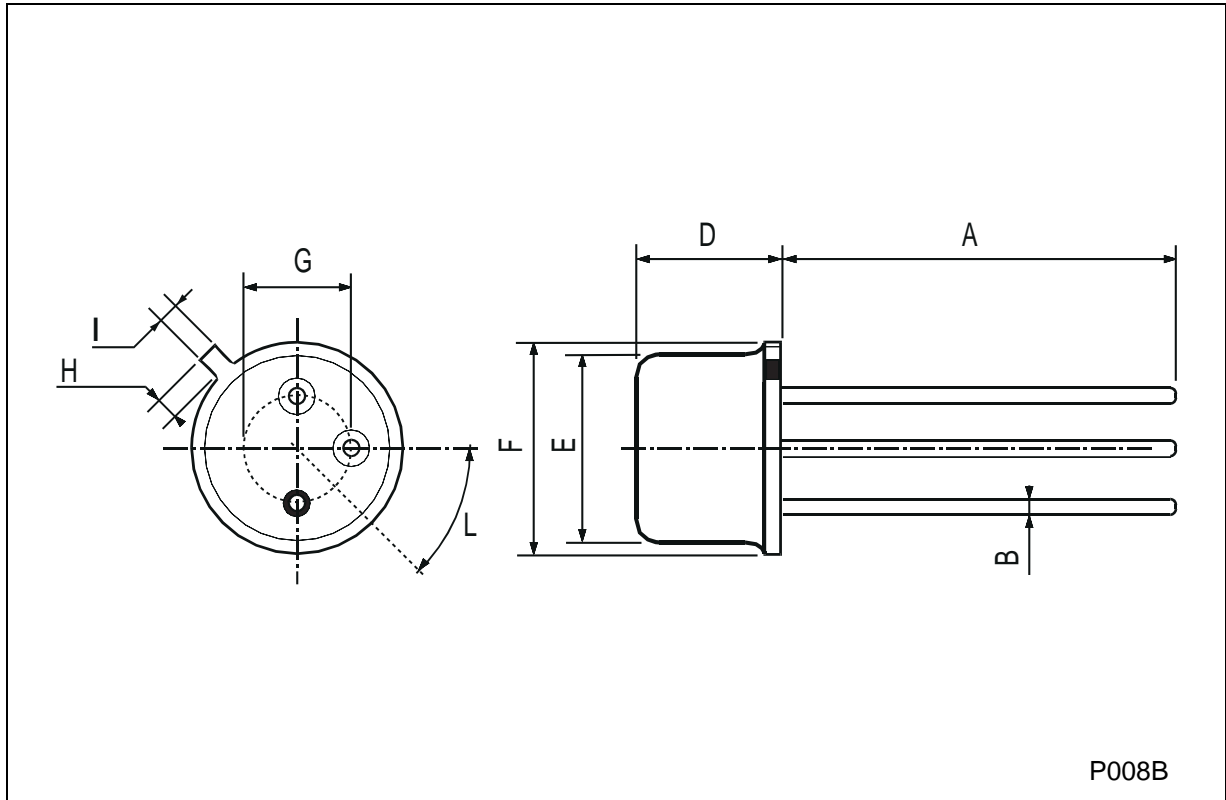
### ELECTRICAL CHARACTERISTICS (T<sub>case</sub> = 25 °C unless otherwise specified)

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>CEER</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.)					



Information furnished is believed to be accurate and reliable. However, STMicroelectronics assumes no responsibility for the consequences of use of such information nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of STMicroelectronics. Specification mentioned in this publication are subject to change without notice. This publication supersedes and replaces all information previously supplied. STMicroelectronics products are not authorized for use as critical components in life support devices or systems without express written approval of STMicroelectronics.

The ST logo is a trademark of STMicroelectronics

© 2000 STMicroelectronics – Printed in Italy – All Rights Reserved

STMicroelectronics GROUP OF COMPANIES

Australia - Brazil - China - Finland - France - Germany - Hong Kong - India - Italy - Japan - Malaysia - Malta - Morocco -  
Singapore - Spain - Sweden - Switzerland - United Kingdom - U.S.A.

<http://www.st.com>