

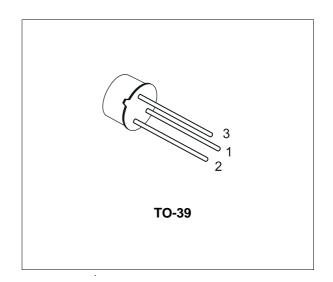
# SILICON PNP TRANSISTORS

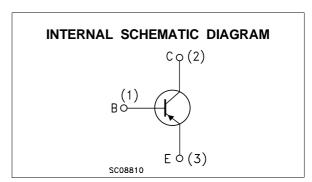
- STMicroelectronics PREFERRED SALESTYPES
- PNP TRANSISTORS

### **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		lue	Unit	
		2N5415	2N5416		
$V_{CBO}$	Collector-Base Voltage (I <sub>E</sub> = 0)	-200	-350	V	
V <sub>CEO</sub>	Collector-Emitter Voltage (I <sub>B</sub> = 0)	-200	-300	V	
V <sub>EBO</sub>	Emitter-Base Voltage (I <sub>C</sub> = 0)	-4	-6	V	
Ic	Collector Current	-1		А	
I <sub>B</sub>	Base Current	-0.5		Α	
P <sub>tot</sub>	Total Dissipation at T <sub>c</sub> ≤ 25 °C	10		W	
P <sub>tot</sub>	Total Dissipation at T <sub>amb</sub> ≤ 50 °C	1		W	
T <sub>stg</sub>	Storage Temperature	-65 to 200		°C	

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### THERMAL DATA

R <sub>thj-cas</sub>	Thermal Resistance Junction-case	Max	17.5	°C/W	l
R <sub>thj-am</sub>	b Thermal Resistance Junction-ambient	Max	175	°C/W	l

# **ELECTRICAL CHARACTERISTICS** ( $T_{case} = 25$ $^{\circ}C$ unless otherwise specified)

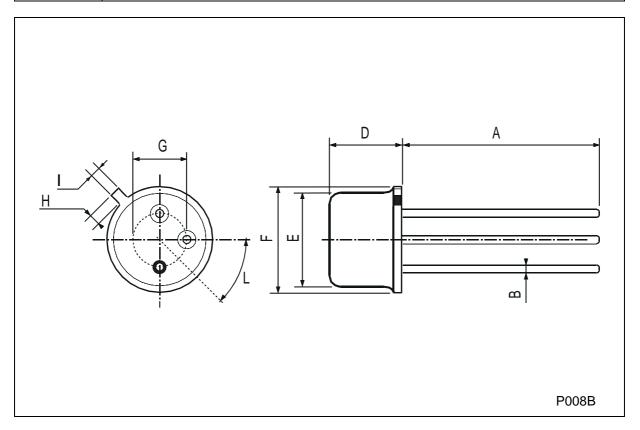
Symbol	Parameter	Test Conditions	Min.	Тур.	Max.	Unit
Ісво	Collector Cut-off Current (I <sub>E</sub> = 0)	for <b>2N5415</b> V <sub>CB</sub> = -175 V for <b>2N5416</b> V <sub>CB</sub> = -280 V			-50 -50	μA μA
I <sub>CEO</sub>	Collector Cut-off Current (I <sub>B</sub> = 0)	V <sub>CE</sub> = -150 V			-50	μΑ
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	$I_C = -50 \text{ mA}$ $R_{BE} = 50\Omega$ 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	$I_C = -50 \text{ mA}$ $I_B = -5 \text{ mA}$			-2.5	V
$V_{BE}*$	Base-Emitter Voltage	$I_{C} = -50 \text{ mA}$ $V_{CE} = -10 \text{ V}$			-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	$I_C = -5 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 1 \text{KHz}$	25			
f⊤	Transition frequency	$I_{C} = -10 \text{ mA}$ $V_{CE} = -10 \text{ V}$ $f = 5 \text{MHz}$	15			MHz
Ссво	Collector Base Capacitance	I <sub>E</sub> = 0 V <sub>CB</sub> = -10 V f = 1MHz			25	pF

<sup>\*</sup> Pulsed: Pulse duration = 300 μs, duty cycle 1.5 %

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## **TO-39 MECHANICAL DATA**

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



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