2N5415
2N5416

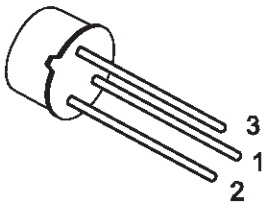
SILICON PNP TRANSISTORS

- STMicroelectronics PREFERRED SALESTYPES
- PNP TRANSISTORS

DESCRIPTION

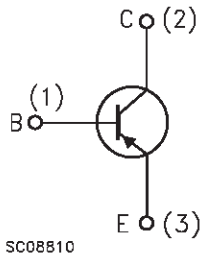
The 2N5415, 2N5416 are high voltage silicon epitaxial planar PNP transistors in Jedec TO-39 metal case designed for use in consumer and industrial line-operated applications.

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



TO-39

INTERNAL SCHEMATIC DIAGRAM



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 $T_c \leq 25\ ^oC$	10		W
P_{tot}	Total Dissipation at $T_{amb} \leq 50\ ^oC$	1		W
T_{stg}	Storage Temperature	-65 to 200		^oC

THERMAL DATA

$R_{thj\text{-}case}$	Thermal Resistance Junction-case	Max	17.5	$^oC/W$
$R_{thj\text{-}amb}$	Thermal Resistance Junction-ambient	Max	175	$^oC/W$

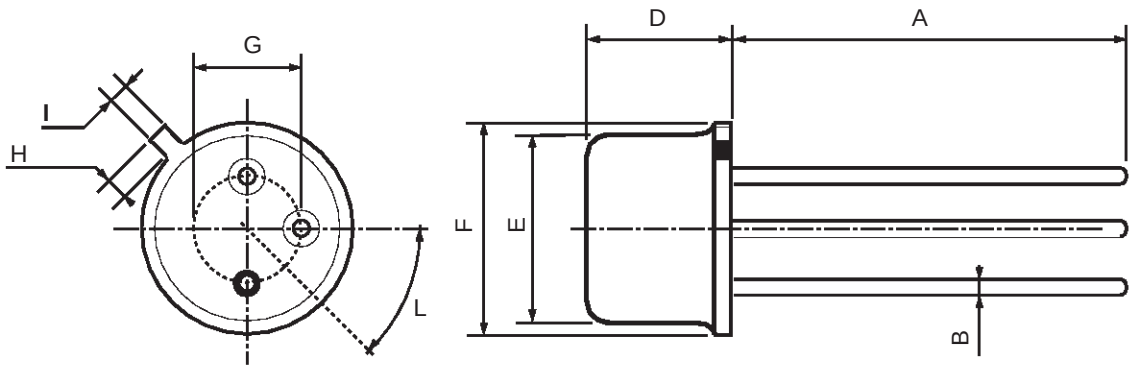
ELECTRICAL CHARACTERISTICS (T_{case} = 25 ^oC unless otherwise specified)

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cut-off Current (I_E = 0)	for **2N5415** V_{CB} = -175 V for **2N5416** V_{CB} = -280 V			-50 -50	µA µA
I_{CEO}	Collector Cut-off Current (I_B = 0)	V_{CE} = -150 V			-50	µA
I_{EBO}	Emitter Cut-off Current (I_C = 0)	for **2N5415** V_{EB} = -4 V for **2N5416** V_{EB} = -6 V			-20 -20	µA µA
V_{CER}*	Collector-Emitter Sustaining Voltage	I_C = -50 mA R_{BE} = 50Ω for **2N5416**	-350			V
$V_{CEO(sus)}$*	Collector-Emitter Sustaining Voltage	I_C = -10 mA for **2N5415** for **2N5416**	 -200 -300			 V V
$V_{CE(sat)}$*	Collector-Emitter Saturation Voltage	I_C = -50 mA I_B = -5 mA			-2.5	V
V_{BE}*	Base-Emitter Voltage	I_C = -50 mA V_{CE} = -10 V			-1.5	V
h_{FE}*	DC Current Gain	I_C = -50 mA V_{CE} = -10 V for **2N5415** for **2N5416**	 30 30		 150 120	
h_{fe}	Small Signal Current Gain	I_C = -5 mA V_{CE} = -10 V f = 1KHz	25			
f_T	Transition frequency	I_C = -10 mA V_{CE} = -10 V f = 5MHz	15			MHz
C_{CBO}	Collector Base Capacitance	I_E = 0 V_{CB} = -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^{o} (typ.)					



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