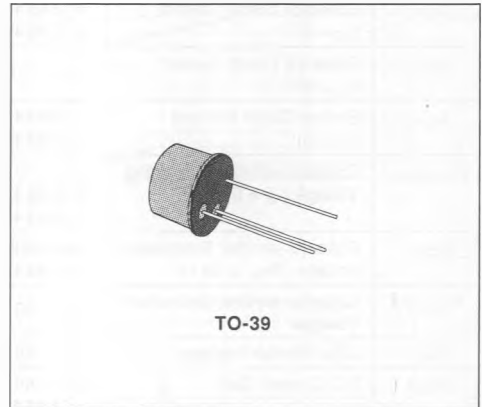


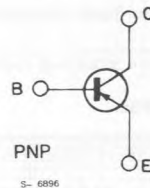
HIGH VOLTAGE TRANSISTORS

DESCRIPTION

The 2N5415, 2N5416 are high voltage silicon epitaxial planar transistors 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.



INTERNAL SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	2N5415	2N5416	Unit
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 Power Dissipation at $T_{case} \leq 25^\circ C$ $T_{amb} \leq 50^\circ C$	10		W
		1		W
T_{stg}	Storage Temperature	- 65 to 200		$^\circ C$
T_J	Junction Temperature	200		$^\circ C$

THERMAL DATA

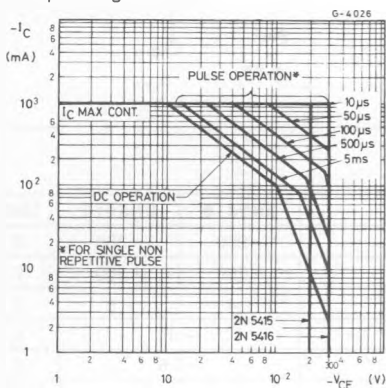
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	17.5	$^{\circ}C/W$
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	150	$^{\circ}C/W$

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

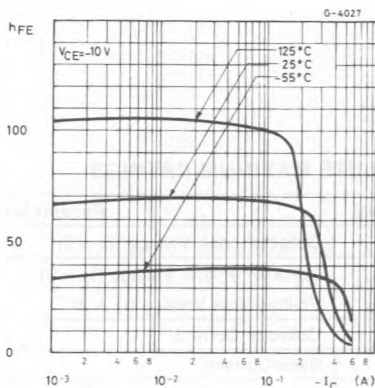
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CBO}	Collector Cutoff Current ($I_E = 0$)	for 2N5415 $V_{CB} = -175\ V$ for 2N5416 $V_{CB} = -280\ V$			- 50 - 50	μA μA
I_{CEO}	Collector Cutoff Current ($I_B = 0$)	$V_{CE} = -150\ V$			- 50	μA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	for 2N5415 $V_{EB} = -4\ V$ for 2N5416 $V_{EB} = -6\ V$			- 20 - 20	μA μA
$V_{CEO(SUS)}^*$	Collector-emitter Sustaining Voltage ($I_B = 0$)	$I_C = -10\ mA$ for 2N5415 for 2N5416	- 200 - 300			V V
V_{CER}^*	Collector-emitter Sustaining Voltage ($R_{BE} = 50\ \Omega$)	$I_C = -50\ mA$ for 2N5416	- 350			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_{ie}	Small Signal Current Gain	$I_C = -5\ mA$ $f = 1\ KHz$	25			
f_T	Transition Frequency	$I_C = -10\ mA$ $f = 5\ MHz$	15			MHz
C_{CBO}	Collector-base Capacitance	$I_E = 0$ $f = 1\ MHz$			25	pF

* Pulsed : pulse duration = 300 μs , duty cycle $\leq 2\%$.

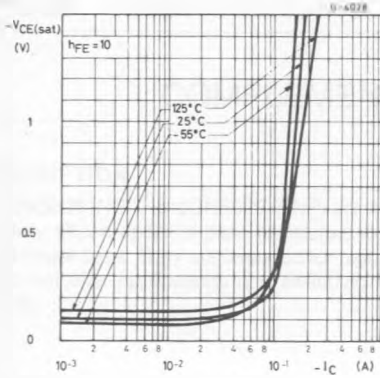
Safe Operating Areas.



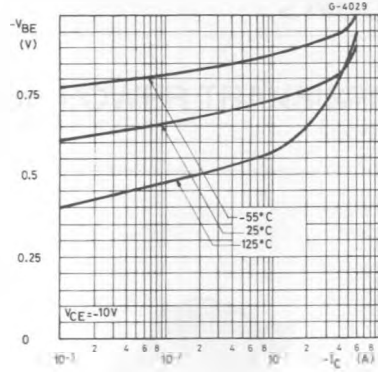
DC Current Gain.



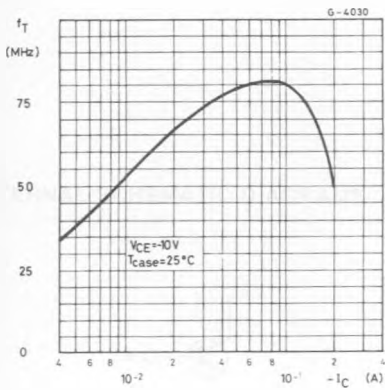
Collector-emitter Saturation Voltage.



Base-emitter Voltage.



Transition Frequency.



Switching Times.

