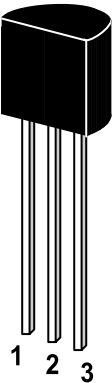


ST 2N3416 / 2N3417

NPN Silicon Epitaxial Planar Transistor General Purpose Amplifier

For use as general purpose amplifiers and switches
requiring collector current to 300 mA.

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1. Emitter 2. Collector 3. Base

TO-92 Plastic Package
Weight approx. 0.19g

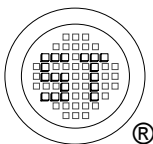
Absolute Maximum Ratings* ($T_a = 25^{\circ}\text{C}$)

	Symbol	Value	Unit
Collector Emitter Voltage	V_{CEO}	50	V
Collector Base Voltage	V_{CBO}	50	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	500	mA
Total Device Dissipation	P_{tot}	625	mW
Derate above 25°C		5	mW/ $^{\circ}\text{C}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_s	-55 to +150	$^{\circ}\text{C}$

*These ratings are limiting values above which the serviceability of semiconductor device may be impaired.

Notes:

- 1) These ratings are based on a maximum junction temperature of 150°C
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.



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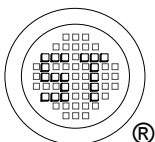
ST 2N3416 / 2N3417

Characteristics at $T_{amb}=25^{\circ}C$

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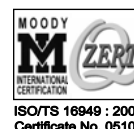
	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain					
at $V_{CE}=4.5V$, $I_C=2mA$ ST 2N3416	h_{FE}	75	-	225	-
ST 2N3417	h_{FE}	180	-	540	-
Small Signal Current Gain					
at $V_{CE}=4.5V$, $I_C=2mA$, $f=1kHz$ ST 2N3416	h_{fe}	75	-	-	-
ST 2N3417	h_{fe}	180	-	-	-
Collector Cutoff Current					
at $V_{CB}=25V$	I_{CBO}	-	-	100	nA
at $V_{CB}=18V$, $T_a=100^{\circ}C$	I_{CBO}	-	-	15	μA
Emitter Cutoff Current					
at $V_{EB}=5V$	I_{EBO}	-	-	100	nA
Collector Saturation Voltage					
at $I_C=50mA$, $I_B=3mA$	$V_{CE(sat)}$	-	-	0.3	V
Base Saturation Voltage					
at $I_C=50mA$, $I_B=3mA$	$V_{BE(sat)}$	0.6	-	1.3	V
Collector Emitter Breakdown Voltage*					
at $I_C=10Ma$	$V_{(BR)CEO}$	50	-	-	V
Collector Base Breakdown Voltage					
at $I_C=10\mu A$	$V_{(BR)CBO}$	50	-	-	V
Emitter Base Breakdown Voltage					
at $I_E=10\mu A$	$V_{(BR)EBO}$	5	-	-	V
Thermal Resistance Junction to Ambient	R_{thA}	-	-	200	$^{\circ}C/W$
Thermal Resistance Junction to Case	R_{thC}	-	-	83.3	$^{\circ}C/W$

*Pulse Test : Pulse width $\leq 300\mu s$, Duty Cycle $\leq 2\%$.



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