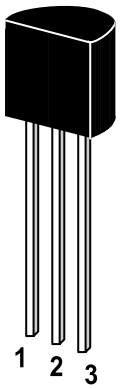
ST 2N3416 / 2N3417

NPN Silicon Epitaxial Planar Transistor
General Purpose Amplifier

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



1. Emitter 2. Collector 3. Base

TO-92 Plastic Package
Weight approx. 0.19g

Absolute Maximum Ratings* (T_a = 25℃)

	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 Derate above 25 ^{O}C	P_{tot}	625 5	mW mW/ ^{O}C
Junction Temperature	T_j	150	^{O}C
Storage Temperature Range	T_S	-55 to +150	^{O}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℃
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

Characteristics at T_{amb}=25 ^{O}C

		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, Ta=100℃		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=10μA		$V_{(BR)CBO}$	50	-	-	V
Emitter Base Breakdown Voltage						
at I_E=10μA		$V_{(BR)EBO}$	5	-	-	V
Thermal Resistance Junction to Ambient		R_{thA}	-	-	200	^{O}C /W
Thermal Resistance Junction to Case		R_{thC}	-	-	83.3	^{O}C /W

*Pulse Test : Pulse width≦300μs, Duty Cycle≦2%.