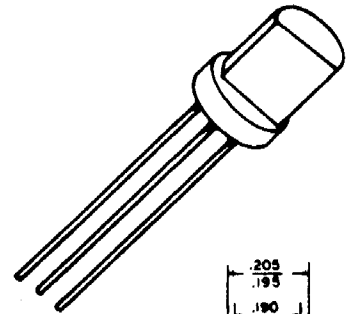


2N3402 - 5
2N3414 - 7

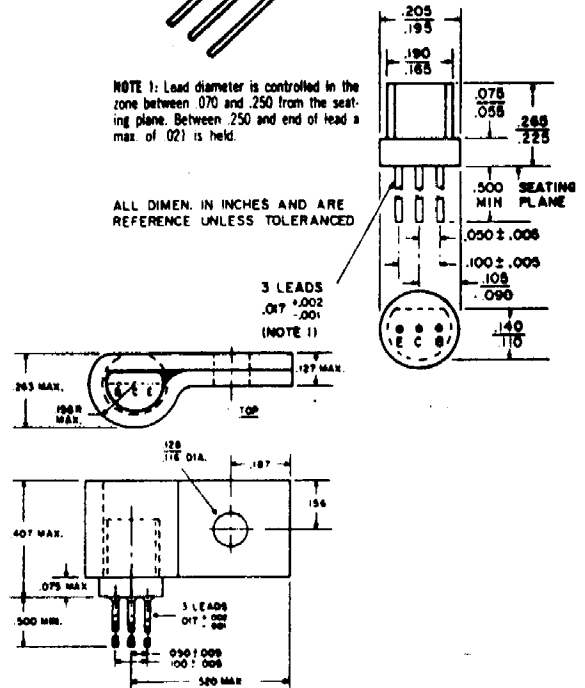


absolute maximum ratings: (25°C) (unless otherwise specified)

	2N3402,3 2N3414,15	2N3404,5 2N3416,17
Voltages		
Collector to Emitter	V_{CE0} 25	50 V
Emitter to Base	V_{EB0} 5	5 V
Collector to Base	V_{CB0} 25	50 V
Current		
Collector (Steady State) *	I_C 500	500 ma
Dissipation		
Heatsink @ 25°C (2N3402-5)**	P_T 900	mw
Total Power (Free Air @ 25°C) †	P_T 560	mw
(2N3402-5)		
Total Power (Free Air @ 25°C) ‡	P_T 360	mw
(2N3414-17)		
Total Power (Free Air @ 65°C) ‡	P_T 260	mw
(2N3414-17)		
Temperature		
Storage	T_{stg} -55 to +150	°C
Operating	T_1 +150	°C
Lead Soldering, $\frac{1}{16}$ " \pm $\frac{1}{32}$ " from case for 10 seconds max.	T_L +260	°C

NOTE 1: Lead diameter is controlled in the zone between .070 and .250 from the seating plane. Between .250 and end of lead a max. of .021 is held.

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- *Determined from power limitations due to saturation voltage at this current.
- **Derate 7.2 mw/°C increase in case temperature above 25°C.
- †Derate 4.47 mw/°C increase in ambient temperature above 25°C.
- ‡Derate 2.67 mw/°C increase in ambient temperature above 25°C.

electrical characteristics: (25°C)

(unless otherwise specified)

DC CHARACTERISTICS

Parameter	2N3402,3 2N3414,5	2N3404,5 2N3416,17
Collector Cutoff Current ($V_{CB} = 25V$) ($V_{CB} = 25V, T_A = 100^\circ C$)	I_{CBO}	0.1
Collector Cutoff Current ($V_{CB} = 50V$) ($V_{CB} = 50V, T_A = 100^\circ C$)	I_{CBO}	15
Emitter Cutoff Current ($V_{EB} = 5V$)	I_{EBO}	0.1
Collector Saturation Voltage ($I_B = 3\text{ ma}, I_C = 50\text{ ma}$)	$V_{CE(SAT)}$	0.30
Base Saturation Voltage ($I_B = 3\text{ ma}, I_C = 50\text{ ma}$)	$V_{BE(SAT)}$	0.85

	Min.	Max.	Min.	Max.	
					μA
					μA
				0.1	μA
				15	μA
				0.1	μA
				0.30	V
				0.85	V

Forward Current Transfer Ratio ($V_{CE} = 4.5V, I_C = 2\text{ ma}$) h_{FE}

	Min.	Max.	Min.	Max.
	75	225	180	540

SMALL SIGNAL CHARACTERISTICS

Forward Current Transfer Ratio Collector Voltage, $V_C = 4.5V$, Frequency of measurement = 1000 cps h_{FE}

	75	2N3403 2N3414	180	2N3405 2N3417

$V_{CE} = 10V; I_C = 1\text{ ma}; f = 1\text{ Kc}; T_A = 25^\circ C$

Forward Current Transfer Ratio h_{FE}

	180	330	150	300	
Input Impedance	5100	9000	4200	8300	ohms
Output Admittance	14	21	10	20	$\mu mhos$
Voltage Feedback Ratio	.27	.45	.2	.4	$\times 10^{-3}$



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