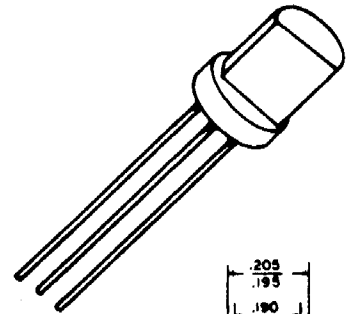


**2N3402 - 5**  
**2N3414 - 7**

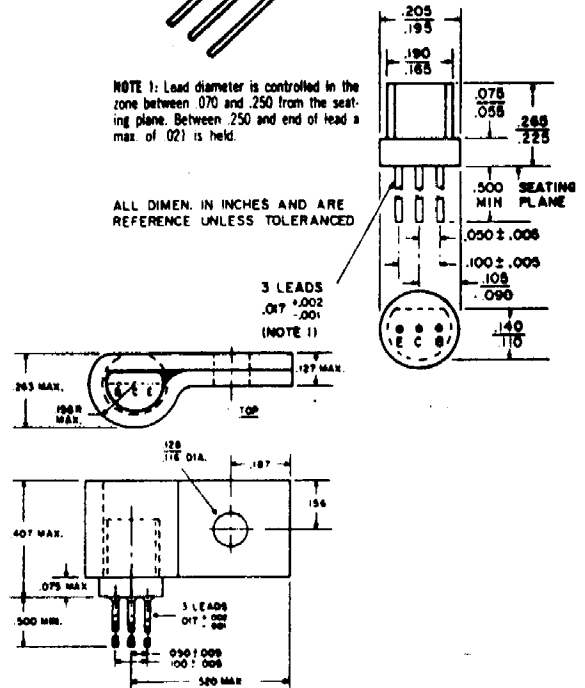


absolute maximum ratings: (25°C) (unless otherwise specified)

	2N3402,3 2N3414,15	2N3404,5 2N3416,17
<b>Voltages</b>		
Collector to Emitter	$V_{CE0}$ 25	50 V
Emitter to Base	$V_{EB0}$ 5	5 V
Collector to Base	$V_{CB0}$ 25	50 V
<b>Current</b>		
Collector (Steady State) *	$I_C$ 500	500 ma
<b>Dissipation</b>		
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)		
<b>Temperature</b>		
Storage	$T_{stg}$ -55 to +150	°C
Operating	$T_1$ +150	°C
Lead Soldering, 1/16" ± 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

	2N3402,3 2N3414,5	2N3404,5 2N3416,7
Collector Cutoff Current ( $V_{CB} = 25V$ ) ( $V_{CB} = 25V, T_A = 100°C$ )	$I_{CBO}$	0.1
		15
Collector Cutoff Current ( $V_{CB} = 50V$ ) ( $V_{CB} = 50V, T_A = 100°C$ )	$I_{CBO}$	
		0.1
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

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

	2N3402,3 2N3414,5	2N3404,5 2N3416,7
Min.	75	180
Max.	225	540

SMALL SIGNAL CHARACTERISTICS

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

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

	2N3402 2N3414	2N3403 2N3415	2N3404 2N3416	2N3405 2N3417
Forward Current Transfer Ratio	$h_{FE}$ 75		180	
Input Impedance	$h_{i1}$ 5100	9000	4200	8300
Output Admittance	$h_{o1}$ 14	21	10	20
Voltage Feedback Ratio	$h_{11}$ .27	.45	.2	.4



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