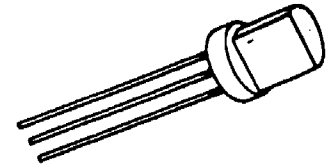


Silicon
Transistors

2N3854,A, 2N3855,A, 2N3856,A, are NPN silicon planar epitaxial passivated transistors designed primarily for RF, IF and converter applications in AM and FM receivers. Selected high voltage units are available for TV video amplifiers. (See typical BV_{CEO})



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

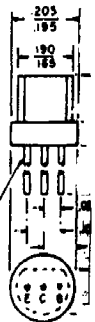
Voltages					
Collector to Emitter	2N3854, 5, 6 2N3854A, 5A, 6A	V _{CEO}	18	volts	
Emitter to Base		V _{EB0}	30	volts	
Collector to Base	2N3854, 5, 6, 2N3854A, 5A, 6A	V _{CB0}	4	volts	
		V _{CEO}	18	volts	
		V _{CB0}	30	volts	
Current					
Collector (Steady State) †		I _C	100	mA	
Dissipation					
Total Power (Free air at 25°C) ‡		P _T	200	mW	
Total Power (Free air at 55°C) ‡		P _T	120	mW	
Temperature					
Storage		T _S	-30 to 150	°C	
Operating		T _J	100	°C	
Lead soldering, 1/16" ± 1/32" from case for 10 sec. max.		T _L	260	°C	

- FM-IF STAGE GAIN OF 25
- 30 dB GAIN AT 4.5 MHz
- FM-RF GAIN OF 15 dB
- TV VIDEO IF GAIN OF 24

NOTE 1: Lead diameter is controlled in the zone between .070 and .750 from the seating plane. Between .750 and end of lead a max. of .021 is held.

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3 LEADS
.017 ± .002
± .001
(NOTE 1)



†Determined from power limitations due to saturation voltage at this point.
‡Derate 2.67 mW/°C increase in ambient temperature above 25°C.

electrical characteristics: (25°C) (unless otherwise specified)

Static Characteristics

	Min.	Typ.	Max.	Uni.
Collector Cutoff Current (V _{CE} = 18V) (V _{CB} = 18V, T _A = 100°C)	I _{CBO}		0.5	μA
	I _{CBO}		15	μA
Forward Current Transfer Ratio (V _{CE} = 4.5V, I _C = 2mA)				
2N3854, 2N3854A	h _{FE}	35	70	
2N3855, 2N3855A	h _{FE}	60	120	
2N3856, 2N3856A	h _{FE}	100	200	
Emitter-Base Breakdown Voltage (I _B = 500μA)	BV _{EB0}	4		volt
Collector-Emitter Breakdown Voltage (I _C = 1mA)				
2N3854, 2N3855, 2N3856	BV _{CEO}	18	70	volt
2N3854A, 2N3855A, 2N3856A	BV _{CEO}	30	70	volt
Collector-Base Breakdown Voltage (I _C = 0.1mA)				
2N3854, 2N3855, 2N3856	BV _{CB0}	18		volt
2N3854A, 2N3855A, 2N3856A	BV _{CB0}	30		volt
Collector Saturation Voltage (I _C = 10mA, I _B = 1mA)	V _{CE(SAT)}		0.200	volt

Dynamic Characteristics

Gain Bandwidth Product (V _{CE} = 10V, I _C = 5mA)				
2N3854, 2N3854A	f _T	100	350	MHz
2N3855, 2N3855A	f _T	130	450	MHz
2N3856, 2N3856A	f _T	140	500	MHz
Collector-Base Time Constant (V _{CB} = 10V, I _C = 5mA)				
2N3854, 2N3854A	r _b ' C _c		25	psec
2N3855, 2N3855A	r _b ' C _c		35	psec
2N3856, 2N3856A	r _b ' C _c		40	psec
Output Capacitance (V _{CB} = 10V, I _B = 0, f = 1 MHz)	C _{ob}		3.5	pF
Input Capacitance (V _{CB} = 0.5V, I _B = 0, f = 1 MHz)	C _{ib}		10	pF
Case Capacitance			0.66	pF