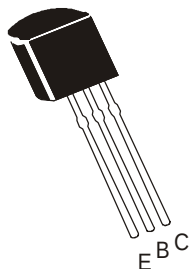


PNP SILICON PLANAR EPITAXIAL TRANSISTORS



PN4354
PN4355
PN4356

TO-92
Plastic Package

General Purpose Amplifiers

DESCRIPTION	SYMBOL	4354	4355	4356	UNITS
Collector Emitter Voltage	V_{CEO}	60	60	80	V
Collector Base Voltage	V_{CBO}	60	60	80	V
Emitter Base Voltage	V_{EBO}		5		V
Collector Current - Continuous	I_C		500		mA
Power Dissipation@Ta=25°C	P_D		625		mW
Power Dissipation@ Tc=25°C	P_D		1.0		mW
Operating And Storage Junction Temperature Range	T_j, T_{stg}		-55 to +150		°C

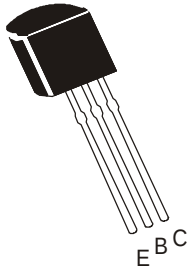
ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	4354	4355	4356	UNITS
Collector Emitter Voltage	$V_{CEO(sus)}$	$I_C=10mA, I_B=0$ (pulsed)	>60	>60	>80	V
Collector Base Voltage	V_{CBO}	$I_C=10\mu A, I_E=0$	>60	>60	>80	V
Emitter Base Voltage	V_{EBO}	$I_E=10\mu A, I_C=0$		>5		V
Collector-Cut off Current	I_{CBO}	$V_{CB}=50V, I_E = 0$ $V_{CB}=50V, I_E = 0,$ $T_a =75^\circ C$			<50	nA
Emitter Cut off Current	I_{EBO}	$V_{BE} =4V, I_C= 0$			<100	nA
DC Current Gain	$h_{FE} *$	$V_{CE}=10V, I_C=100\mu A$ $V_{CE}=10V, I_C=1mA$ $V_{CE}=10V, I_C=10mA$ $V_{CE}=10V, I_C=100mA$ $V_{CE}=10V, I_C=500mA$	>25 >40 50-500 >40 >30	>60 >75 100-400 >75 >75	>25 >40 50-250 >40 >30	
Common Emitter Small Signal Current Gain	$ h_{fe} $	$I_C=50mA, V_{CE}=10V$ $f=100MHz$	1.0-5.0	1.0 - 1.5	1.0 - 5.0	
Collector Emitter Sat Voltage	$V_{CE(sat)}$	$I_C=150mA, I_B=15mA$ $I_C=500mA, I_B=50mA$ PN4355 $I_C=1A, I_B=100mA$	<0.15 <0.5	<0.15 <0.5 <1.0	<0.15 <0.5	V V V

PNP SILICON PLANAR EPITAXIAL TRANSISTORS

PN4354
PN4355
PN4356

TO-92
Plastic Package



ELECTRICAL CHARACTERISTICS (Ta=25°C Unless Otherwise Specified)

DESCRIPTION	SYMBOL	TEST CONDITION	4354	4355	4356	UNITS
Base Emitter Sat Voltage	V _{BE(sat)} *	I _C =150mA, I _B =15mA	<0.9	<0.9	<0.9	V
		I _C =500mA, I _B =50mA	<1.1	<1.1	<1.1	V
		I _C =1A, I _B =100mA		<1.2		V
PN4355						
Base Emitter On Voltage	V _{BE(on)} *	I _C =500mA, V _{CE} =0.5V	<1.1	<1.1	<1.1	V
		I _C =1A, V _{CE} =1V		<1.2		V
PN4355						

SMALL-SIGNAL	SYMBOL	TEST CONDITION	4354	4355	4356	UNITS
DYNAMIC CHARACTERISTICS						
Collector to Base Capacitance	C_{cb}	$I_E=0, V_{CB}=10V,$ $f=1.0MHz$	<30	<30	<30	pF
		$I_C=0, V_{EB}=0.5V,$ $f=1.0MHz$	<110	<110	<110	pF
Emitter to Base Capacitance	C_{eb}	$I_C=0, V_{EB}=0.5V,$ $f=1.0MHz$	<110	<110	<110	pF
Turn On Time	t_{on}	$I_C=500mA, I_{B1}=50mA,$ $V_{CC}=30V$	<100	<100	<100	pF
		$I_C=500mA, I_{B1}=I_{B2}=50mA,$ $V_{CC}=30V$	<400	<400	<400	ns
Turn off Time	t_{off}	$I_C=500mA, I_{B1}=I_{B2}=50mA,$ $V_{CC}=30V$	<400	<400	<400	ns
Noise Figure	NF	$V_{CE}=10V, I_C=100uA$	<3.0	<3.0	<3.0	dB
		$R_S=1K\Omega, f=1kHz,$				
		$B_W=1Hz$				

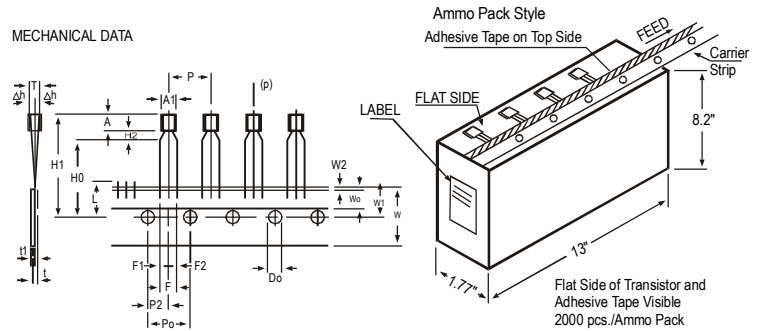
*Pulse Condition: = 300us, Duty Cycle = 1%.

PN4354
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Plastic Package

TO-92 Plastic Package

TO-92 Transistors on Tape and Ammo Pack

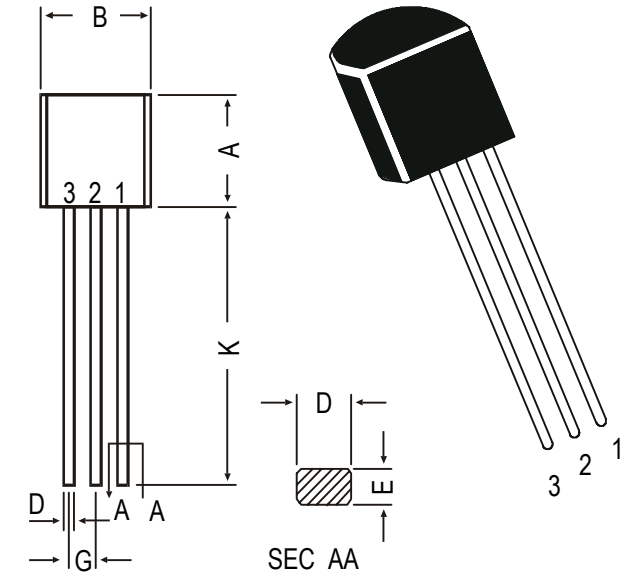
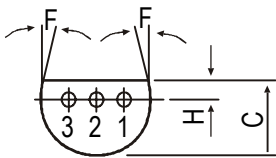


All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION				REMARKS
		MIN.	NOM.	MAX.	TOL.	
BODY WIDTH	A1	4.0		4.8		CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH TO BE MEASURED AT BOTTOM OF CLINCH
BODY HEIGHT	A	4.8		5.2		
BODY THICKNESS	T	3.9		4.2		
PITCH OF COMPONENT	P		12.7		±1	
FEED HOLE PITCH	Po		12.7		±0.3	
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	AT TOP OF BODY
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	Δh		0	1		
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	Wo		6		±0.2	
HOLE POSITION	W1		9		+0.7 -0.5	t1 0.3 - 0.6
HOLD-DOWN TAPE POSITION	W2		0.5		±0.2	
LEAD WIRE CLINCH HEIGHT	Ho		16		±0.5	
COMPONENT HEIGHT	H1			23.25		
LENGTH OF SNIPPED LEADS	L			11.0		
FEED HOLE DIAMETER	Do		4		±0.2	
TOTAL TAPE THICKNESS	t			1.2		
LEAD - TO - LEAD DISTANCE F1,	F2		2.54		+0.4 -0.1	
CLINCH HEIGHT	H2			3		
PULL - OUT FORCE	(P)	6N				

NOTES

1. MAXIMUM ALIGNMENT DEVIATION BETWEEN LEADS NOT TO BE GREATER THAN 0.2 mm.
2. MAXIMUM NON-CUMULATIVE VARIATION BETWEEN TAPE FEED HOLES SHALL NOT EXCEED 1 mm IN 20 PITCHES.
3. HOLDDOWN TAPE NOT TO EXCEED BEYOND THE EDGE(S) OF CARRIER TAPE AND THERE SHALL BE NO EXPOSURE OF ADHESIVE.
4. NO MORE THAN 3 CONSECUTIVE MISSING COMPONENTS ARE PERMITTED.
5. A TAPE TRAILER, HAVING AT LEAST THREE FEED HOLES ARE REQUIRED AFTER THE LAST COMPONENT.
6. SPLICES SHALL NOT INTERFERE WITH THE SPROCKET FEED HOLES.



PIN CONFIGURATION

1. COLLECTOR
2. BASE
3. EMITTER

All dimensions in mm.

DIM	MIN.	MAX.
A	4.32	5.33
B	4.45	5.20
C	3.18	4.19
D	0.41	0.55
E	0.35	0.50
F	5 DEG	
G	1.14	1.40
H	1.14	1.53
K	12.70	—

Packing Detail

PACKAGE	STANDARD PACK		INNER CARTON BOX		OUTER CARTON BOX		
	Details	Net Weight/Qty	Size	Qty	Size	Qty	Gr Wt
TO-92 Bulk	1K/polybag	200 gm/1K pcs	3" x 7.5" x 7.5"	5.0K	17" x 15" x 13.5"	80.0K	23 kgs
TO-92 T&A	2K/ammo box	645 gm/2K pcs	12.5" x 8" x 1.8"	2.0K	17" x 15" x 13.5"	32.0K	12.5 kgs