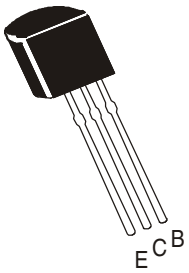
PNP EPITAXIAL PLANAR SILICON TRANSISTOR

CSB1116
CSB1116A
TO-92
BCE



Audio Frequency Power Amplifier And Medium Speed Switching
Complementary CSD1616/1616A

ABSOLUTE MAXIMUM RATINGS(Ta=25 deg C)

DESCRIPTION	SYMBOL	CSB1116	CSB1116A	UNIT
Collector -Base Voltage	VCBO	60	80	V
Collector -Emitter Voltage	VCEO	50	60	V
Emitter Base Voltage	VEBO	6		V
Collector Current DC	IC	1		A
Collector Current Pulse	IC*	2		A
Collector Dissipation	PC	0.75		W
Operating And Storage Junction Temperature Range	Tj, Tstg	55 to +150		deg C

*PW=10ms, duty Cycle=50%

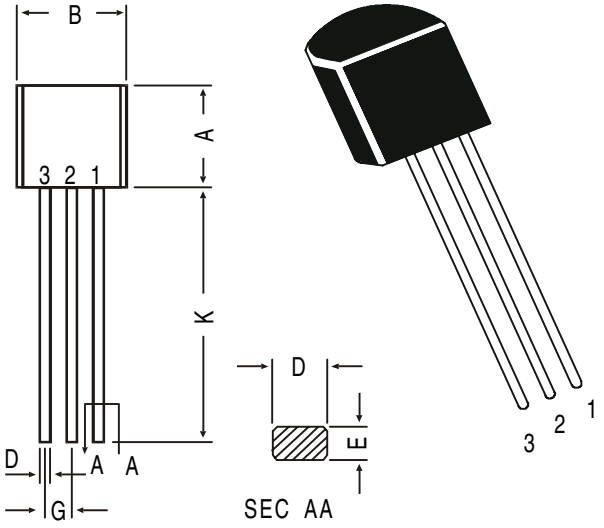
ELECTRICAL CHARACTERISTICS (Ta=25 deg C Unless Specified)

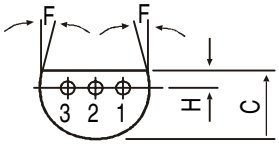
DESCRIPTION		SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Collector Cut off Current		ICBO	VCB=60V, IE=0	-	-	100	nA
Emitter Cut off Current		IEBO	VEB=6V, IC=0	-	-	100	nA
DC Current Gain	CSB1116	hFE(1) *	IC=100mA, VCE=2V	135		600	
	CSB1116A			135		400	
		hFE(2) *	IC=1A, VCE=2V	81	-	-	
Base Emitter On Voltage		VBE(on)*	VCE=2V,IC=50mA	0.60	-	0.70	V
Collector Emitter Saturation Voltage		VCE(Sat) *	IC=1A, IB=50mA	-	-	0.35	V
Base Emitter Saturation Voltage		VBE(Sat) *	IC=1A, IB=50mA	-	-	1.2	V
Dynamic Characteristics							
Transition Frequency		ft	VCE=2V,IC=100mA,	70	-	-	MHz
Collector Output Capacitance		Cob	VCB=10V, IE=0 f=1MHz	-	25	-	pF
SWITCHING TIMES							
Turn on time		ton	VCC=10V,IC=100mA	-	0.07	-	us
Storage time		tstg	IB1=IB2=10mA,	-	0.7	-	us
Fall time		tf	VBE(off)2=3V	-	0.07	-	us

hFE(1) CLASSIFICATION CSB1116 **Y: 135-270** **G: 200-400** **L: 300-600**

***Pulse Test : PW=350us, Duty Cycle=2% Pulsed**

TO-92 Plastic Package





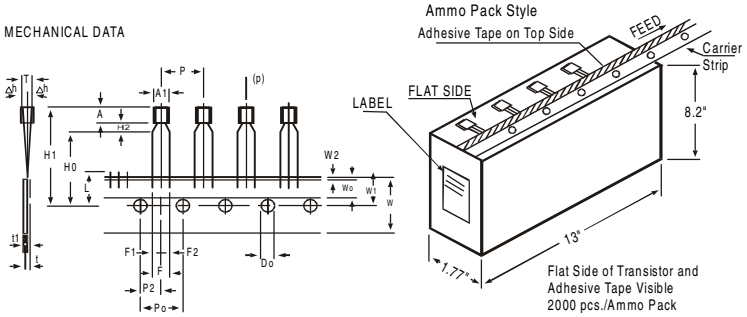
PIN CONFIGURATION
1. BASE
2. COLLECTOR
3. EMITTER

All diminsions 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	—

TO-92 Transistors on Tape and Ammo Pack

MECHANICAL DATA



All dimensions in mm unless specified otherwise

ITEM	SYMBOL	SPECIFICATION MIN.	NOM.	MAX.	TOL.	REMARKS
BODY WIDTH	A1	4.0		4.8		
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	CUMULATIVE PITCH ERROR 1.0 mm/20 PITCH
FEED HOLE CENTRE TO COMPONENT CENTRE	P2		6.35		±0.4	TO BE MEASURED AT BOTTOM OF CLINCH
DISTANCE BETWEEN OUTER LEADS	F		5.08		+0.6 -0.2	
COMPONENT ALIGNMENT	△h		0	1		AT TOP OF BODY
TAPE WIDTH	W		18		±0.5	
HOLD-DOWN TAPE WIDTH	Wo		6		±0.2	
HOLE POSITION	W1		9		+0.7 -0.5	
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		t1 0.3 - 0.6
LEAD - TO - LEAD DISTANCEF1,	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.

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

Customer Notes

Disclaimer

The product information and the selection guides facilitate selection of the CDIL's Discrete Semiconductor Device(s) best suited for application in your product(s) as per your requirement. It is recommended that you completely review our Data Sheet(s) so as to confirm that the Device(s) meet functionality parameters for your application. The information furnished on the CDIL Web Site/CD are believed to be accurate and reliable. CDIL however, does not assume responsibility for inaccuracies or incomplete information. Furthermore, CDIL does not assume liability whatsoever, arising out of the application or use of any CDIL product; neither does it convey any license under its patent rights nor rights of others. These products are not designed for use in life saving/support appliances or systems. CDIL customers selling these products (either as individual Discrete Semiconductor Devices or incorporated in their end products), in any life saving/support appliances or systems or applications do so at their own risk and CDIL will not be responsible for any damages resulting from such sale(s).

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