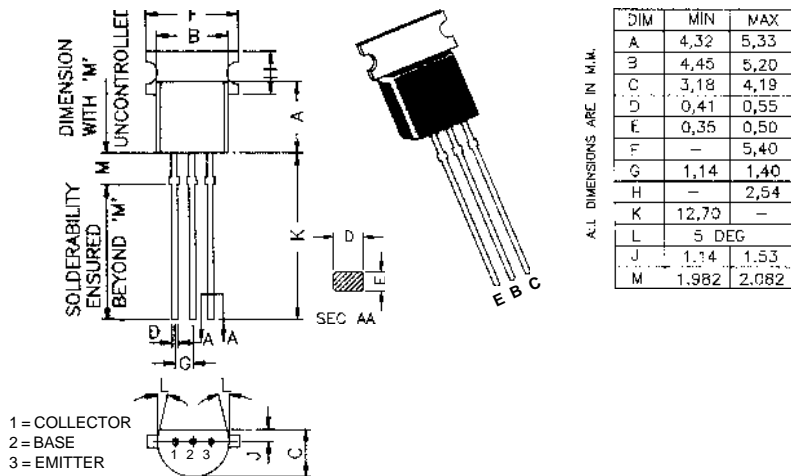


**TO-237 Plastic Package**

**CTN635, CTN637, CTN639  
CTN636, CTN638, CTN640**

*CTN635, 637, 639 NPN SILICON PLANAR EPITAXIAL TRANSISTORS  
CTN636, 638, 640 PNP SILICON PLANAR EPITAXIAL TRANSISTORS  
Complementary Transistors in Plastic Package for Driver Stage of Audio Amplifier.*



A.L. DIMENSIONS ARE IN M.M.

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	-	5,40
G	1,14	1,40
H	-	2,54
K	12,70	-
L	5 DEG	
J	1,14	1,53
M	1,982	2,082

**ABSOLUTE MAXIMUM RATINGS**

Ratings	Symbol	CTN635	CTN637	CTN639	Units
		CTN636	CTN638	CTN640	
Collector-Base Voltage	$V_{CBO}$	45	60	100	V
Collector-Emitter Voltage	$V_{CEO}$	45	60	80	V
Emitter-Base Voltage	$V_{EBO}$	-	5	-	V
Collector Current - Continuous	$I_C$	-	1	-	A
Peak	$I_{CM}$	-	1.5	-	A
Base Current - Continuous	$I_B$	-	100	-	mA
Peak	$I_{BM}$	-	200	-	mA
Power Dissipation @ $T_a=25^\circ C$	$P_D$	-	750	-	mW
Derate above $25^\circ C$	-	-	6	-	mW/°C
Power Dissipation @ $T_c=25^\circ C$	$P_D$	-	2.5	-	W
Derate above $25^\circ C$	-	-	20	-	mW/°C
Operating And Storage Junction Temperature Range	$T_j, T_{stg}$	-55 to +150			°C

**CTN635, CTN637, CTN639**  
**CTN636, CTN638, CTN640**

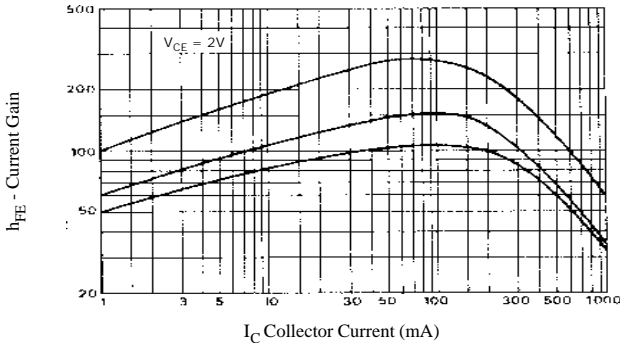
**ELECTRICAL CHARACTERISTICS** ( $T_a = 25^\circ\text{C}$  unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector-Emitter Voltage	$BV_{CEO}$	45	-	-	V
$I_C=10\text{mA}, I_B=0$		60	-	-	V
		80	-	-	V
Collector-Base Voltage	$BV_{CBO}$	45	-	-	V
$I_C=100\mu\text{A}, I_E=0$		60	-	-	V
		100	-	-	V
Emitter-Base Voltage	$BV_{EBO}$	5	-	-	V
$I_E=10\mu\text{A}, I_C=0$					
Collector Cutoff Current	$I_{CBO}$	-	-	100	nA
$V_{CB}=30\text{V}, I_E=0$				10	$\mu\text{A}$
$V_{CB}=30\text{V}, I_E=0, T_a=125^\circ\text{C}$					
Base Emitter On Voltage	$V_{BE(on)}^*$	-	-	1.0	V
$I_C=500\text{mA}, V_{CE}=2\text{V}$					
Collector-Emitter (Sat) Voltage	$V_{CE(sat)}^*$	-	-	0.5	V
$I_C=500\text{mA}, I_B=50\text{mA}$					
D.C. Current Gain	$h_{FE}$	25	-	-	
$I_C=5\text{mA}, V_{CE}=2\text{V}$		40	-	160	
$I_C=150\text{mA}, V_{CE}=2\text{V}^*$		40	-	160	
		25	-	-	
$I_C=500\text{mA}, V_{CE}=2\text{V}^*$					
<b>DYNAMIC CHARACTERISTICS</b>					
Input Capacitance	$C_{ib}$	-	50	-	pF
$V_{BE}=0.5\text{V}, I_C=0,$	NPN				
$f=1\text{MHz}$	PNP	-	110	-	pF
Input Capacitance	$C_{ob}$	-	7	-	pF
$V_{CB}=10\text{V}, I_C=0,$	NPN				
$f=1\text{MHz}$	PNP	-	9	-	pF
Transition Frequency	$f_T$	-	130	-	MHz
$I_C=10\text{mA}, V_{CE}=5\text{V},$	NPN				
$f=35\text{MHz}$	PNP	-	50	-	MHz

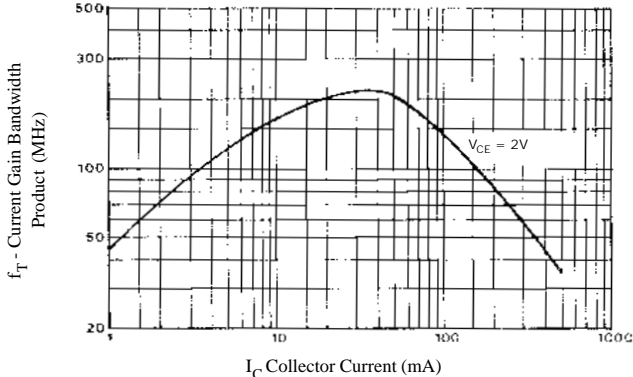
\* Pulse Test: Pulse width  $\leq 300\mu\text{s}$ , Duty cycle  $\leq 2\%$ .

CTN635, CTN637, CTN639  
 CTN636, CTN638, CTN640

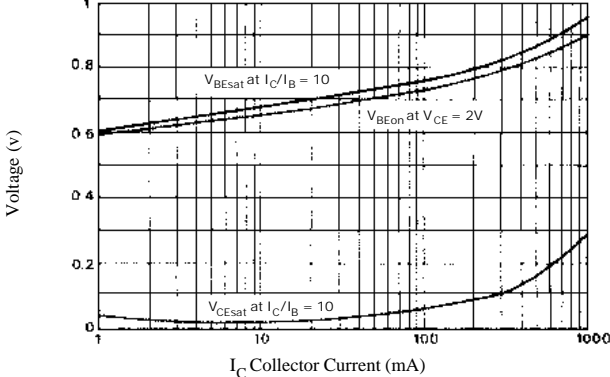
DC Current Gain



Current Gain Bandwidth Product



Saturation and On Voltages



## Disclaimer

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