



Silicon NPN epitaxial planar Darlington transistor chip

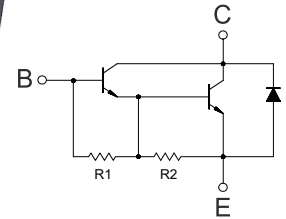
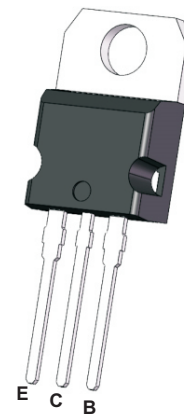
TO-220-3L(*Prefix :C)

Features

- Power adjustment tube
- Audio power amplifier
- High output power
- Ultra high DC current gain

Mechanical data

- Case:TO-220-3L
- Approx. Weight:2.04g (0.072oz)
- RoHS compliant
- Case Material: "Green" molding compound, UL flammability classification 94V-0, "Halogen-free".



Maximum Ratings (Ta=25°C unless otherwise noted)

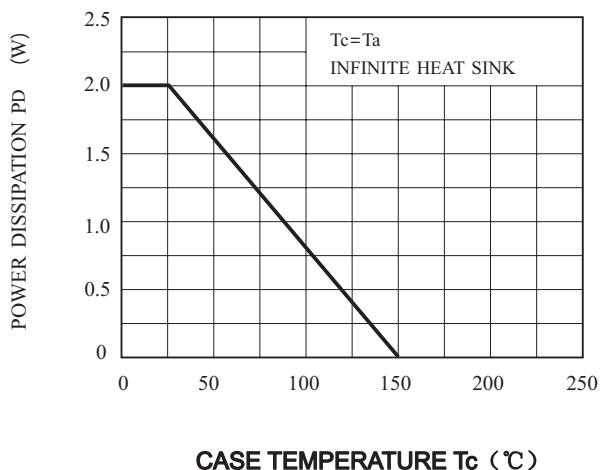
Parameter	Symbols	Ratings	Units
Collector-Base Voltage	V_{CBO}	150	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	15	V
Collector Current -Continuous	I_C	5	A
Collector Power Dissipation	P_C	2	W
Thermal resistance, junction – ambient	R_{thJC}	2.2	°C/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150	°C

Electrical Characteristics (Ta=25°C unless otherwise noted)

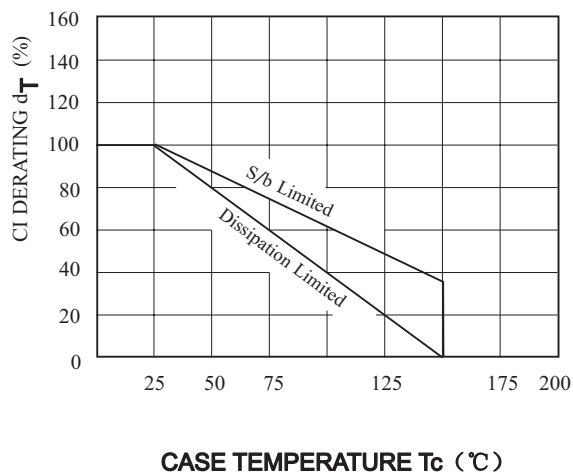
Parameter	Symbols	Test conditions	Min	Typ	Max	Units
Collector-base breakdown voltage	V_{CBO}	$I_C=0.1mA, I_E=0$	150			V
Collector-emitter breakdown voltage	V_{CEO}	$I_C=10mA, I_B=0$	100			V
Emitter-base breakdown voltage	V_{EBO}	$I_E=3mA, I_C=0$	15			V
Collector-base cut-off current	I_{CBO}	$V_{CE}=120V, I_B=0$			1	uA
Collector-base cut-off current	I_{CEO}	$V_{CE}=120V, V_{EB}=0$			1	uA
Emitter-base cut-off current	I_{EBO}	$V_{EB}=7V, I_C=0$			3	mA
DC current gain	h_{FE}	$V_{CE}=5V, I_C=2A$	2000		15000	
Collector-emitter saturation voltage	$V_{CE(SAT)}$	$I_C=3A, I_B=12mA$			1.8	V
Transition frequency	f_T	$V_{CE}=10V, I_C=1A, f=1kHz$		30		MHz
Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=0.1MHz$			200	pF



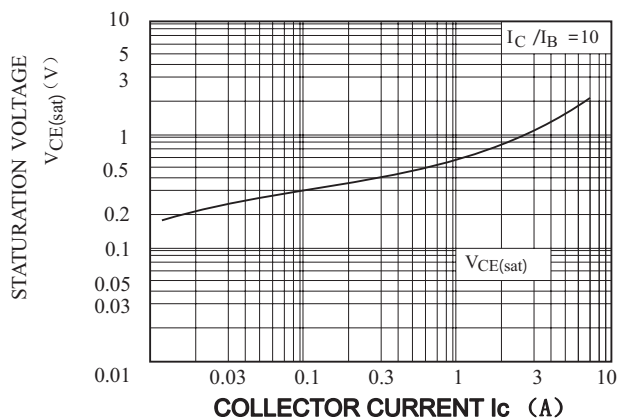
Power Dissipation vs. Case Temperature



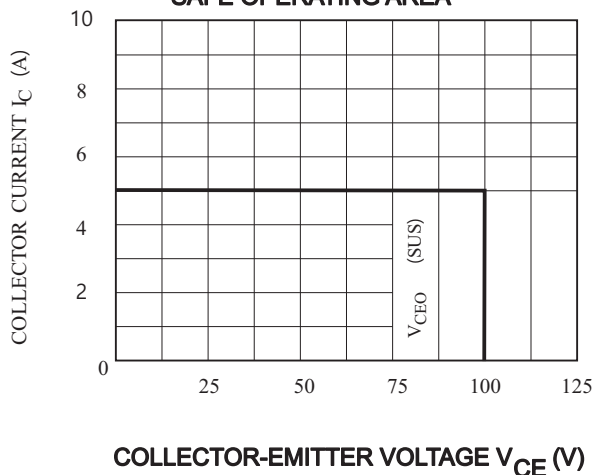
Dr-Tc



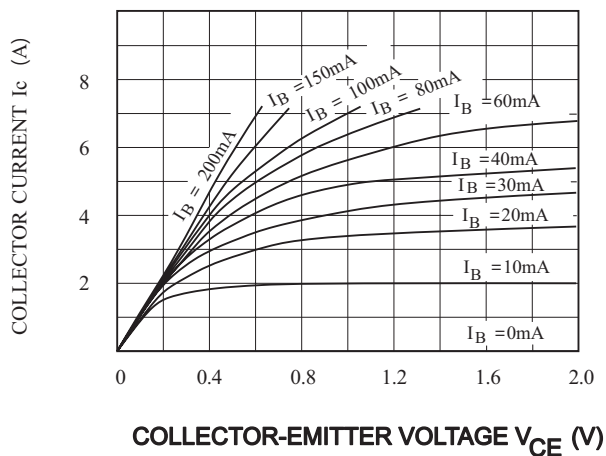
VCE(sat)-IC



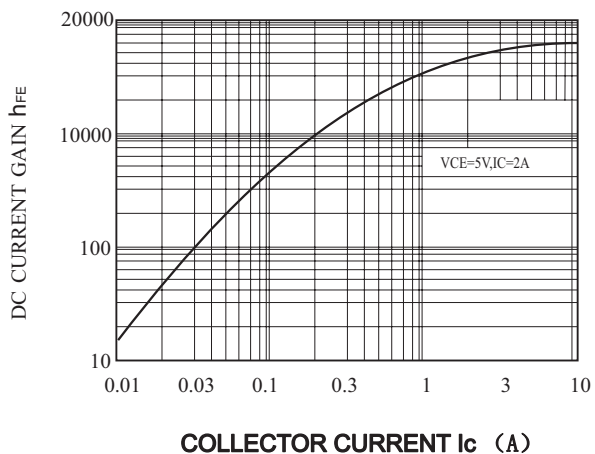
REVERSE BIAS SAFE OPERATING AREA



Ic - VCE



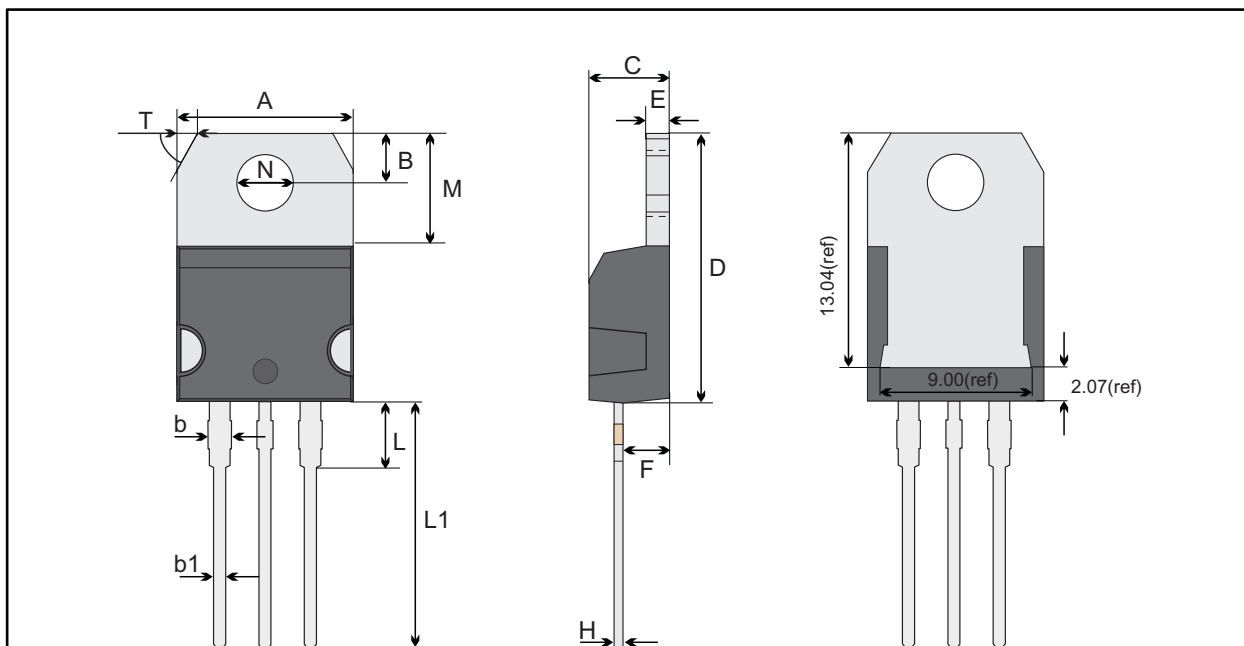
hFE-Ic





Package Outline
Through Hole Package ; 3 leads

TO-220-3L



TO-220-3L mechanical data

UNIT		A	B	b	b1	C	D	E	F	G	H	L	L1	M	N	T
mm	max	10.28	2.84	1.67	0.9	4.65	15.54	1.37	2.79	2.64	0.6	3.88	13.13	6.39	3.82 typ.	1.19 58° ref.
	typ	10.18	2.74	1.47	0.8	4.45	15.34	1.27	2.59	2.54	0.5	3.68	12.93	6.19		
	min	10.08	2.64	1.27	0.7	4.25	15.14	1.17	2.39	2.44	0.4	3.48	12.73	5.99		
mil	max	405	112	66	35	183	612	54	110	104	24	153	517	252	150 typ.	47 58° ref.
	typ	401	108	58	31	175	604	50	102	100	20	145	509	244		
	min	397	104	50	28	167	596	46	94	92	16	137	501	236		

Marking

Type number	Marking code
CTIP122	CTIP122



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