

TO-92 Plastic-Encapsulate Transistors

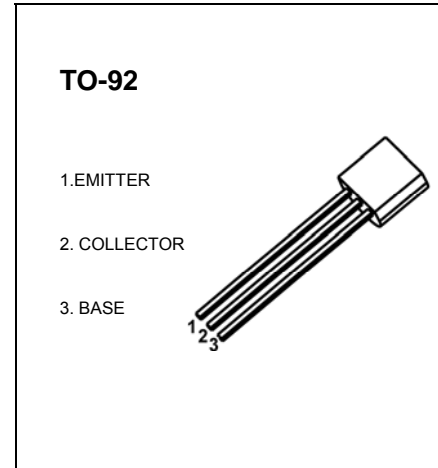
D965 TRANSISTOR (NPN)

FEATURES

- Audio Amplifier
- Flash Unit of Camera
- Switching Circuit

MAXIMUM RATINGS (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CB0}	Collector-Base Voltage	42	V
V _{CEO}	Collector-Emitter Voltage	22	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current -Continuous	5	A
P _C	Collector Power Dissipation	750	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C



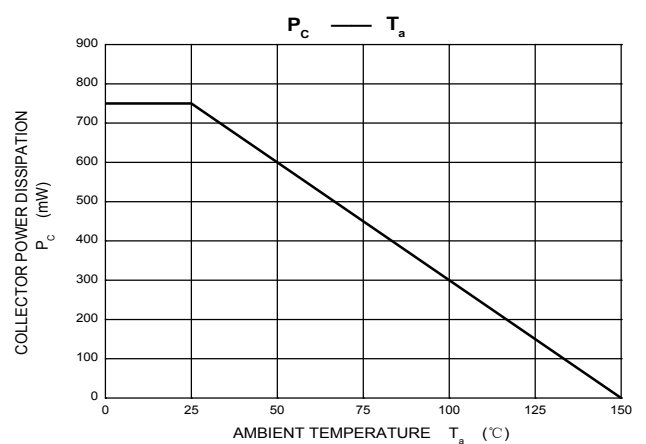
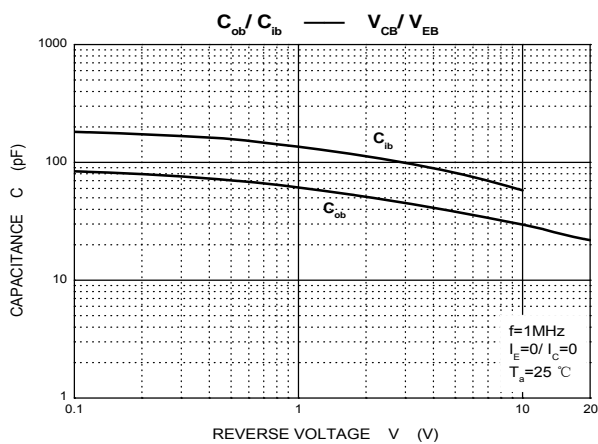
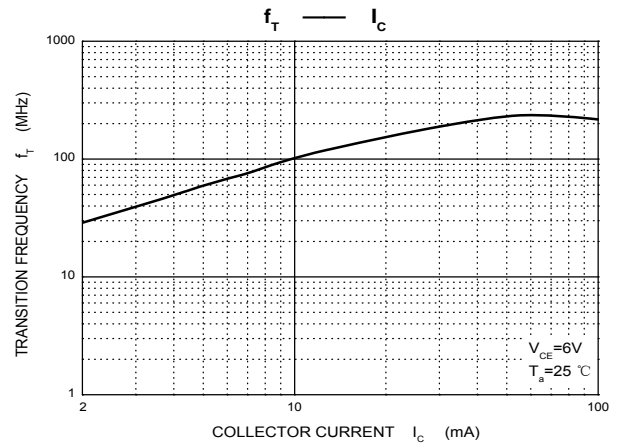
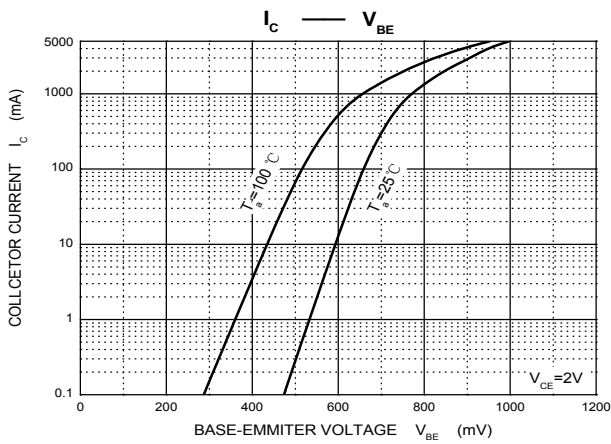
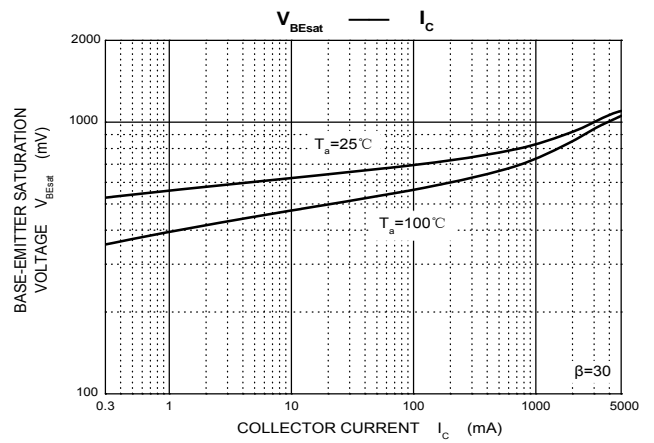
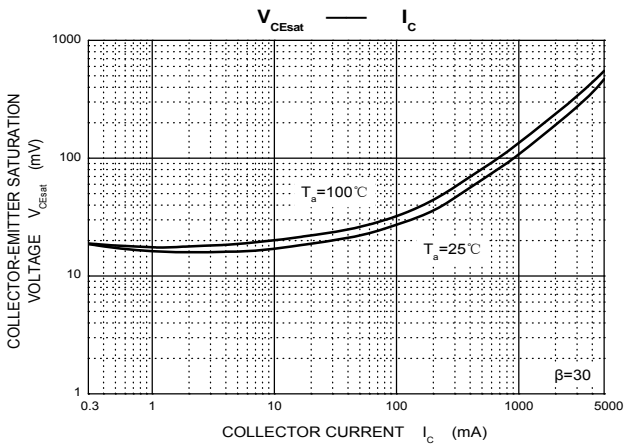
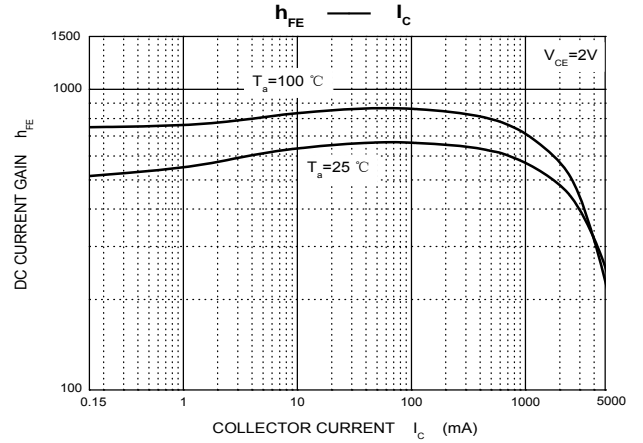
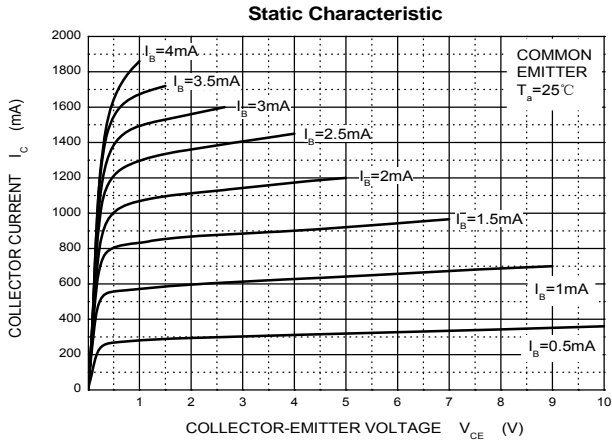
ELECTRICAL CHARACTERISTICS (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =0.1mA, I _E =0	42			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =1mA, I _B =0	22			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E = 10μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =30V, I _E =0			0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} =6V, I _C =0			0.1	μA
DC current gain	h _{FE(1)}	V _{CE} =2V, I _C = 0.15 mA	150			
	h _{FE(2)}	V _{CE} = 2V, I _C = 500 mA	340		2000	
	h _{FE(3)}	V _{CE} =2V, I _C = 2A	150			
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =3000mA, I _B =100 mA			0.35	V
Transition frequency	f _T	V _{CE} =6V, I _C =50mA, f=30MHz		150		MHz

CLASSIFICATION OF h_{FE(2)}

Rank	R	T	V
Range	340-600	560-950	900-2000

Typical Characteristics

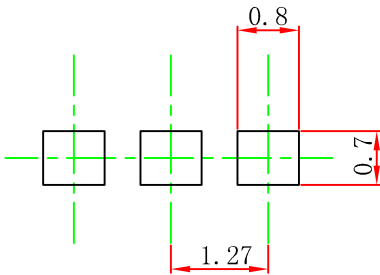


TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

TO-92 Suggested Pad Layout



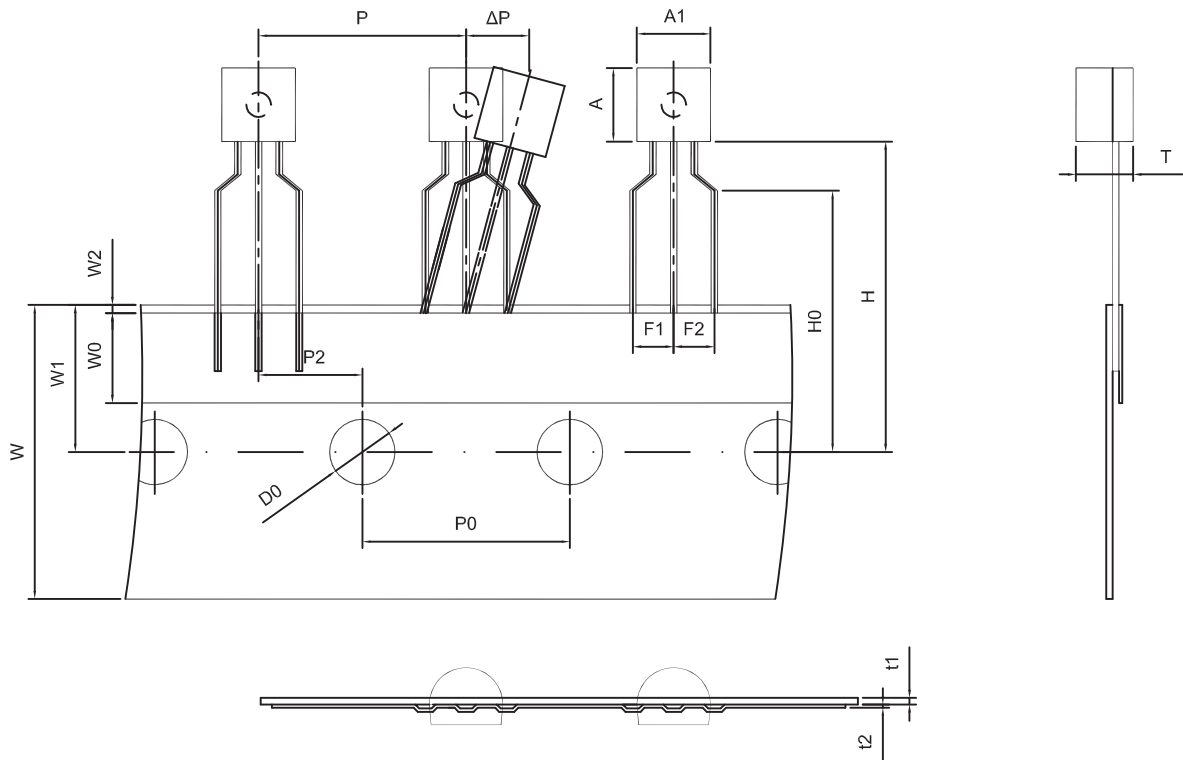
Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

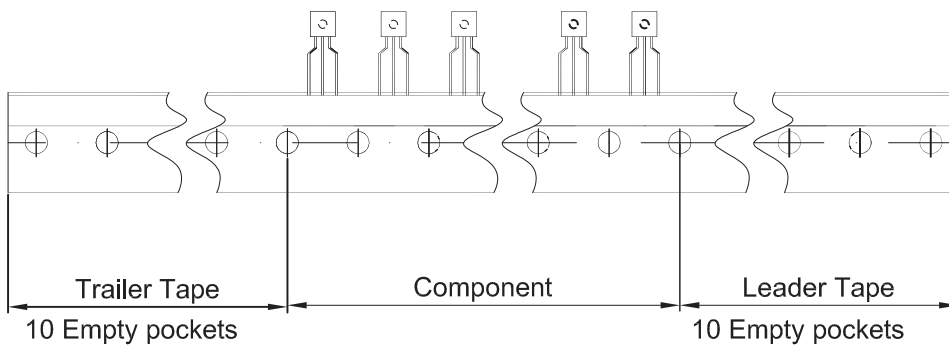
NOTICE

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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5±0.2	4.5±0.2	3.5±0.2	12.7±0.3	12.7±0.2	6.35±0.3	2.5±0.3	2.5±0.3	18.0+1.0/-0.5
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0±0.5	9.0±0.5	1.0 MAX.	19.0±1.0	16.0±0.5	4.0±0.5	0.4±0.05	0.2±0.05	0 ± 1.0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250