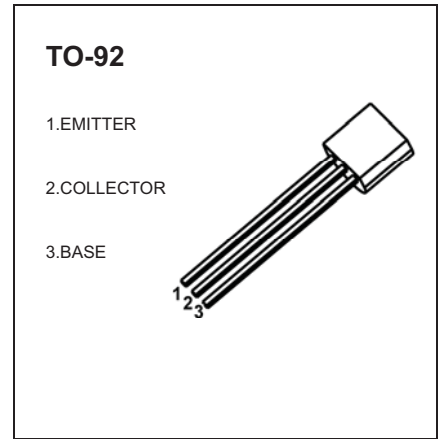


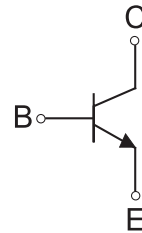
## D965 TRANSISTOR (NPN)

### FEATURES

- Audio Amplifier
- Flash Unit of Camera
- Switching Circuit



### Equivalent Circuit



### ORDERING INFORMATION

Part Number	Package	Packing Method	Pack Quantity
D965	TO-92	Bulk	1000pcs/Bag
D965-TA	TO-92	Tape	2000pcs/Box

### MAXIMUM RATINGS (T<sub>a</sub>=25°C unless otherwise noted)

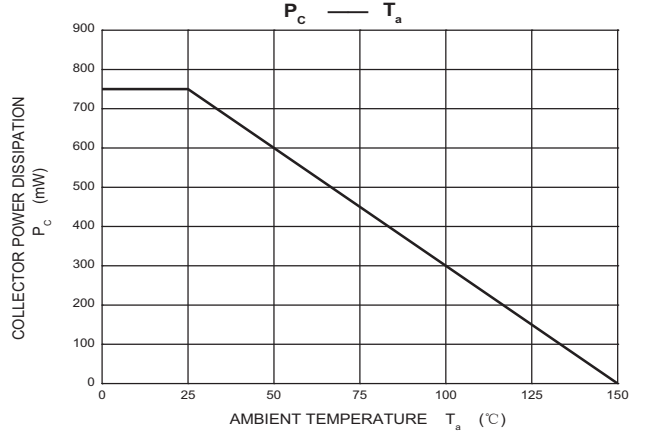
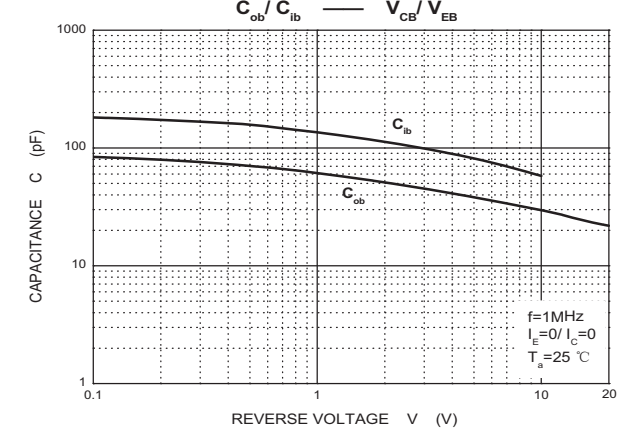
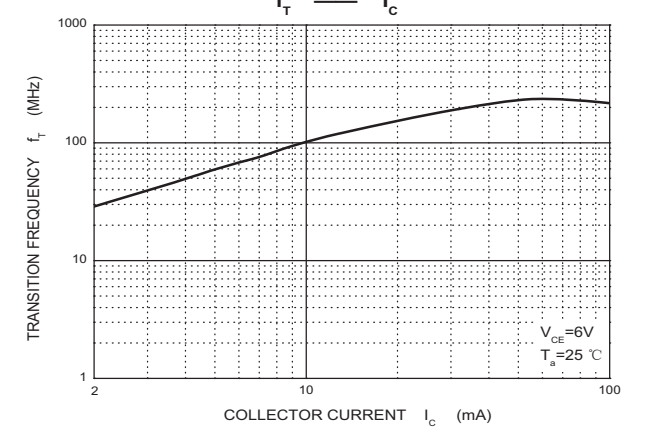
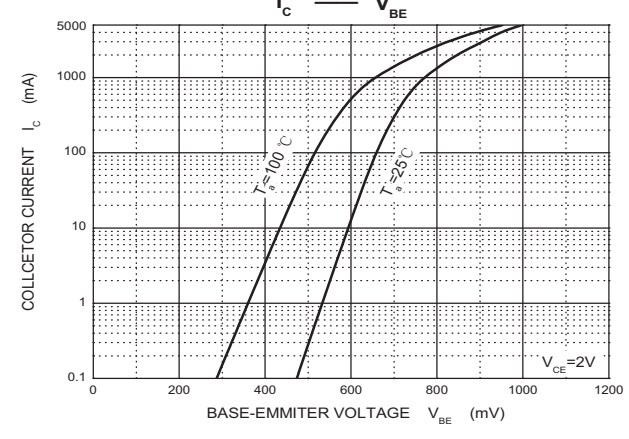
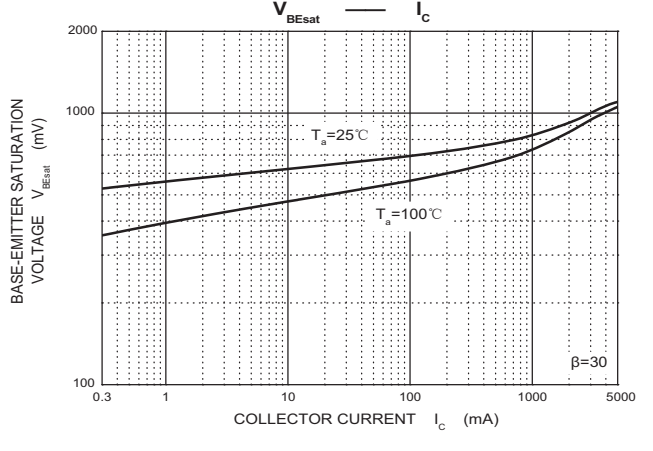
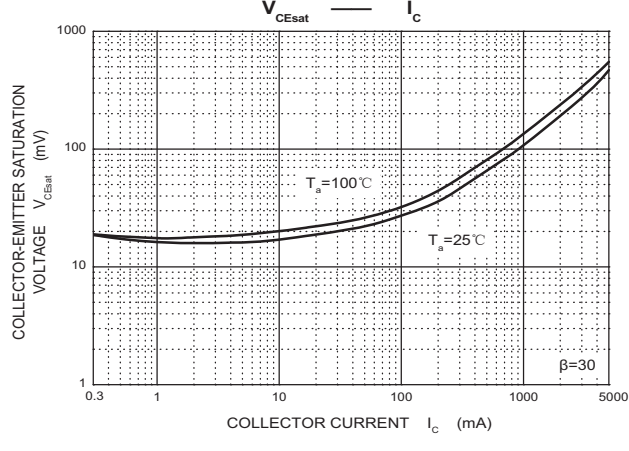
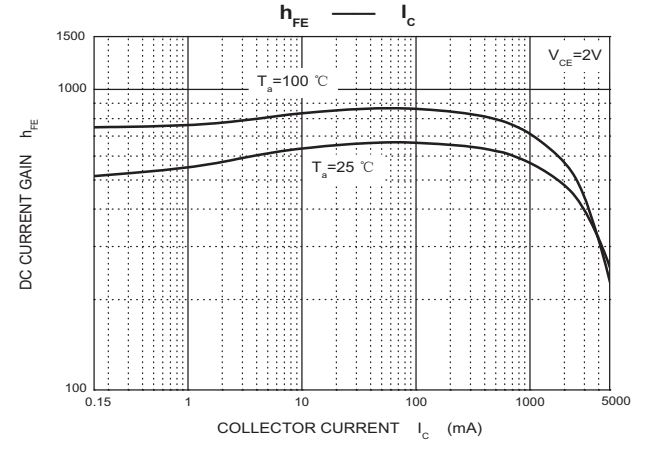
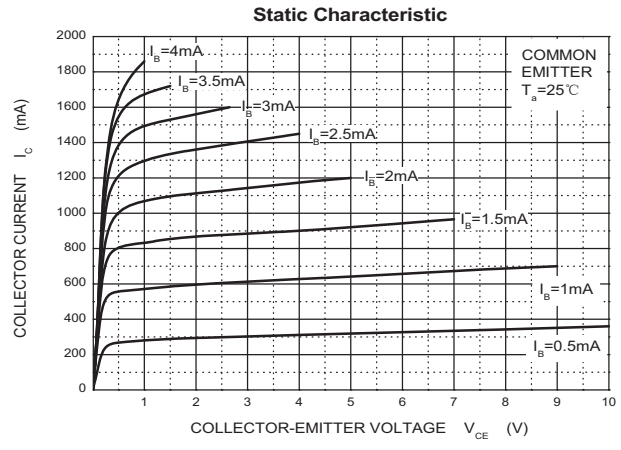
Symbol	Parameter	Value	Unit
V <sub>CB0</sub>	Collector-Base Voltage	42	V
V <sub>CEO</sub>	Collector-Emitter Voltage	22	V
V <sub>EBO</sub>	Emitter-Base Voltage	6	V
I <sub>c</sub>	Collector Current -Continuous	5	A
P <sub>D</sub>	Collector Power Dissipation	750	mW
R <sub>θJA</sub>	Thermal Resistance from Junction to Ambient	166.7	°C /W
T <sub>j</sub>	Junction Temperature	150	°C
T <sub>stg</sub>	Storage Temperature	-55~+150	°C

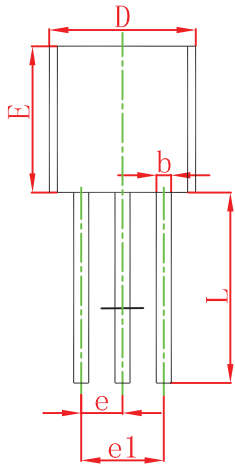
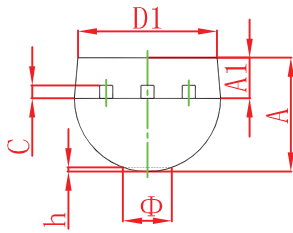
$T_a=25^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=0.1\text{mA}, I_E=0$	42			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}, I_B=0$	22			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}, I_C=0$	6			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=30\text{V}, I_E=0$			0.1	$\mu\text{A}$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=6\text{V}, I_C=0$			0.1	$\mu\text{A}$
DC current gain	$h_{FE(1)}$	$V_{CE}=2\text{V}, I_C=0.15\text{mA}$	150			
	$h_{FE(2)}$	$V_{CE}=2\text{V}, I_C=500\text{mA}$	340		2000	
	$h_{FE(3)}$	$V_{CE}=2\text{V}, I_C=2\text{A}$	150			
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=3000\text{mA}, I_B=100\text{mA}$			0.35	V
Transition frequency	$f_T$	$V_{CE}=6\text{V}, I_C=50\text{mA}, f=30\text{MHz}$		150		MHz

#### CLASSIFICATION OF $h_{FE(2)}$

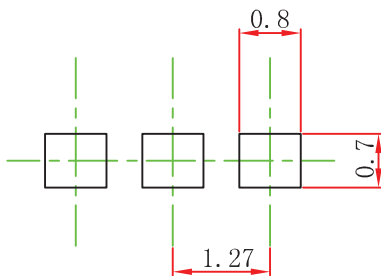
Rank	R	T	V
Range	340-600	560-950	900-2000





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.