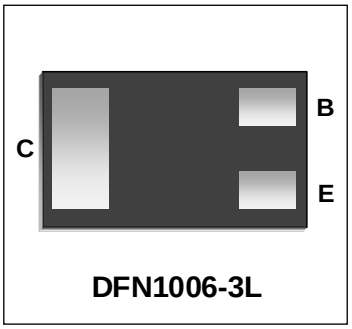
WT3904F

NPN Silicon Transistor

Features

- Complementary to WT3906F
- Single General-Purpose Switching Transistor

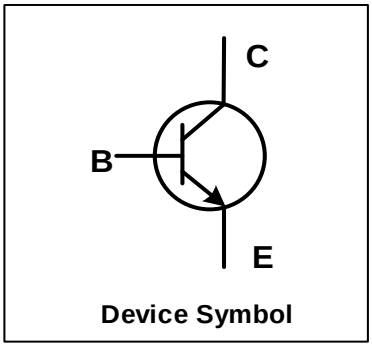


DFN1006-3L

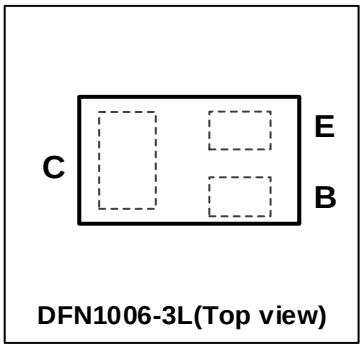
Mechanical Characteristics

- DFN1006-3L Package
- Marking : Making Code
- RoHS Compliant

Schematic & PIN Configuration



Device Symbol



DFN1006-3L(Top view)

Absolute Maximum Rating

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	60	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	200	mA
Collector Power Dissipation[1]	P_C	100	mW
Collector Power Dissipation[2]		590	
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55 ~ 150	°C
Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	1250	°C/W
Thermal Resistance from Junction to Ambient[2]		212	

Note:

1. Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

2.Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for collector1cm^2.

Electrical Characteristics (T_{amb}=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 10μA, I_E = 0	60	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	40	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 10μA, I_C = 0	6	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 60V, I_E = 0	-	-	100	nA
Collector Cut-off Current	I_{CEX}	V_{CE} = 30V, $V_{EB(off)}$ = 3V	-	-	50	nA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	-	-	100	nA
DC Current Gain	$h_{FE(1)}$	V_{CE} = 1V, I_C = 10mA	100	-	300	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	0.30	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 50mA, I_B = 5mA	-	-	0.95	V
Transition Frequency	f_T	V_{CE}= 20V, I_C= 10mA, f= 100MHz	300	-	-	MHz
Delay Time	t_d	V_{CC} = 3V, $V_{BE(off)}$ = 0.5V, I_C = 10mA, I_{B1} = 1mA	-	30	-	ns
Rise Time	t_r		-	30	-	ns
Storage Time	t_s	V_{CC} = 3V, I_C = 10mA, I_{B1} = I_{B2} = 1mA	-	160	-	ns
Fall Time	t_f		-	40	-	ns

Typical Characteristics

Figure 1. Static Characteristics

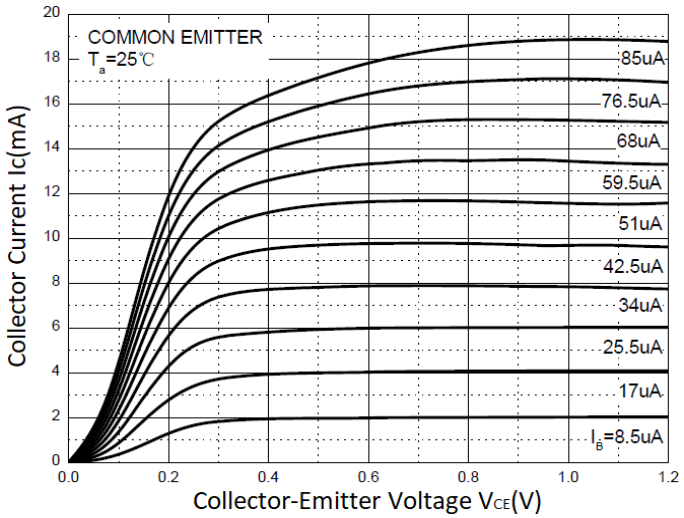


Figure 2. h_{FE} vs. I_C

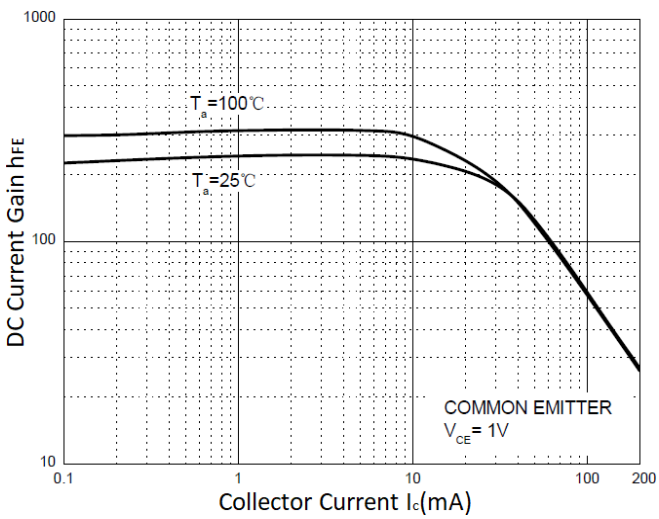


Figure 3. $V_{BE(sat)}$ vs. I_C

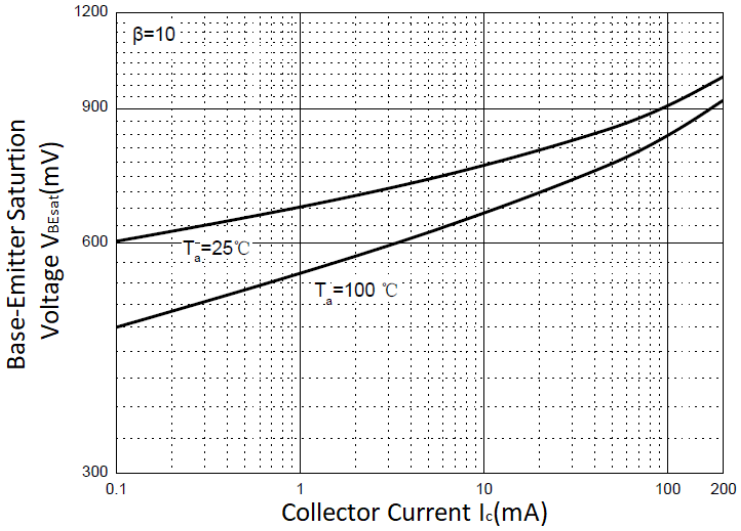


Figure 4. $V_{CE(sat)}$ vs. I_C

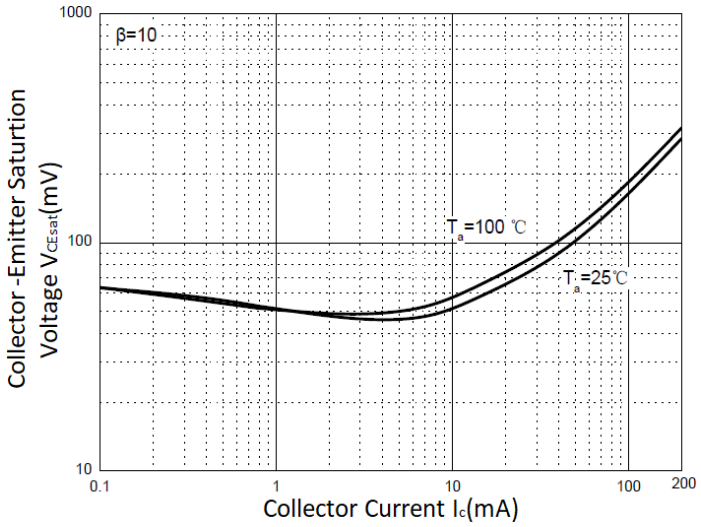


Figure 5. I_C vs. V_{BE}

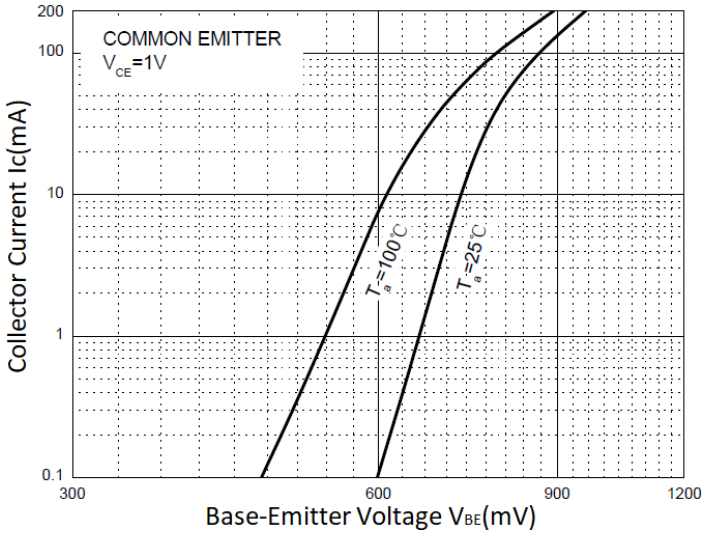


Figure 6. C_{ob} / C_{ib} vs. V_{CB} / V_{EB}

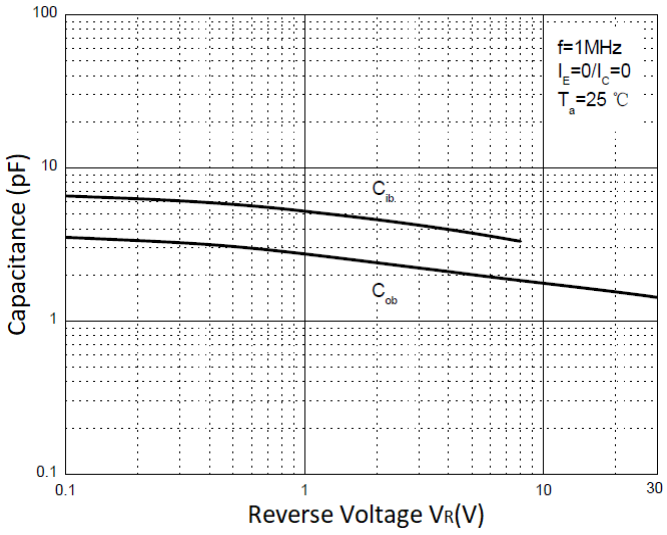


Figure 7. f_T vs. I_C

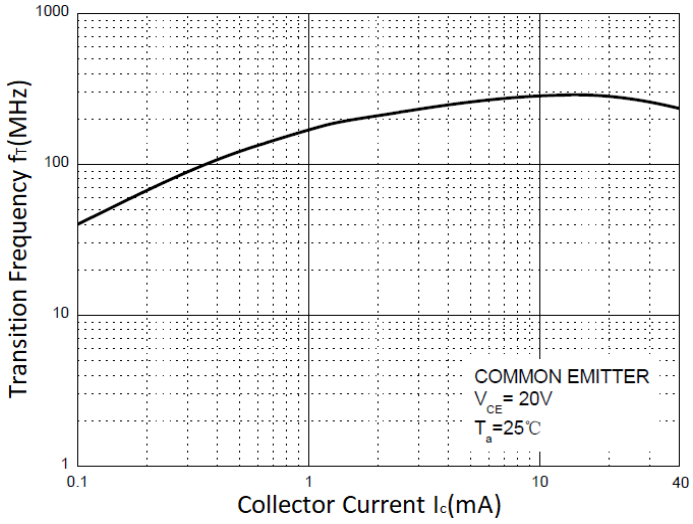
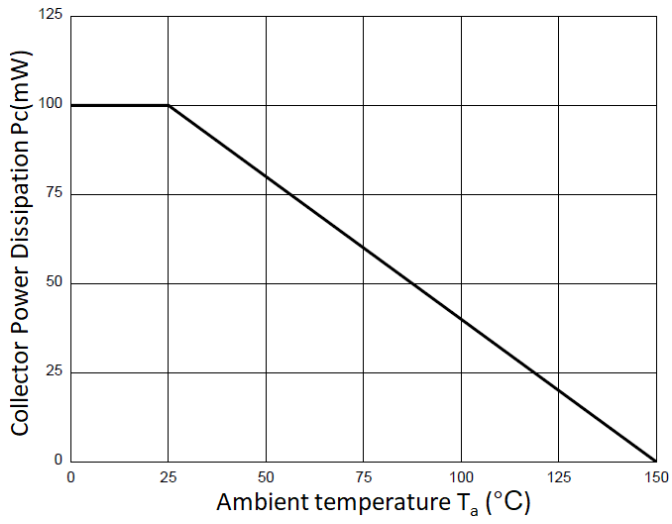
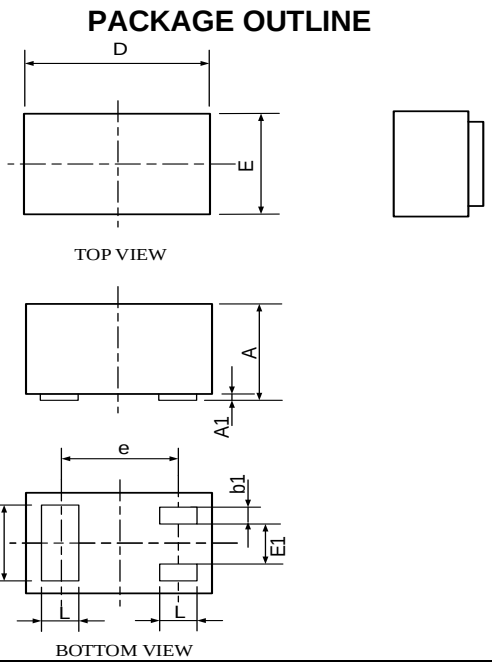


Figure 8. P_C vs. T_a



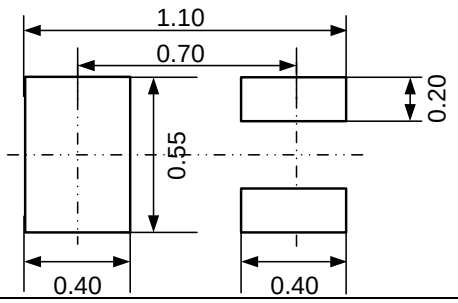
Outline Drawing – DFN1006-3L



DFN1006-3L

SYMBOL	MILLIMETER		
	MIN.	TYP.	MAX.
A	0.45	0.50	0.55
A1	0.00	-	0.05
b	0.40	0.50	0.60
b1	0.10	0.15	0.20
D	0.95	1.00	1.05
e	0.65BSC		
E	0.55	0.60	0.65
E1	0.19BSC		
L	0.20	0.25	0.30

Land Pattern



Marking Codes

Part Number	WT3904F
Marking Code	1N

Package Information

Qty：10k/Reel

CONTACT INFORMATION

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