



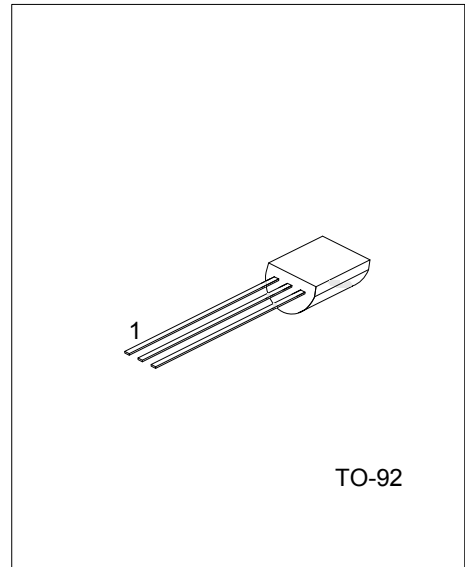
## 2N3906

## PNP EPITAXIAL PLANAR TRANSISTOR

### GENERAL PURPOSE APPLICATION

#### ■ FEATURES

- \* Collector-Emitter Voltage:  $V_{CEO}=40V$
- \* Collector Dissipation:  $P_{c(MAX)}=625mW$
- \* Complementary to UTC 2N3904



#### ■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
2N3906L-T92-B	2N3906G-T92-B	TO-92	E	B	C	Tape Box
2N3906L-T92-K	2N3906G-T92-K	TO-92	E	B	C	Bulk
2N3906L-T92-R	2N3906G-T92-R	TO-92	E	B	C	Tape Reel

Note: Pin Assignment: E: EMITTER B: BASE C: COLLECTOR

<p>2N3906L-T92-B</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Free</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel</p> <p>(2) T92: TO-92</p> <p>(3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATING ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	$V_{CBO}$	-40	V
Collector-Emitter Voltage	$V_{CEO}$	-40	V
Emitter-Base Voltage	$V_{EBO}$	-5	V
Collector Current	$I_C$	-200	mA
Base Current	$I_B$	-50	mA
Collector dissipation	$P_C$	625	mW
Junction Temperature	$T_J$	125	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-20 ~ +85	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-40 ~ +150	$^\circ\text{C}$

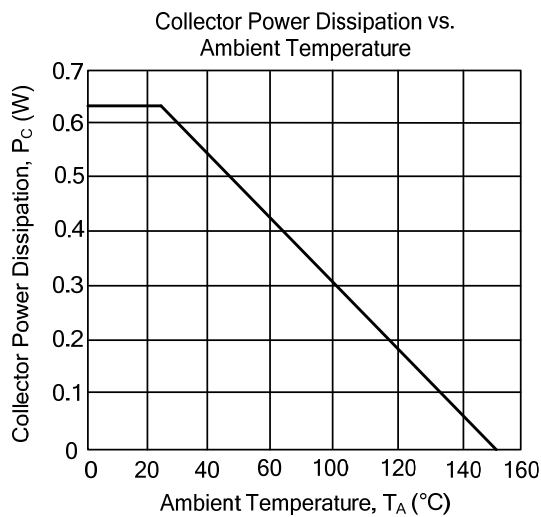
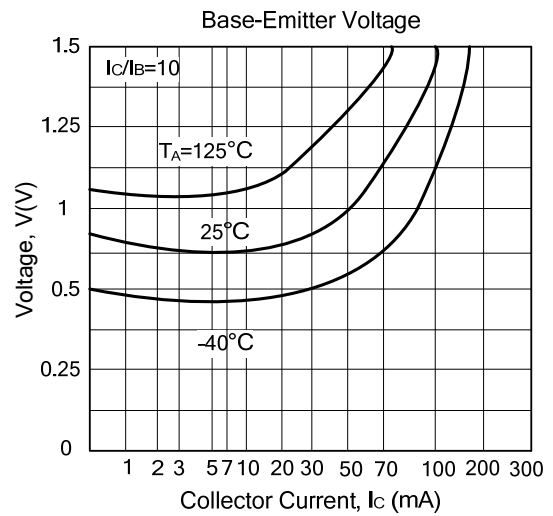
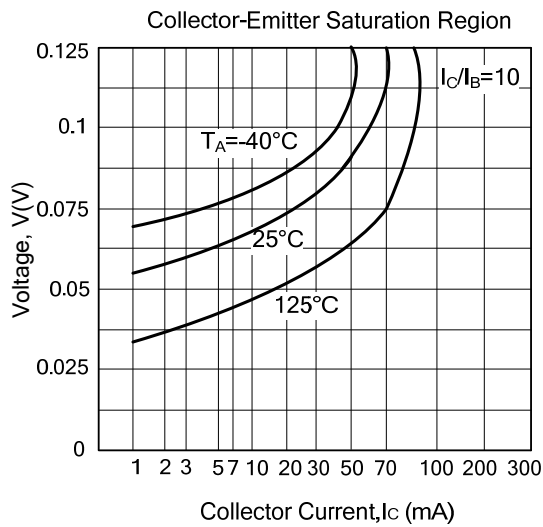
Note: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ , unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Cut-Off Current	$I_{CEX}$	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$			-50	nA
Base Cut-Off Current	$I_{BL}$	$V_{CE}=-30\text{V}, V_{EB}=-3\text{V}$			-50	nA
Collector-Base Breakdown Voltage	$V_{CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-40			V
Collector-Emitter Breakdown Voltage	$V_{CEO}$	$I_C=-1\text{mA}, I_B=0$ (Note)	-40			V
Emitter-Base Breakdown Voltage	$V_{EBO}$	$I_E=-10\mu\text{A}, I_C=0$	-6			V
DC Current Gain (Note)	$h_{FE1}$	$V_{CE}=-1\text{V}, I_C=-0.1\text{mA}$	60			
	$h_{FE2}$	$V_{CE}=-1\text{V}, I_C=-1\text{mA}$	80			
	$h_{FE3}$	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100		300	
	$h_{FE4}$	$V_{CE}=-1\text{V}, I_C=-50\text{mA}$	60			
	$h_{FE5}$	$V_{CE}=-1\text{V}, I_C=-100\text{mA}$	30			
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$			-0.25	V
	$V_{CE(SAT)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$			-0.4	
Base-Emitter Saturation Voltage	$V_{BE(SAT)1}$	$I_C=-10\text{mA}, I_B=-1\text{mA}$	-0.65		-0.85	V
	$V_{BE(SAT)2}$	$I_C=-50\text{mA}, I_B=-5\text{mA}$			-0.95	
Transition Voltage	$f_T$	$V_{CE}=-20\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	250			MHz
Output Capacitance	$C_{OB}$	$V_{CB}=-5\text{V}, I_E=0, f=1\text{MHz}$			4.5	pF
Turn On Time	$t_{ON}$	$V_{CC}=-3\text{V}, V_{BE}=-0.5\text{V}, I_C=-10\text{mA}, I_{B1}=-1\text{mA}$			70	ns
Turn Off Time	$t_{OFF}$	$I_{B1}=I_{B2}=-1\text{mA}$			300	ns

Note: Pulse test:  $P_W \leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$

## TYPICAL CHARACTERISTICS



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