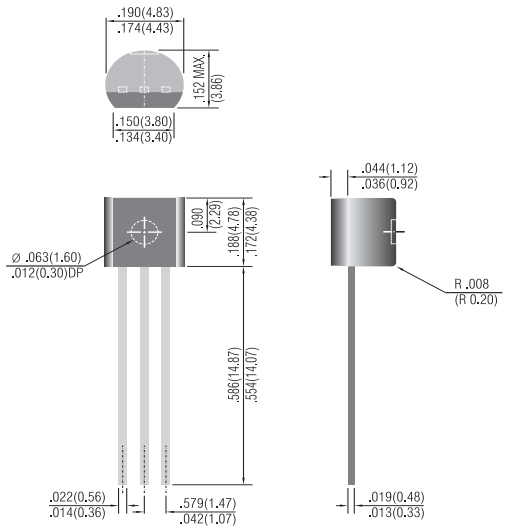
2N3906

PNP GENERAL PURPOSE SWITCHING TRANSISTOR

VOLTAGE 40 Volts **POWER** 625 mWatts

TO-92 Unit: inch (mm)



FEATURES

- PNP epitaxial silicon, planar design
- Collector-emitter voltage V_{CE} = 40V
- Collector current I_C = -200mA
- Pb free product are available :99% Sn above can meet RoHS environment substance directive request

MECHANICAL DATA

Case: TO-92

Terminals: Solderable per MIL-STD-750, Method 2026

Approx Weight : 0.02grams

Marking : S2A

ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Collector - Emitter Voltage	V_{CEO}	-40	V
Collector - Base Voltage	V_{CBO}	-40	V
Emitter - Base Voltage	V_{EBO}	-5.0	V
Collector Current - Continuous	I_C	-200	mA
Max Power Dissipation	P_{TOT}	625	mW
Storage Temperature	T_{STG}	-55 to 150	^{O}C
Junction Temperature	T_J	-55 to 150	^{O}C

THERMAL CHARACTERISTICS

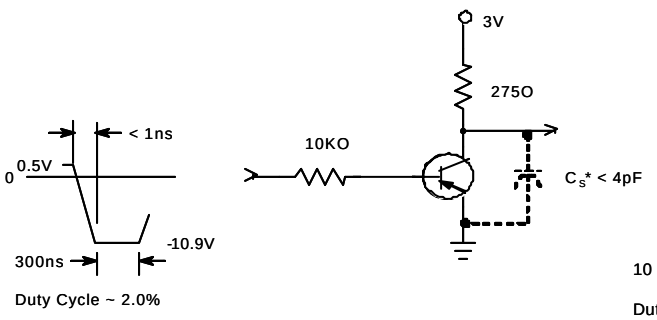
PARAMETER	SYMBOL	VALUE	UNITS
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	200	^{O}C / W

2N3906

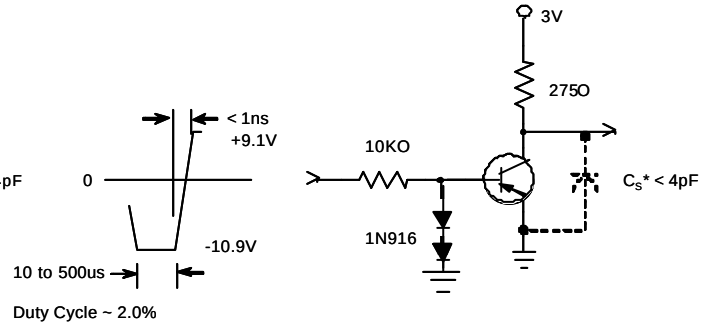
ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector - Emitter Breakdown Voltage	$V_{(BR)}CEO$	I_C=1.0mA, I_B=0	-40	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)}CBO$	I_C=-10uA, I_E=0	-40	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)}EBO$	I_E=10uA, I_C=0	-5.0	-	-	V
Base Cutoff Current	I_{BL}	V_{CE}=-30V, V_{EB}=-3.0V	-	-	-50	nA
Collector Cutoff Current	I_{CEX}	V_{CE}=-30V, V_{EB}=-3.0V	-	-	-50	nA
DC Current Gain	h_{FE}	I_C=-0.1mA, V_{CE}=-1.0V I_C=-1.0mA, V_{CE}=-1.0V I_C=-10mA, V_{CE}=-1.0V I_C=-50mA, V_{CE}=-1.0V I_C=-100mA, V_{CE}=-1.0V	60 80 100 60 30	- - - - -	- - 300 - -	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-10mA, I_B=-1.0mA I_C=-50mA, I_B=-5.0mA	- -	- -	-0.25 -0.4	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=-10mA, I_B=-1.0mA I_C=-50mA, I_B=-5.0mA	-0.65 -	- -	-0.85 -0.95	V
Collector-Base Capacitance	C_{CBO}	V_{CB}=-5.0V, I_E=0, f=1MH$_Z$	-	-	4.5	pF
Emitter - Base Capacitance	C_{EBO}	V_{CB}=-0.5V, I_C=0, f=1MH$_Z$	-	-	10	pF
Delay Time	t_d	V_{CC}=-3V, V_{BE}=-0.5V, I_C=-10mA, I_B=-1mA	-	-	35	ns
Rise Time	t_r		-	-	35	ns
Storage Time	t_s	V_{CC}=-3V,I_C=-10mA I_{B1}=I_{B2}=-1mA	-	-	225	ns
Fall Time	t_f		-	-	75	ns

SWITCHING TIME EQUIVALENT TEST CIRCUITS



Delay and Rise Time Equivalent Test Circuit



Storage and Fall Time Equivalent Test Circuit

2N3906

ELECTRICAL CHARACTERISTICS CURVES

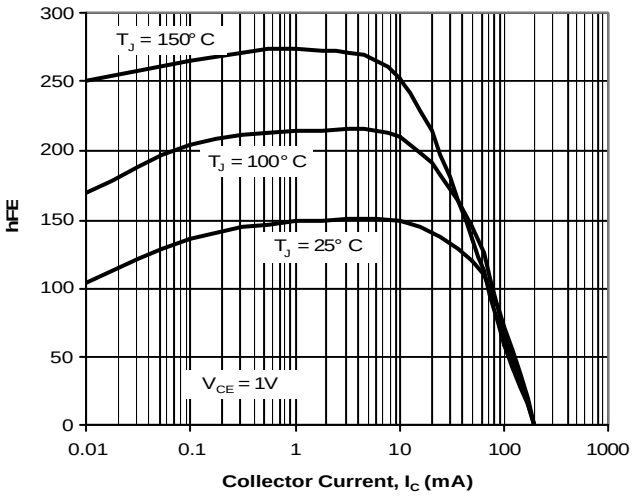


Fig. 1. Typical h_{FE} vs. Collector Current

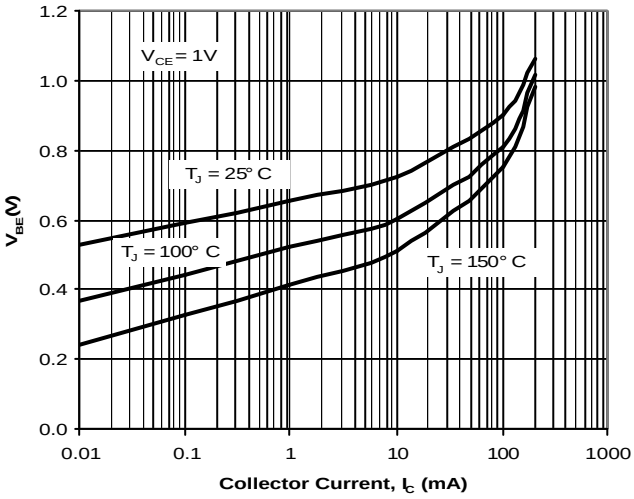


Fig. 2. Typical V_{BE} vs. Collector Current

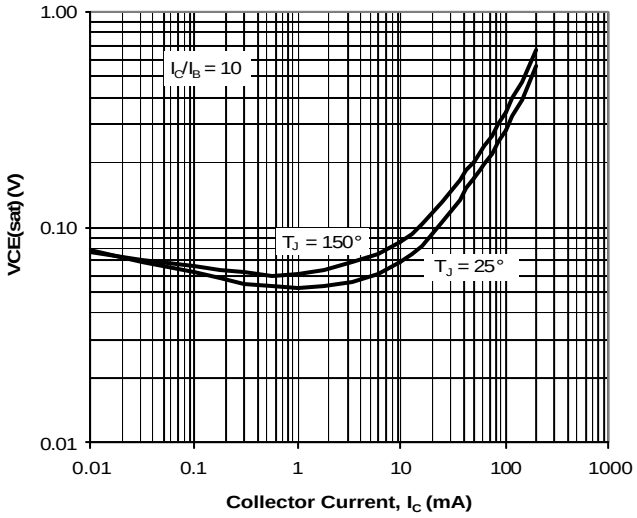


Fig. 3. Typical $V_{CE\,(sat)}$ vs. Collector Current

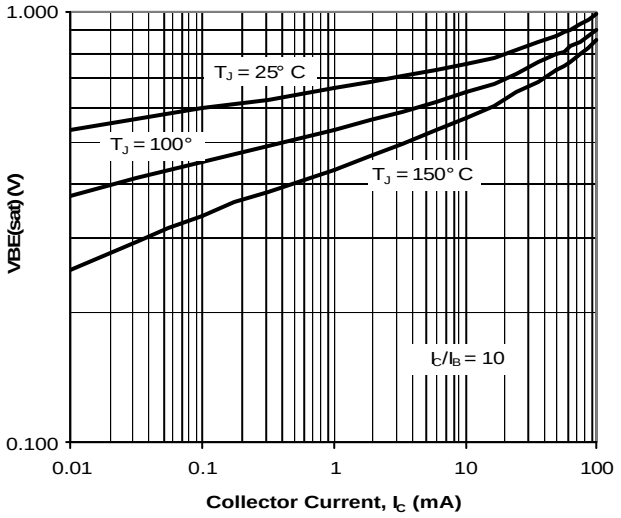


Fig. 4. Typical $V_{BE\,(sat)}$ vs. Collector Current

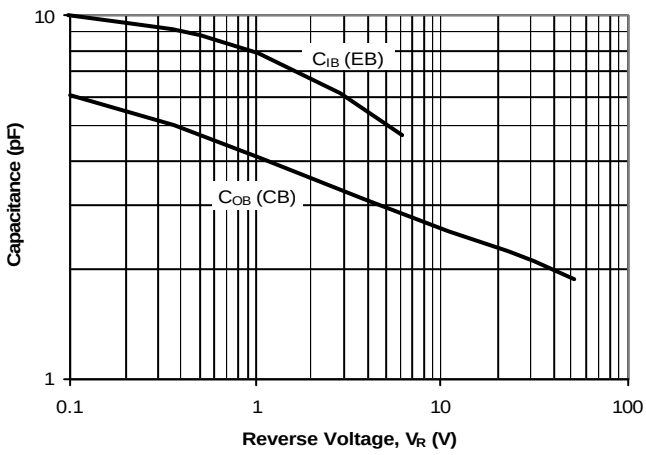
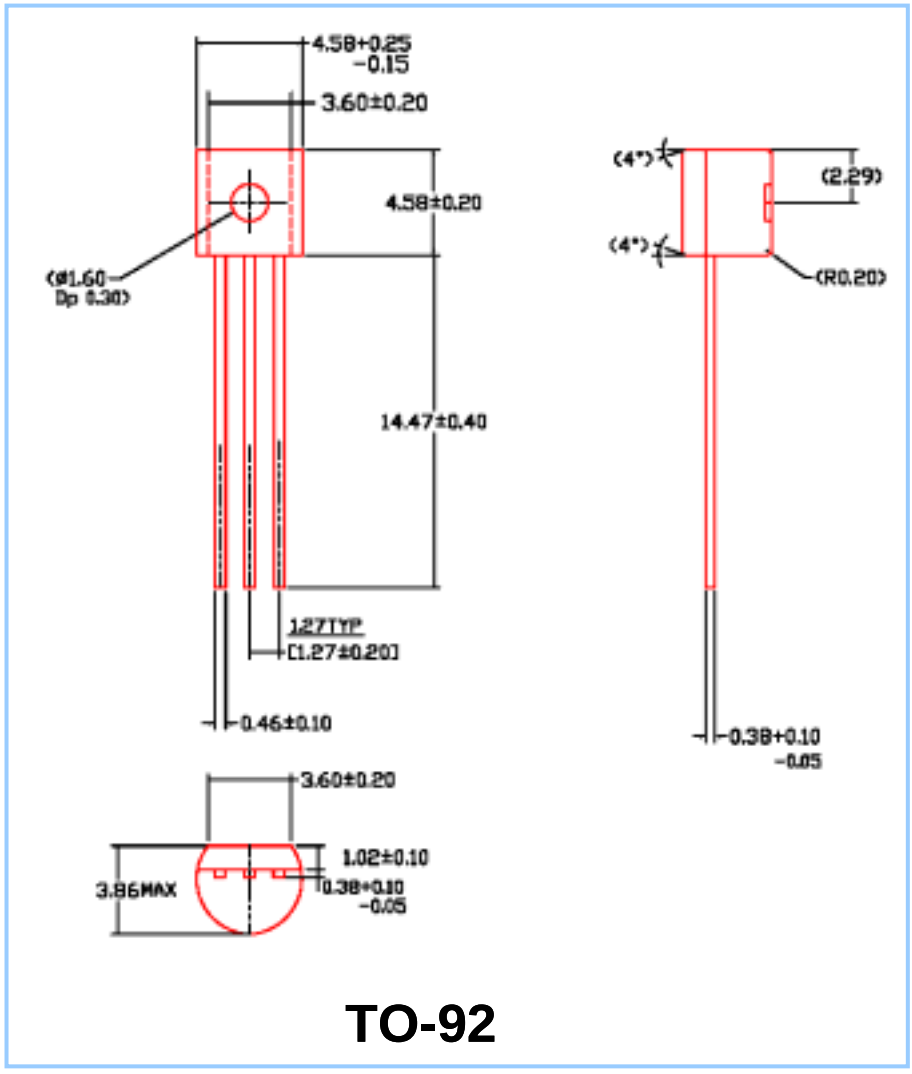


Fig. 5. Typical Capacitances vs. Reverse Voltage

2N3906

TO-92 Case Outline



TO-92