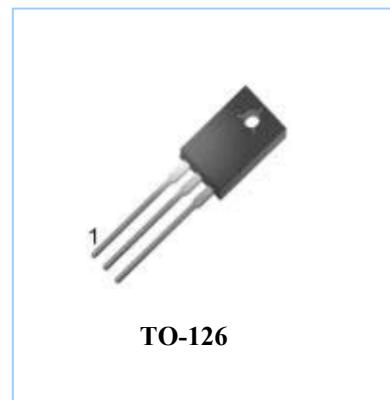


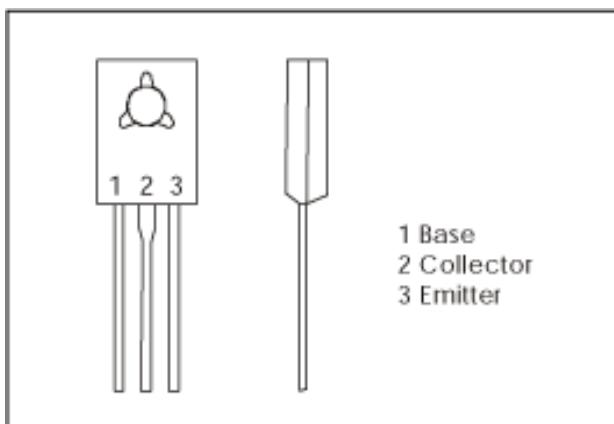
## TO-126 Triple Diffused NPN Transistor

**FEATURES**

High Speed Switching  
 Suitable for Switching Regulator and  
 Motor Control  
 High Collector Voltage: VCBO = 700 V  
 Excellent Switching Times  
 $t_f = 0.3 \mu s$

**ABSOLUTE MAXIMUM RATINGS (TA=25°)**

Characteristic	Symbol	Value	Unit
Collector-Base Voltage	VCBO	700	V
Collector-Emitter Voltage	VCEO	400	
Emitter-Bias Voltage	VEBO	9	
Collector Current (DC)	I <sub>C</sub>	1.5	A
Collector Current (Pulse)	I <sub>C</sub>	3.0	
Base Current (DC)	I <sub>B</sub>	0.75	
Collector Dissipation(Tc=25°C)	P <sub>C</sub>	11.2	W
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-60~150	

**PIN CONFIGURATION****ORDERING INFORMATION**

Part Number	Operating Temperature Range	Package Type
AV13003	-55°C ~ +150°C	TO-126

**ELECTRICAL CHARACTERISTICS** ( $T_A=+25^\circ\text{C}$ ).

<b>Characteristics</b>	<b>Symbol</b>	<b>Min</b>	<b>Typ</b>	<b>Max</b>	<b>Unit</b>
Collector- Emitter Sustaining Voltage $I_B = 0$ , $I_C = 10\text{mA}$	$V_{CEO(\text{SUS})}$	400			V
Emitter Cutoff Current $V_{EB} = 9\text{V}$ , $I_C = 0$	$I_{EBO}$			1	$\text{mA}$
DC Current Gain ( Note 1 ) $V_{CE} = 2\text{V}$ , $I_C = 0.5\text{A}$ $V_{CE} = 2\text{V}$ , $I_C = 1\text{A}$	$h_{FE}$	8 5		60 40	$\mu\text{A}$
Collector Emitter Saturation Voltage( Note 1 ) $I_C = 0.5\text{A}$ , $I_B = 0.1\text{A}$ $I_C = 1\text{A}$ , $I_B = 0.25\text{A}$	$V_{CE(\text{SAT})}$			0.5 1	V
Base-Emitter Saturation Voltage ( Note 1 ) $I_C = 0.5\text{A}$ , $I_B = 0.1\text{A}$ $I_C = 1\text{A}$ , $I_B = 0.25\text{A}$	$V_{BE(\text{SAT})}$			1.0 1.2	
Storage Time $V_{CC} = 125\text{V}$ , $I_C = 1\text{A}$ $I_{B1} = I_{B2} = 0.2\text{A}$	$t_s$			2	$\mu\text{s}$
Fall Time $V_{CC} = 125\text{V}$ , $I_C = 1\text{A}$ $I_{B1} = I_{B2} = 0.2\text{A}$	$t_f$			0.3	

Note 1 : Pulse Test PW  $\leq 300 \mu\text{s}$  , Duty Cycle  $\leq 2\%$

## TYPICAL CHARACTERISTICS

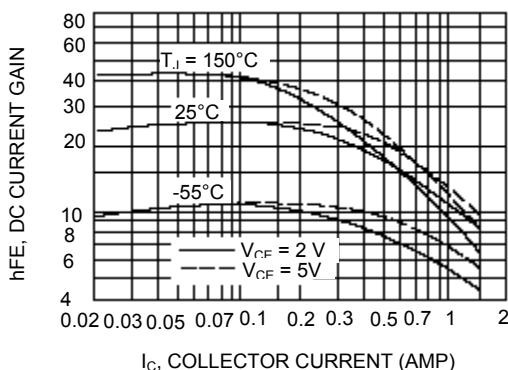
 $I_C$ , COLLECTOR CURRENT (AMP)

Figure 1. DC Current Gain

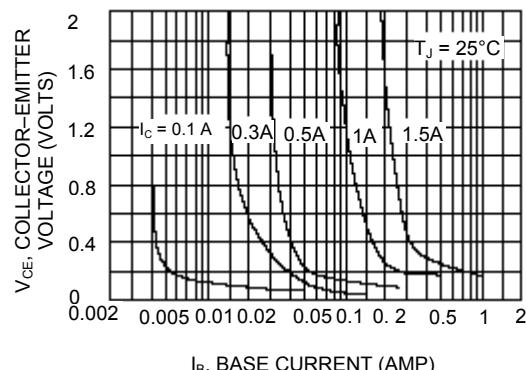
 $I_B$ , BASE CURRENT (AMP)

Figure 2. Collector Saturation

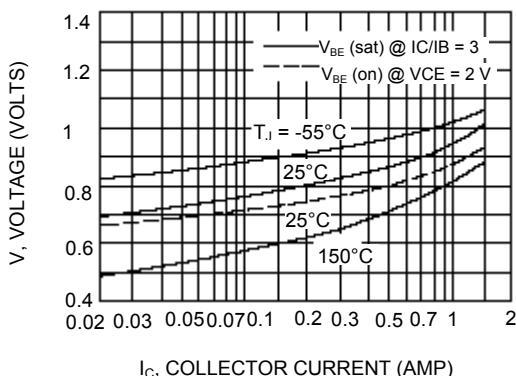
 $I_C$ , COLLECTOR CURRENT (AMP)

Figure 3. Base-Emitter Voltage

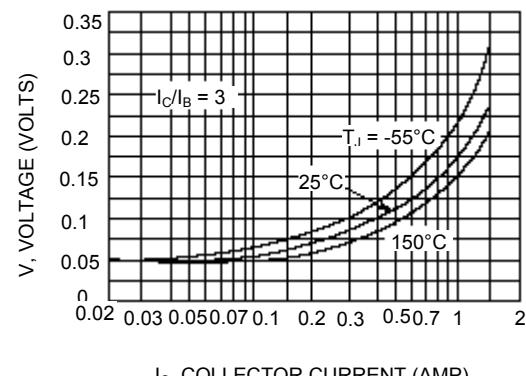
 $I_C$ , COLLECTOR CURRENT (AMP)

Figure 4. Collector-Emitter Saturation Region

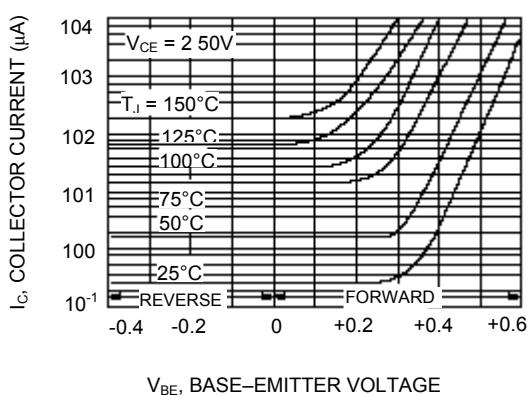
 $V_{BE}$ , BASE-EMITTER VOLTAGE

Figure 5. Collector Cutoff Region

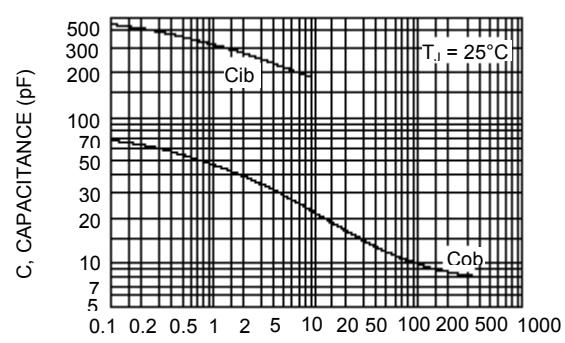
 $V_R$ , REVERSE VOLTAGE (VOLTS)

Figure 6. Capacitance