

## NPN general purpose Transistor

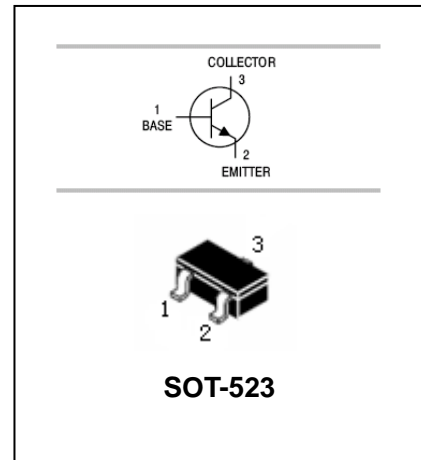
### FEATURES

- Reduces board space.
- High  $h_{FE}$ , 210-460 (typical).
- Low  $V_{CE(sat)}$ , <0.5V.
- Available in 8mm, 7-inch/3000 Unit Tape and reel.



### APPLICATIONS

- General purpose switching and amplification.



### MAXIMUM RATING @ $T_a=25^\circ\text{C}$ unless otherwise specified

Symbol	Parameter	Value	Units
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emitter Voltage	50	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current -Continuous	0.1	A
$P_C$	Collector Dissipation	125	mW
$T_j, T_{stg}$	Junction and Storage Temperature	-55 to +150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified**

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A, I_E=0$	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=1.0mA, I_B=0$	50			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A, I_C=0$	5			V
Collector cut-off current	$I_{CBO}$	$V_{CB}=30V, I_E=0$			0.5	$\mu A$
Emitter cut-off current	$I_{EBO}$	$V_{EB}=4V, I_C=0$			0.5	$\mu A$
DC current gain	$h_{FE}$	$V_{CE}=6V, I_C=1mA$	120		560	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=60mA, I_B=5.0mA$			0.4	V
Transition frequency	$f_T$	$V_{CE}=12V,$ $I_C=2.0mA, f=30MHz$		180		MHz
Collector output capacitance	$C_{ob}$	$V_{CB}=12V, I_C=0, f=1MHz$			2.0	Pf

**CLASSIFICATION OF  $H_{FE}$** 

RANK	Q	R	S
RANGE	120-270	180-390	270-560
MARKING	BQ	BR	BS

## TYPICAL CHARACTERISTICS @ $T_A=25^\circ\text{C}$ unless otherwise specified

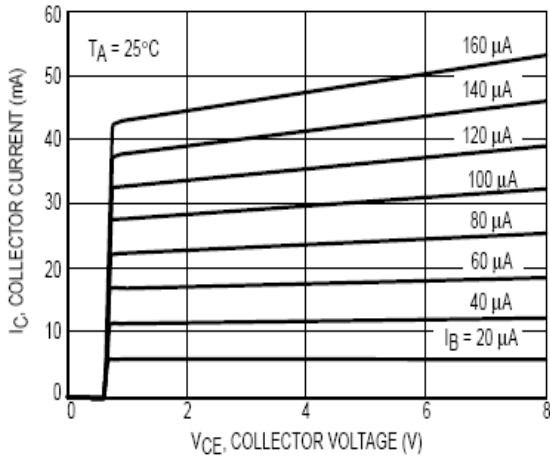


Figure 1.  $I_C - V_{CE}$

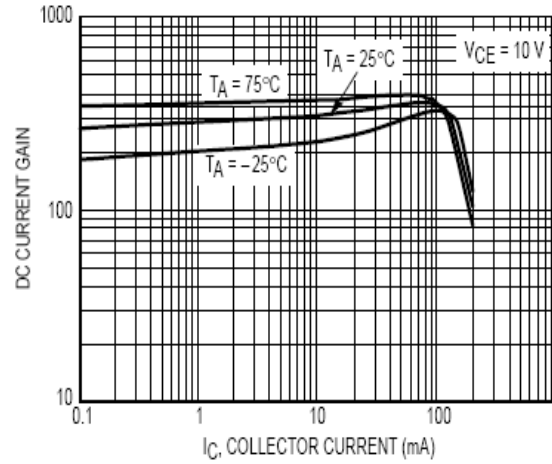


Figure 2. DC Current Gain

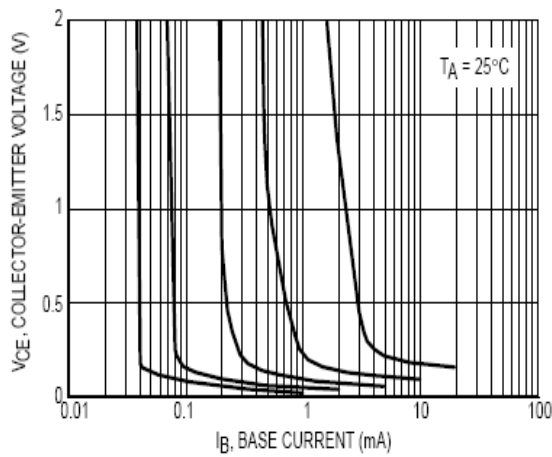


Figure 3. Collector Saturation Region

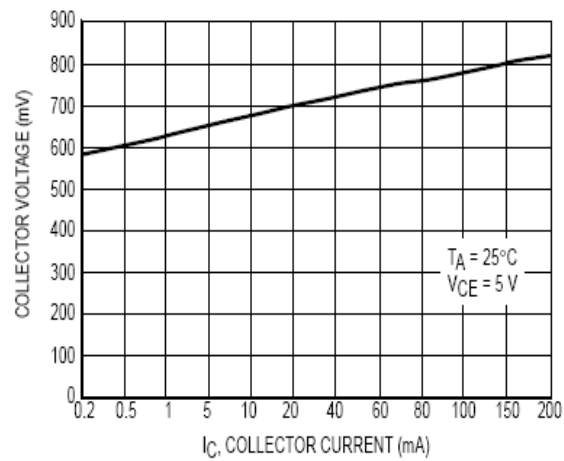


Figure 4. On Voltage

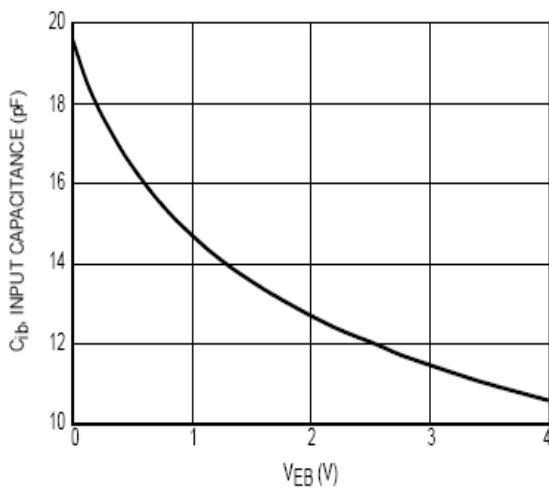


Figure 5. Capacitance

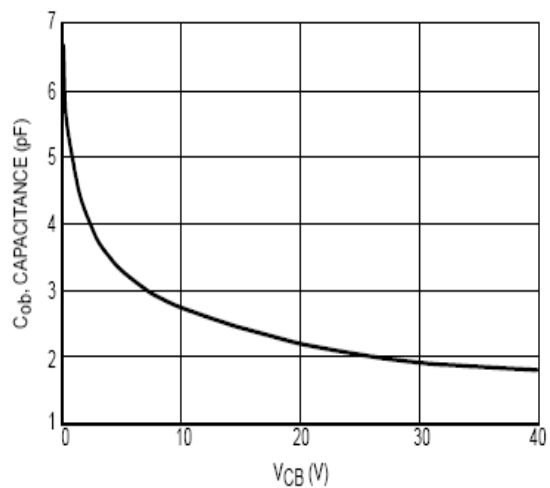
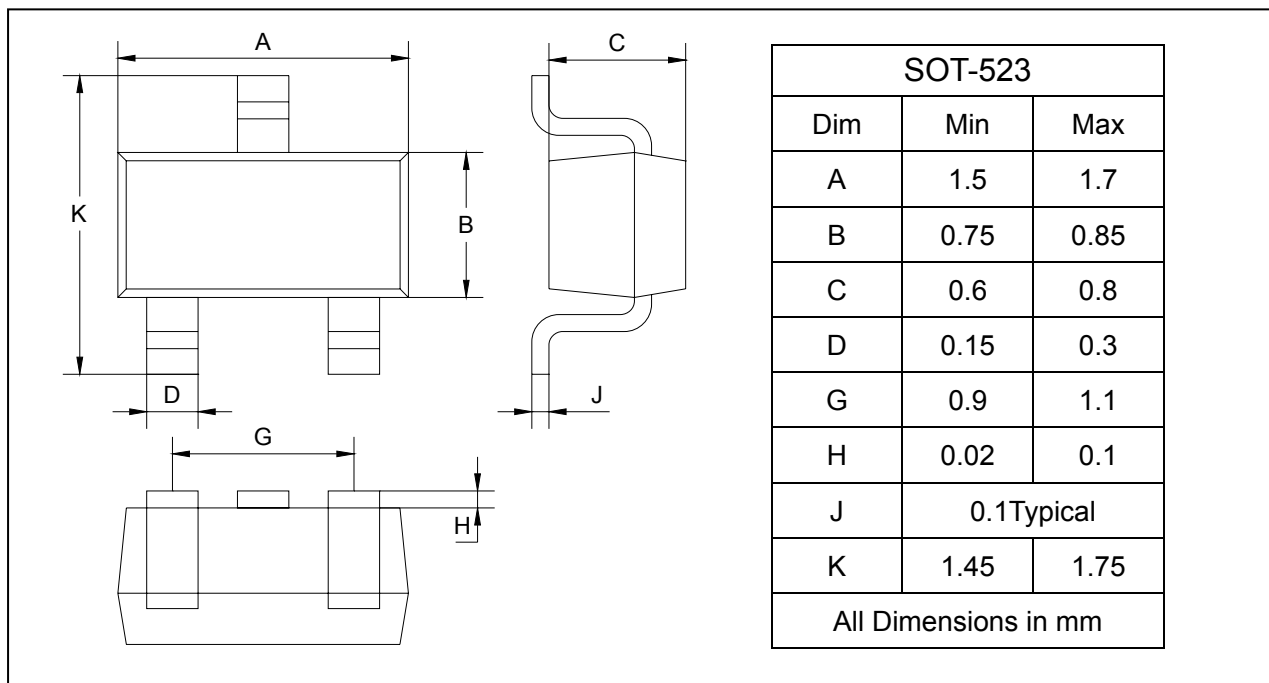


Figure 6. Capacitance

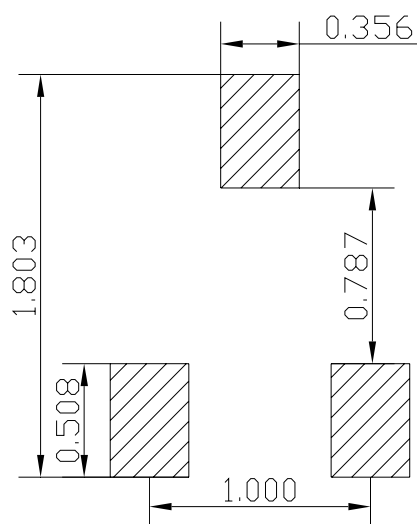
## PACKAGE OUTLINE

Plastic surface mounted package

SOT-523



## SOLDERING FOOTPRINT



Unit : mm

## PACKAGE INFORMATION

Device	Package	Shipping
2SC4617	SOT-523	3000/Tape&Reel