

# SOT-23 Plastic-Encapsulate Transistors

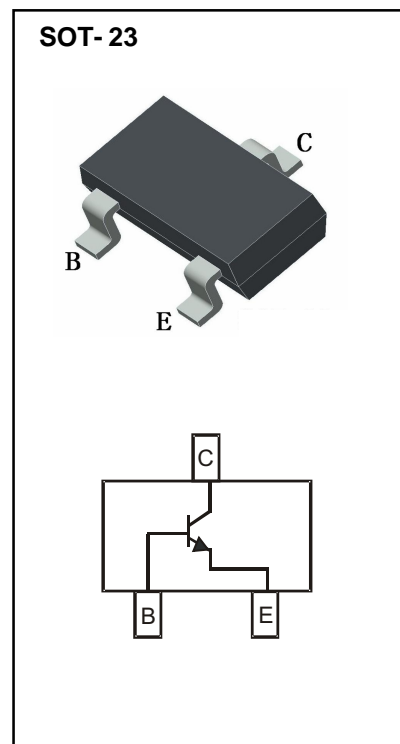
## TRANSISTOR( NPN )

### Features

- For general AF applications
- High collector current
- High current gain
- Low collector-emitter saturation voltage
- Complementary types: BC807 (PNP)

### Limiting Values (Absolute Maximum Rating)

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-Base Voltage	50	V
$V_{CEO}$	Collector-Emmitter Voltage	45	V
$V_{EBO}$	Emitter-Base Voltage	5	V
$I_C$	Collector Current	0.5	A
$P_C$	Collector Power Dissipation	300	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	417	°C/W
$T_j$	Junction Temperature	150	°C
$T_{stg}$	Storage Temperature	-55~+150	°C



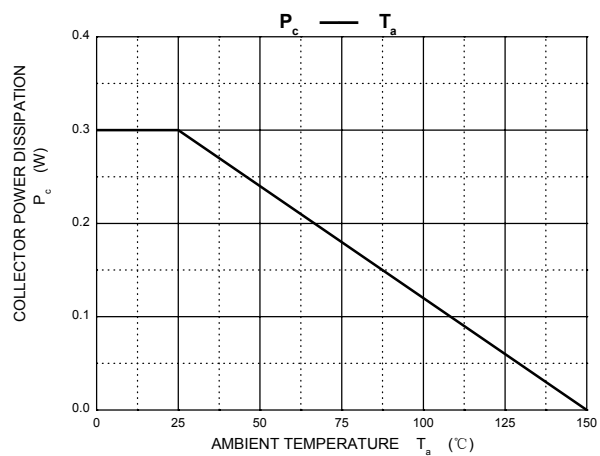
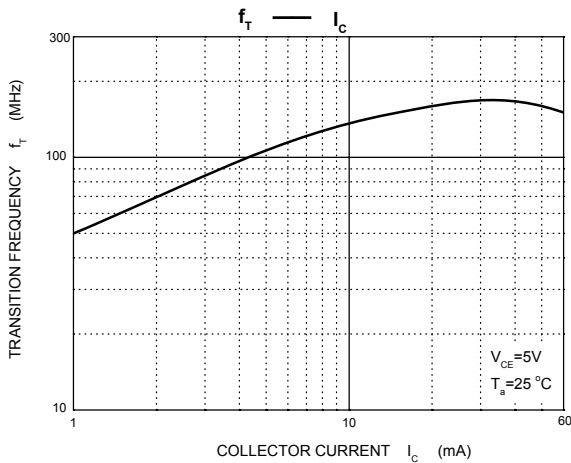
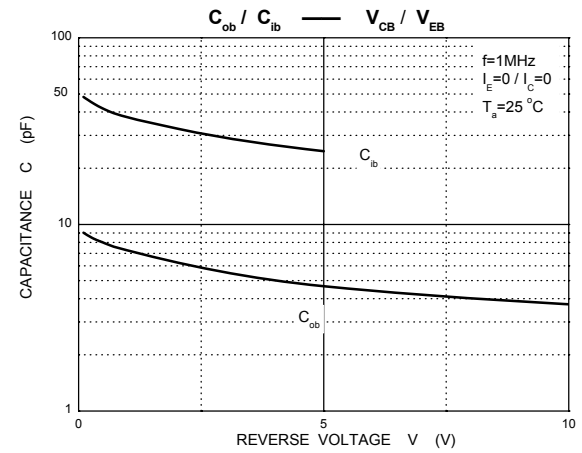
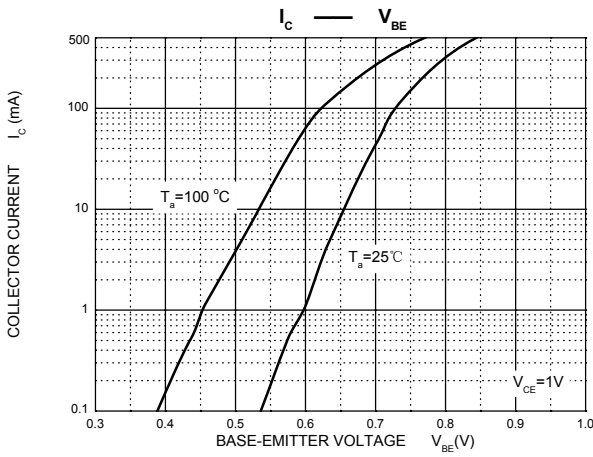
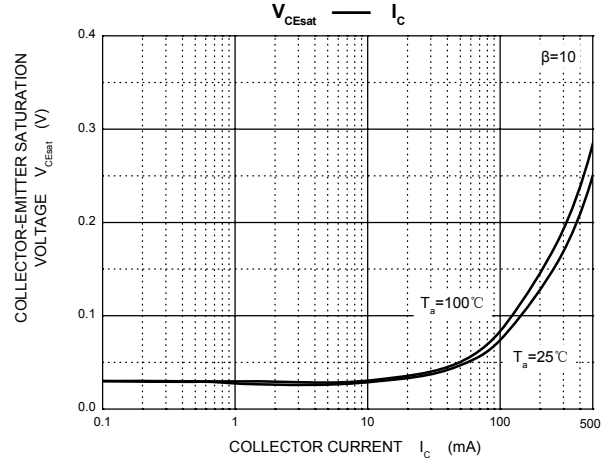
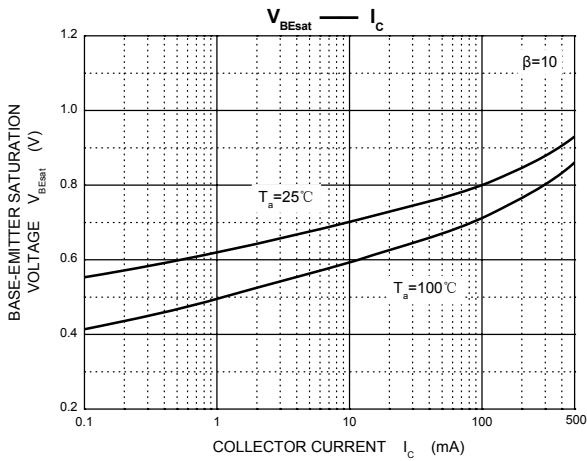
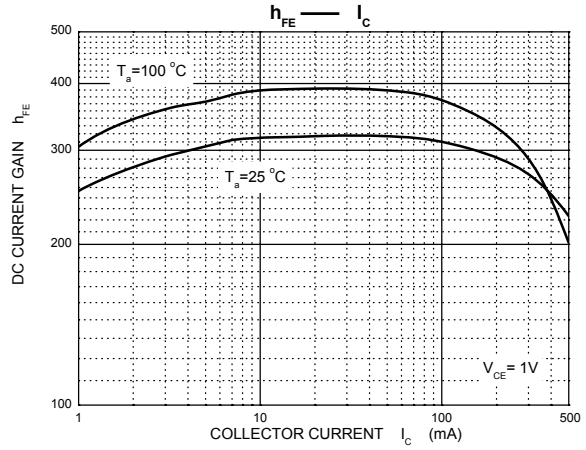
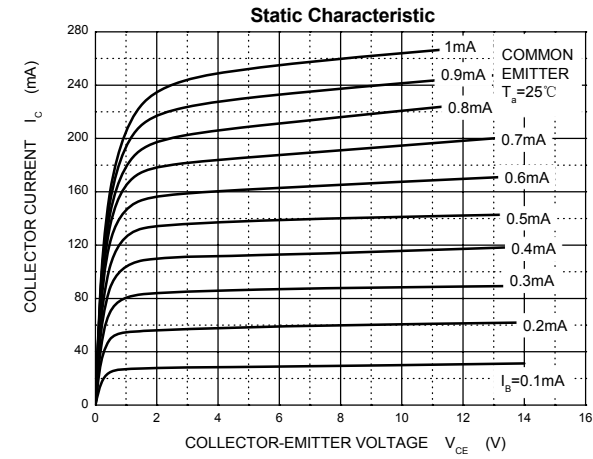
### Electrical Characteristics (T=25°C Unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
$V_{CBO}$	Collector-Base Voltage	$I_C = 10\mu A, I_E = 0$	50			V
$V_{CEO}$	Collector-Emmitter Voltage	$I_C = 10mA, I_B = 0$	45			V
$V_{EBO}$	Emitter-Base Voltage	$I_E = 1\mu A, I_C = 0$	5			V
$I_{CBO}$	Collector-Base Current	$V_{CB} = 45V, I_E = 0$			0.1	$\mu A$
$I_{EBO}$	Emitter-Base Current	$V_{EB} = 4V, I_C = 0$			0.1	$\mu A$
$h_{FE(1)}$	DC Current Gain	$V_{CE} = 1V, I_C = 100mA$	100		600	
		$V_{CE} = 1V, I_C = 500mA$	40			
$V_{CE(sat)}$	Collector-Emmitter Saturation Voltage	$I_C = 500mA, I_B = 50mA$		0.7		V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C = 500mA, I_B = 50mA$		1.2		V
$V_{BE}$	Base-Emitter Voltage	$V_{CE} = 1V, I_C = 500mA$		1.2		V
$C_{ob}$	Output Capacitance	$V_{CB} = 10V, f = 1MHz$		10		pF
$f_T$	Transition Frequency	$V_{CE} = 5V, I_C = 10mA, f = 100MHz$	100			MHz

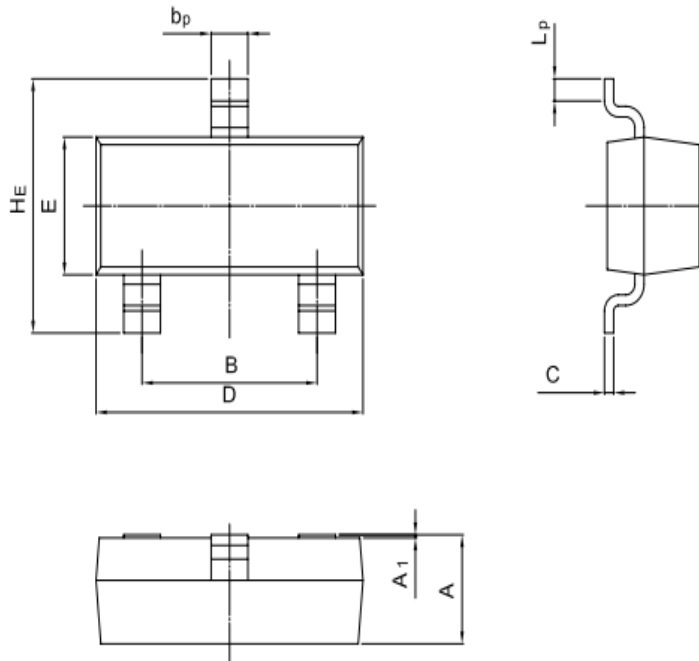
### CLASSIFICATION OF $h_{FE}$

Symbol	67, %±	67, %±!	67, %±!( \$
$F_{Ub} Y$	\$\$\$!& \$	%!(\$ \$	&)!* \$ \$
$A_{Uf} b$	*5	*6	*7

# Typical Characteristics

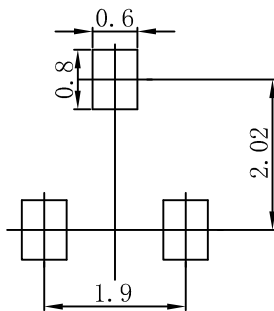


## SOT-23 Package Outline Dimensions



UNIT	A	B	bp	C	D	E	HE	A1	Lp
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20

## SOT-23 Suggested Pad Layout



**Note:**

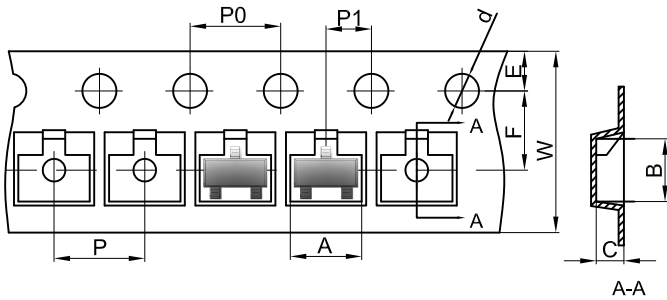
1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05$  mm.
3. The pad layout is for reference purposes only.

**NOTICE**

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# Reel Taping Specifications For Surface Mount Devices-SOT-23

## SOT-23 Embossed Carrier Tape



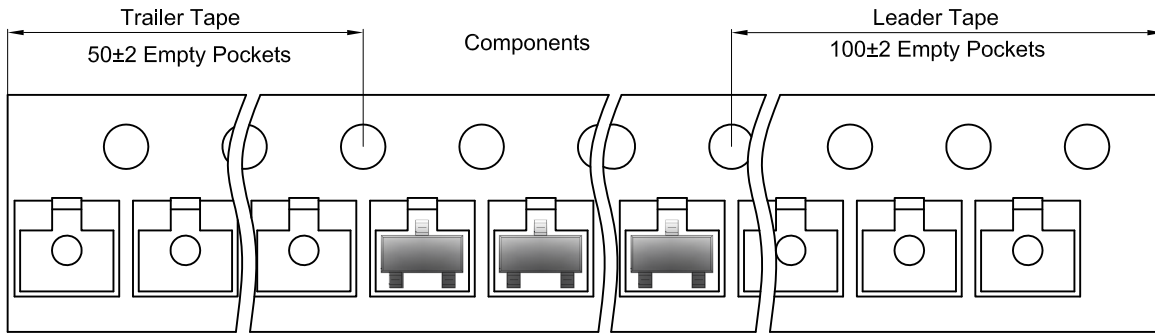
### Packaging Description:

SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

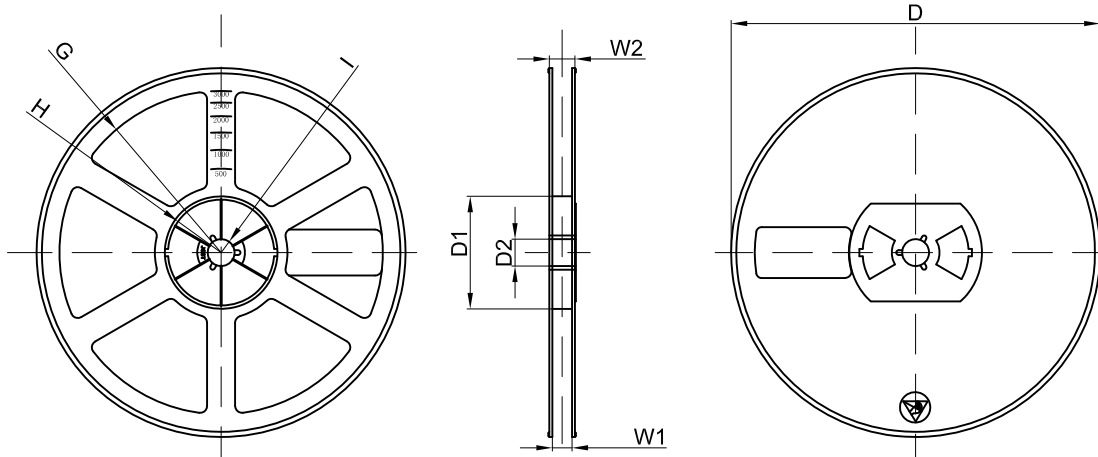
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-23 Tape Leader and Trailer



## SOT-23 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×230	

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