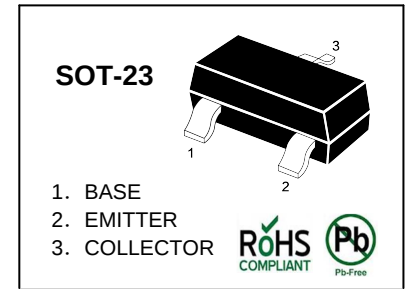


NPN Silicon Epitaxial Planar Transistor

High frequency amplifier application
for FM IF, OSC stage and AM CONV. IF stage

The transistor is subdivided into three groups
R, O, and Y, according to its DC current gain.



Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	35	V
Collector Emitter Voltage	V_{CEO}	30	V
Emitter Base Voltage	V_{EBO}	4	V
Collector Current	I_C	50	mA
Emitter Current	$-I_E$	50	mA
Power Dissipation	P_{tot}	200	mW
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature Range	T_S	-55 to +125	$^\circ\text{C}$

Characteristics at $T_{amb} = 25^\circ\text{C}$

Parameter	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $V_{CE} = 12\text{ V}$, $I_C = 2\text{ mA}$ Current Gain Group R O Y	h_{FE}	40	-	80	-
	h_{FE}	70	-	140	-
	h_{FE}	120	-	240	-
	h_{FE}				
Collector Cutoff Current at $V_{CB} = 35\text{ V}$	I_{CBO}	-	-	0.1	μA
Emitter Cutoff Current at $V_{EB} = 4\text{ V}$	I_{EBO}	-	-	0.1	μA
Collector Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	$V_{CE(sat)}$	-	-	0.4	V
Base Emitter Saturation Voltage at $I_C = 10\text{ mA}$, $I_B = 1\text{ mA}$	$V_{BE(sat)}$	-	-	1	V
Transition Frequency at $V_{CE} = 10\text{ V}$, $I_C = 1\text{ mA}$	f_T	100	-	400	MHz
Collector Output Capacitance at $V_{CB} = 10\text{ V}$, $f = 1\text{ MHz}$	C_{ob}	1.4	2	3.2	pF
Collector Base Time Constant at $V_{CE} = 10\text{ V}$, $-I_E = 1\text{ mA}$, $f = 30\text{ MHz}$	$C_c, \tau_{bb'}$	10	-	50	ps
Power Gain at $V_{CC} = 6\text{ V}$, $f = 10.7\text{ MHz}$, $-I_E = 1\text{ mA}$	G_{pe}	27	29	33	dB

Typical Characteristics

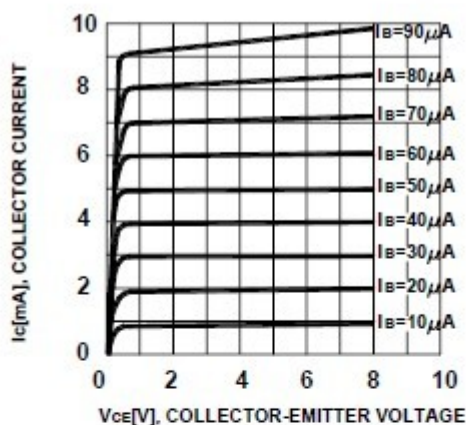


Figure 1. Static Characteristic

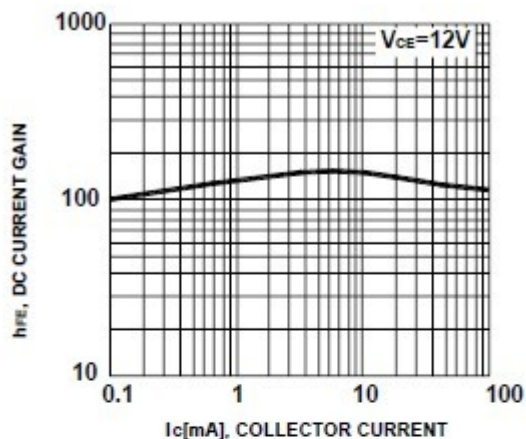


Figure 2. DC Current Gain

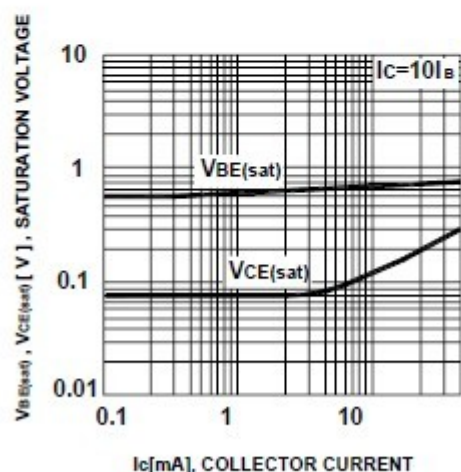


Figure 3. Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage

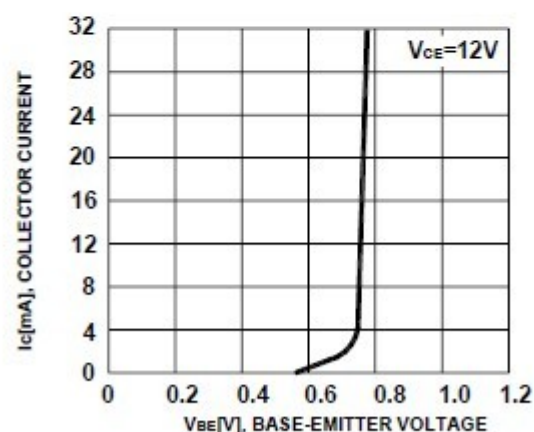


Figure 4. Base-Emitter On Voltage

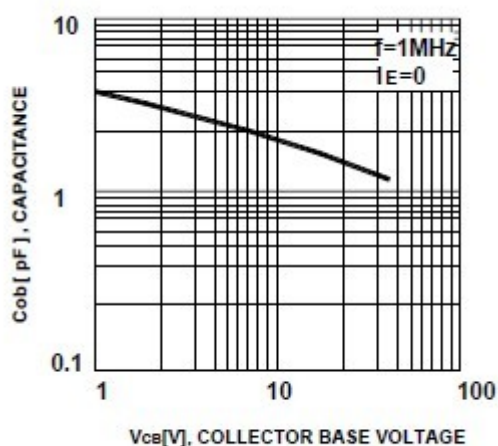


Figure 5. Collector Output Capacitance

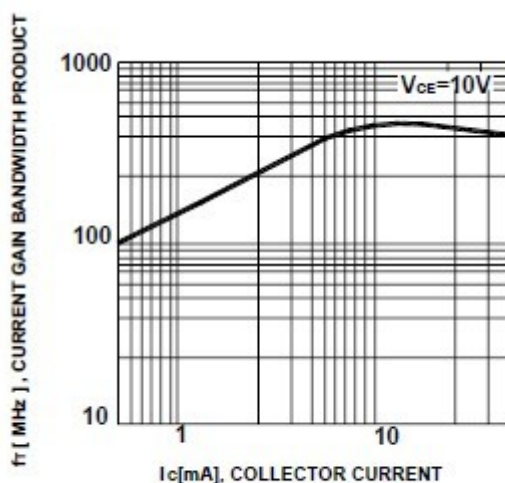
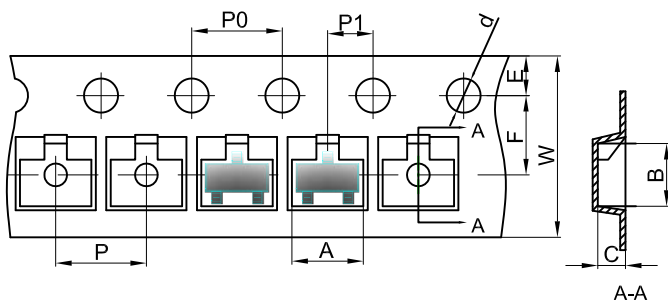


Figure 6. Current Gain Bandwidth Product

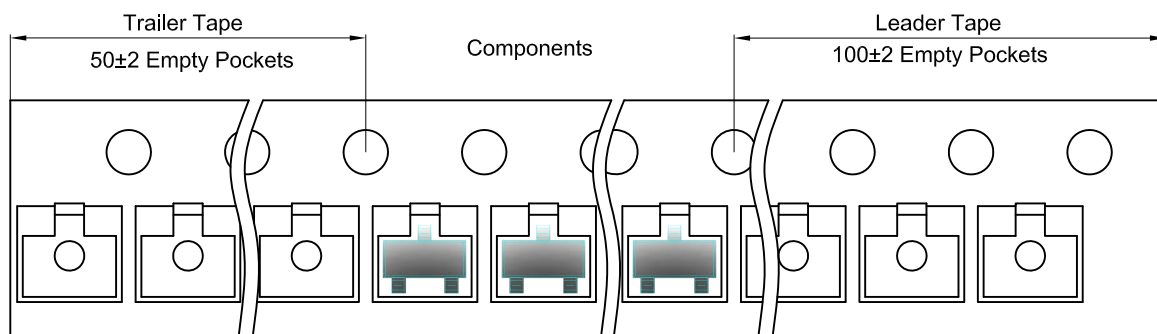
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

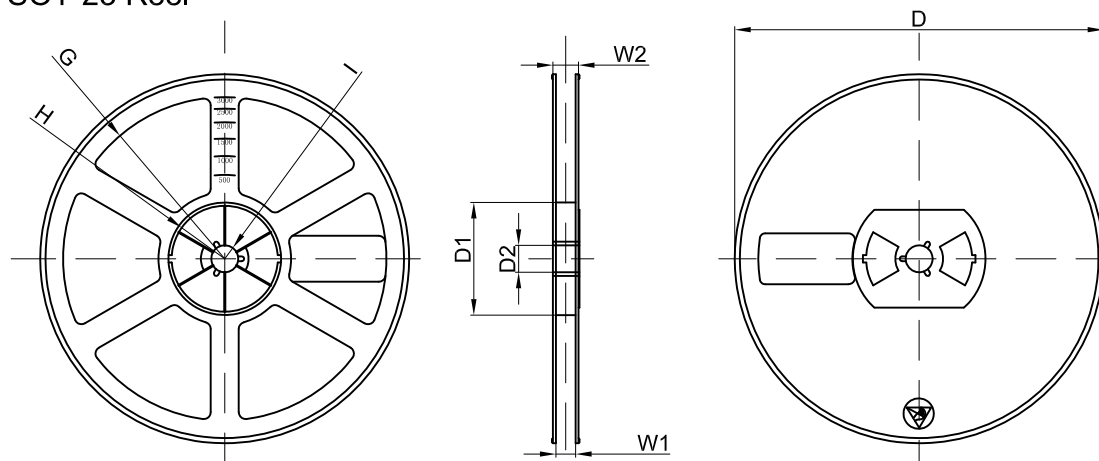


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

SOT-23 Tape Leader and Trailer

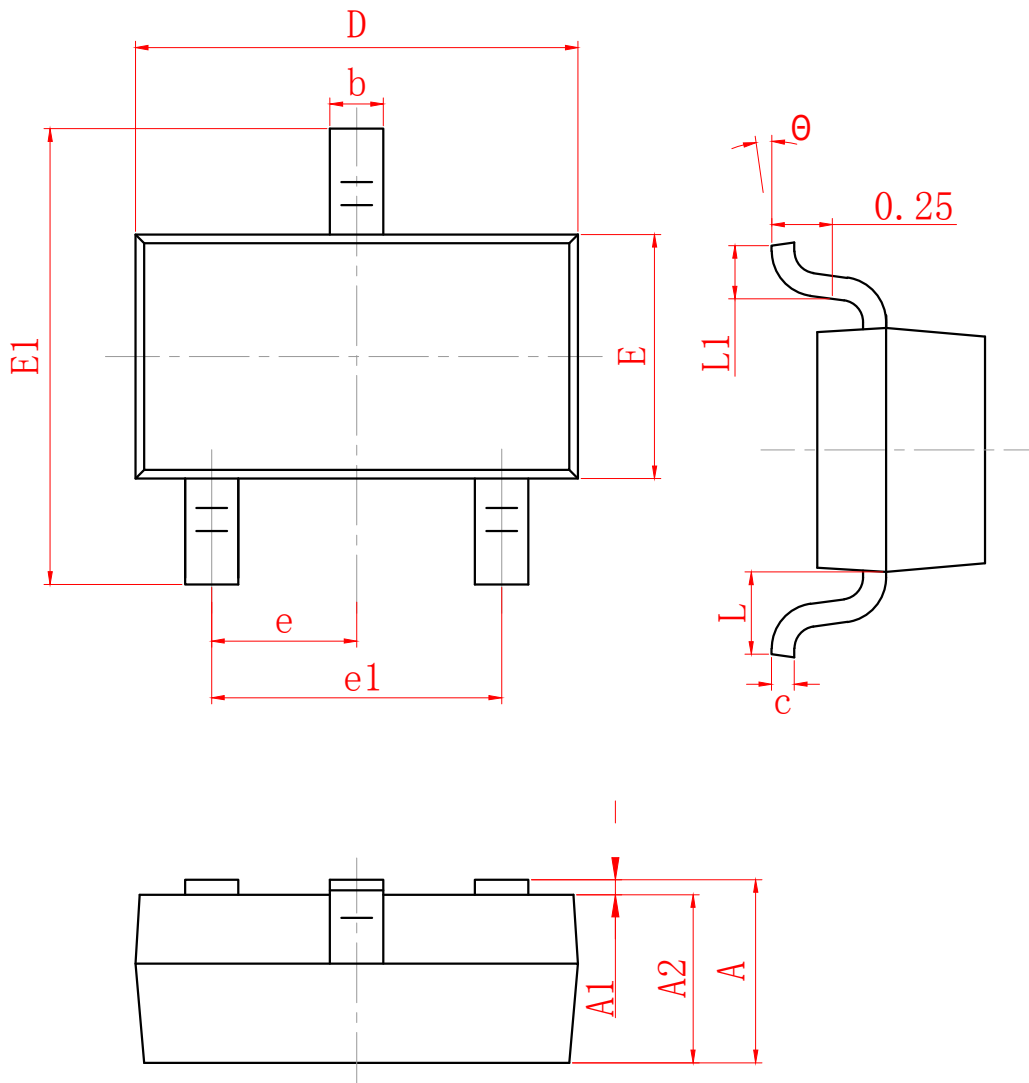


SOT-23 Reel



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	438×438×220	



SYMBOL	MILLIMETER	
	MIN	MAX
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP	
e1	1.800	2.000
L	0.550 REF	
L1	0.300	0.500
θ	0°	8°

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