

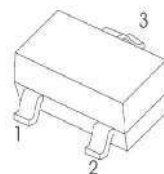
SOT-23 Plastic-Encapsulate Transistors

TRANSISTOR (PNP)

●Features

- 1) Collector current is large.
- 2) $V_{CE(sat)} \leq -370\text{mV}$
at $I_C = -1\text{A}$ / $I_B = -50\text{mA}$
- 3) Complementary NPN Types : 2SD2657K

SOT - 23



1. BASE
2. EMITTER
3. COLLECTOR

Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Values	Unit
Collector-base voltage	V_{CBO}	-30	V
Collector-emitter voltage	V_{CEO}	-30	V
Emitter-base voltage	V_{EBO}	-6	V
Collector current	I_C	-1.5	A
	I_{CP}^{*1}	-3	A
Power dissipation	P_D^{*2}	200	mW
Junction temperature	T_j	150	$^\circ\text{C}$
Range of storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical characteristics ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Collector-base breakdown voltage	BV_{CBO}	$I_C = -10\mu\text{A}$	-30	-	-	V
Collector-emitter breakdown voltage	BV_{CEO}	$I_C = -1\text{mA}$	-30	-	-	V
Emitter-base breakdown voltage	BV_{EBO}	$I_E = -10\mu\text{A}$	-6	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB} = -30\text{V}$	-	-	-100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = -6\text{V}$	-	-	-100	nA
Collector-emitter saturation voltage	$V_{CE(sat)}^{*3}$	$I_C = -1\text{A}$, $I_B = -50\text{mA}$	-	-200	-370	mV
DC current gain	h_{FE}	$V_{CE} = -2\text{V}$, $I_C = -100\text{mA}$	270	-	680	-
Transition frequency	f_T	$V_{CE} = -2\text{V}$, $I_E = 100\text{mA}$, $f = 100\text{MHz}$	-	280	-	MHz
Output capacitance	C_{ob}	$V_{CB} = -10\text{V}$, $I_E = 0\text{A}$, $f = 1\text{MHz}$	-	13	-	pF

Typical Characteristics

Fig.1 Ground Emitter Propagation Characteristics

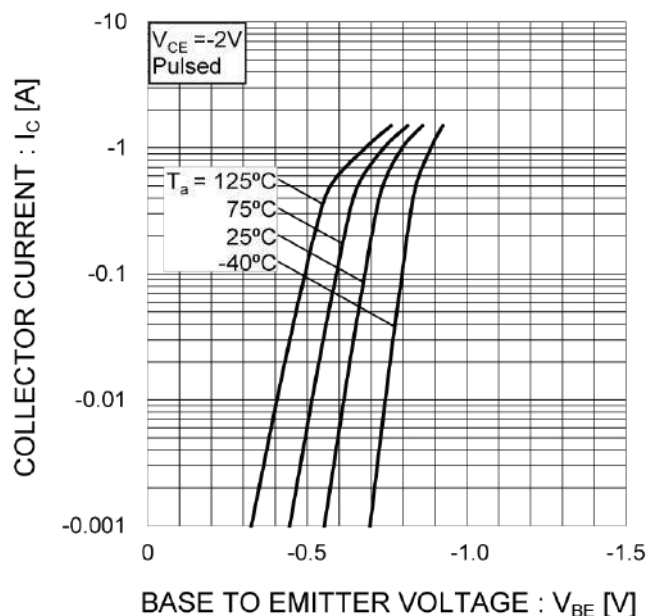


Fig.2 Typical Output Characteristics

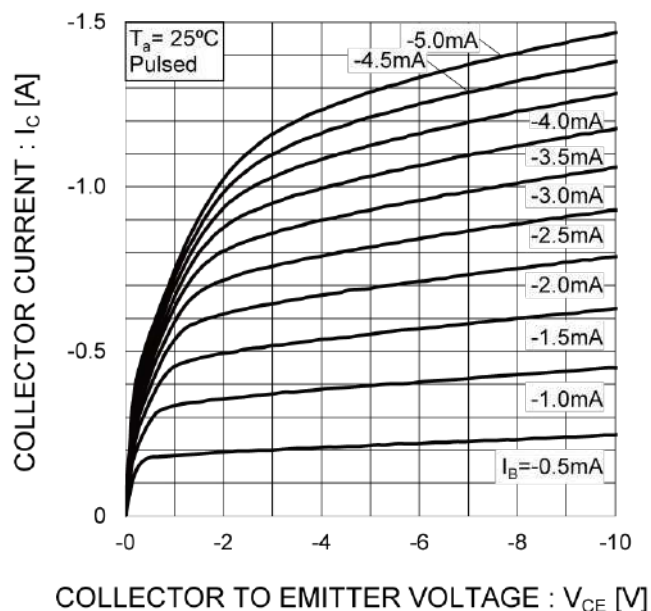


Fig.3 DC Current Gain vs. Collector Current (I)

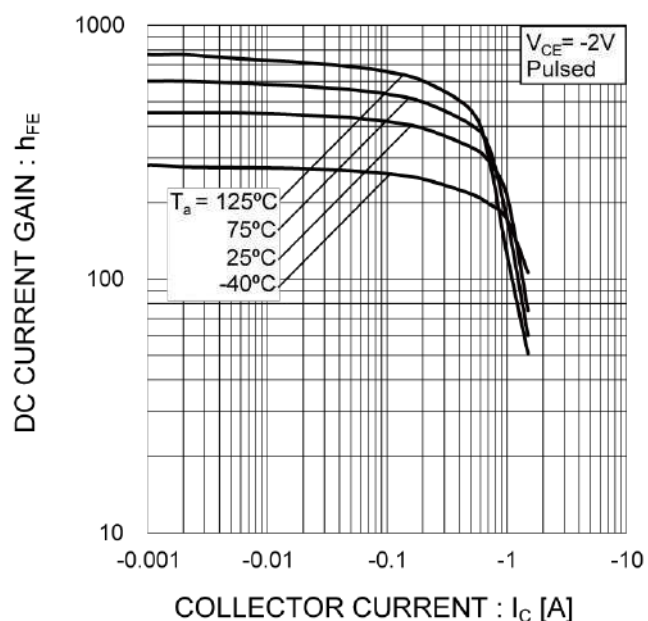
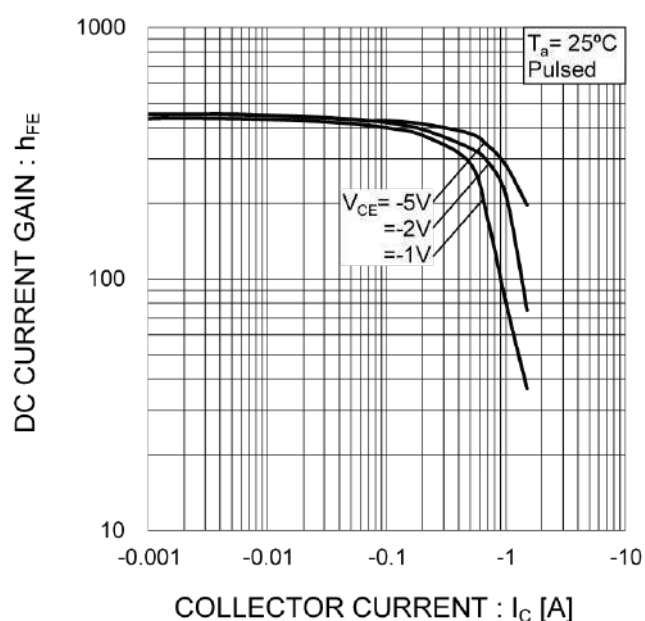


Fig.4 DC Current Gain vs. Collector Current (II)



Typical Characteristics

Fig.5 Collector-Emitter Saturation Voltage vs. Collector Current (I)

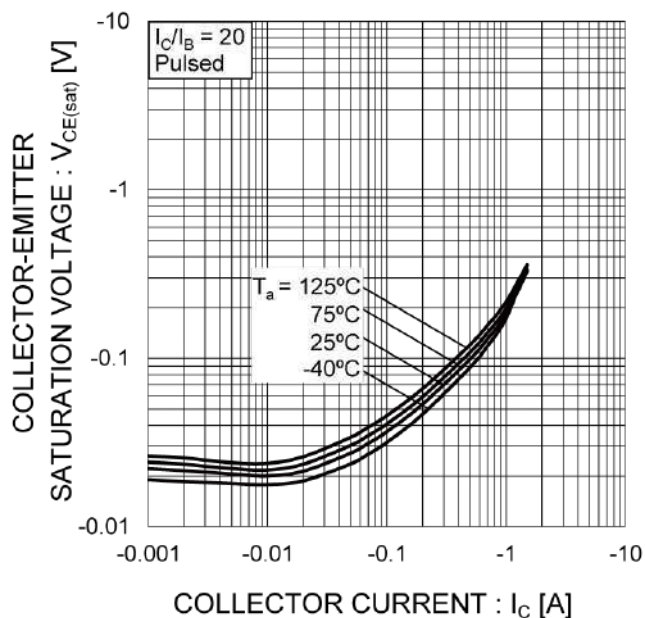


Fig.6 Collector-Emitter Saturation Voltage vs. Collector Current (II)

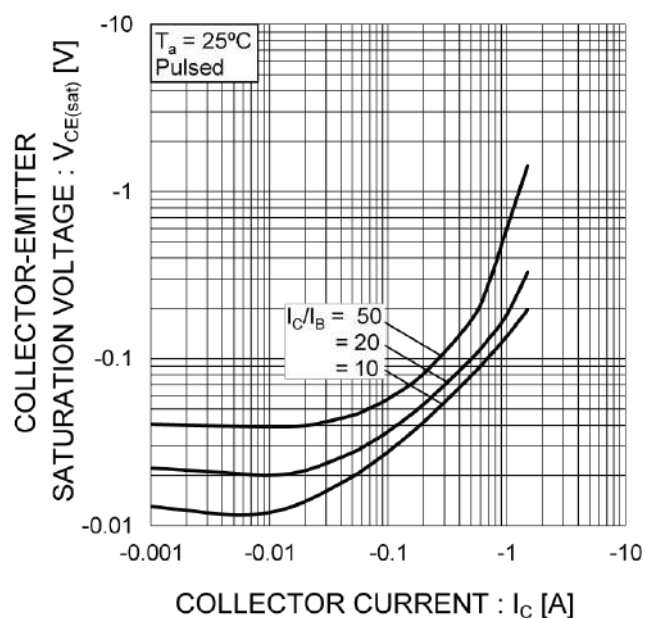


Fig.7 C_{ob} vs. Collector-Base voltage, C_{ib} vs. Emitter-Base voltage

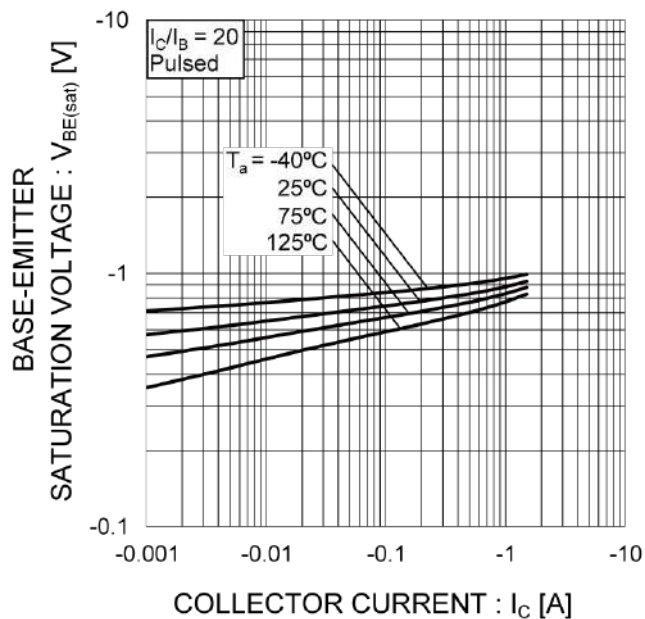
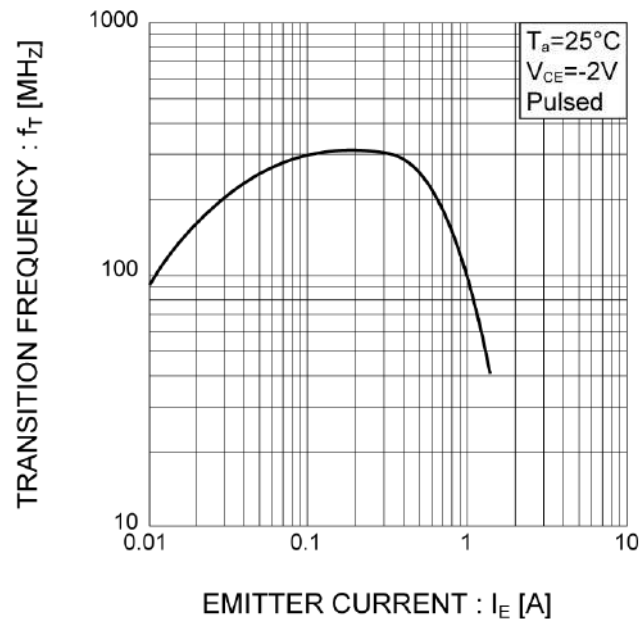


Fig.8 Gain Bandwidth Product vs. Emitter Current



Typical Characteristics

Fig.9 Emitter Input Capacitance vs.
Emitter-Base Voltage
Collector Output Capacitance vs.
Collector-Base Voltage

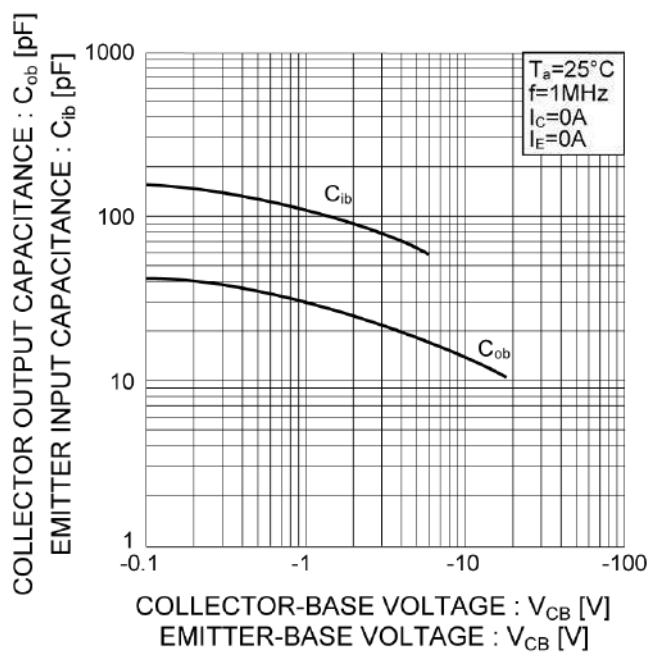
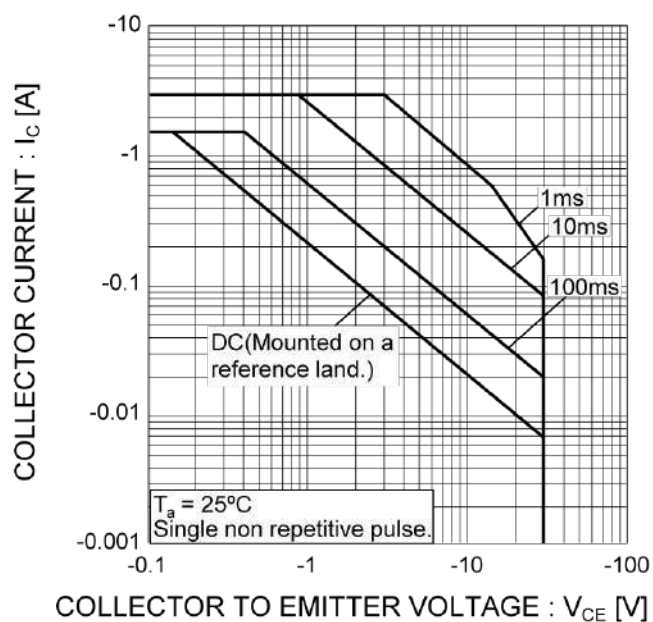
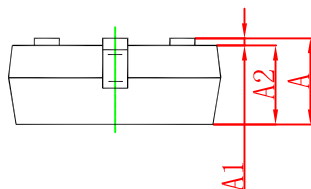
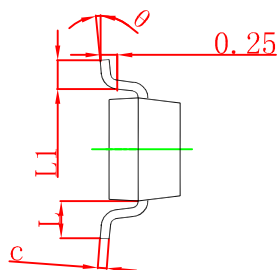
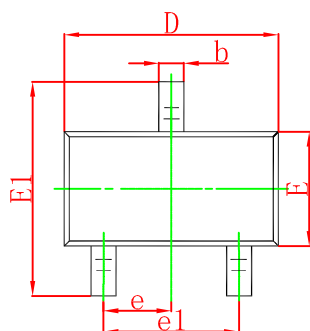


Fig.10 Safe Operating Area

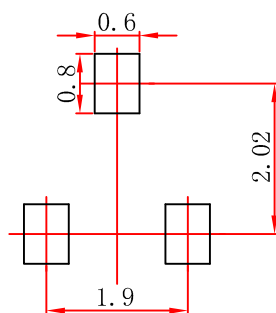


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout

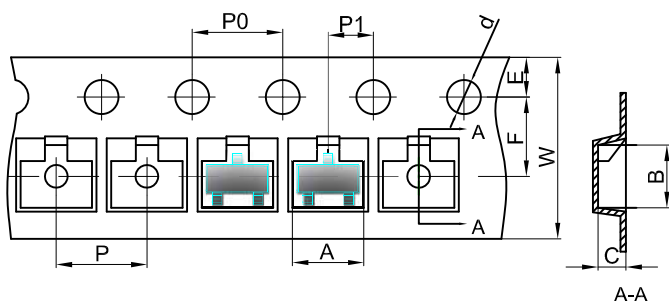


Note:

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

SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

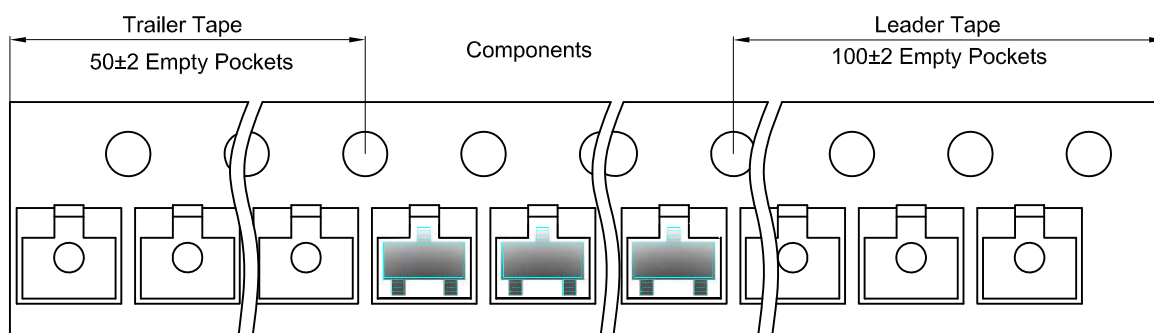


Packaging Description:

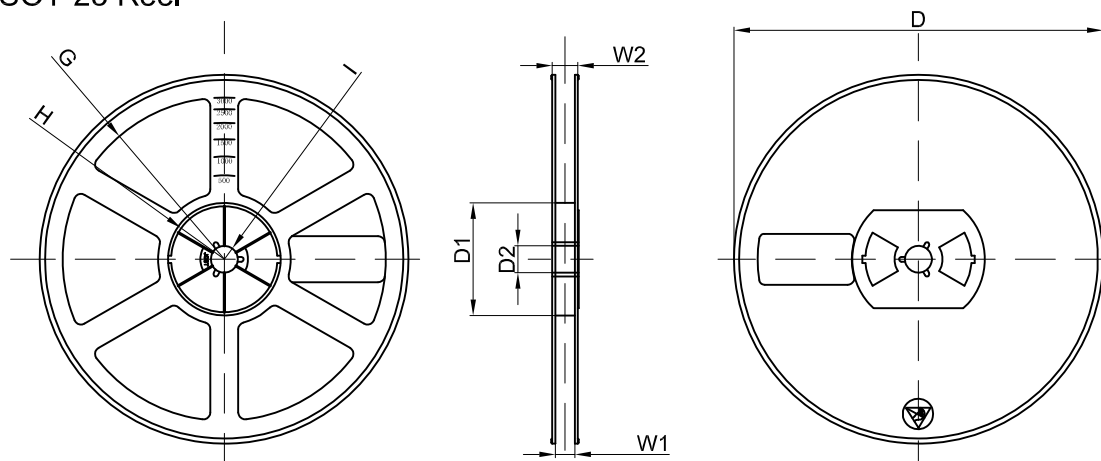
SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in 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	438×438×220	