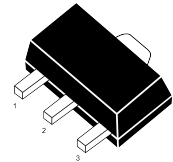


NPN Transistors

■ Features

- Low collector-to-emitter saturation voltage.
- Large current capacity and wide ASO.
- Fast switching speed.
- Complementary to 2SB1123

SOT-89-3L



1. BASE
2. EMITTER
3. COLLECTOR



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

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	60	V
Collector - Emitter Voltage	V_{CE0}	50	
Emitter - Base Voltage	V_{EB0}	6	
Collector Current - Continuous	I_C	2	A
Collector Current - Pulse	I_{CP}	4	
Collector Power Dissipation (Note.1)	P_C	0.5	W
		1.3	
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	

Note.1: Mounted on ceramic board (250mm² × 0.8mm)

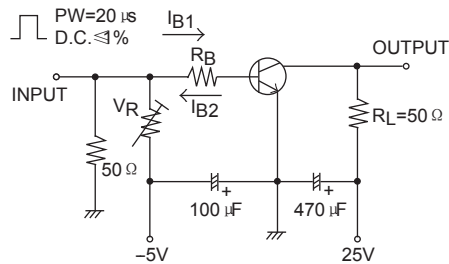
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100 \mu\text{A}$, $I_E = 0$	60			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}$, $R_{BE} = \infty$	50			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_C = 0$	6			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 50 \text{ V}$, $I_E = 0$			0.1	μA
Emitter cut-off current	I_{EBO}	$V_{EB} = 4 \text{ V}$, $I_C = 0$			0.1	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$		0.15	0.4	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 1 \text{ A}$, $I_B = 50 \text{ mA}$		0.9	1.2	
DC current gain	h_{FE}	$V_{CE} = 2 \text{ V}$, $I_C = 100 \text{ mA}$	100		560	
		$V_{CE} = 2 \text{ V}$, $I_C = 1.5 \text{ A}$	40			
Turn-ON Time	t_{on}	See specified Test Circuit.		60		ns
Storage Time	t_{stg}			550		
Fall Time	t_f			30		
Collector output capacitance	C_{ob}	$V_{CB} = 10 \text{ V}$, $I_E = 0$, $f = 1 \text{ MHz}$		12		pF
Transition frequency	f_T	$V_{CE} = 10 \text{ V}$, $I_C = 50 \text{ mA}$		150		MHz

■ Classification of $h_{FE}(1)$

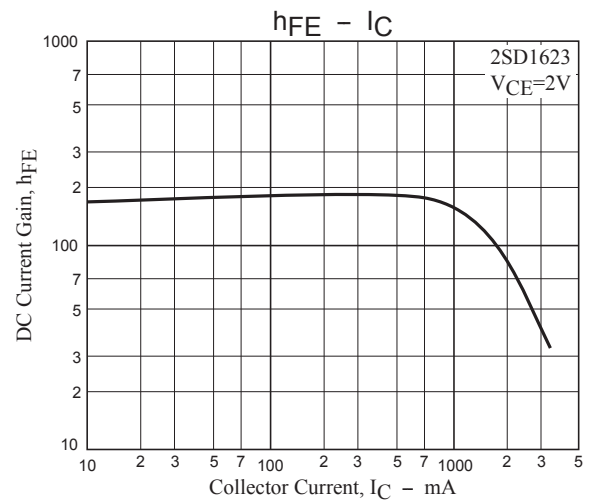
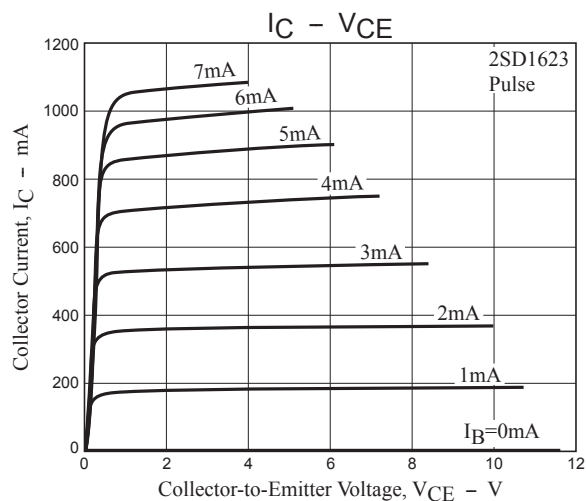
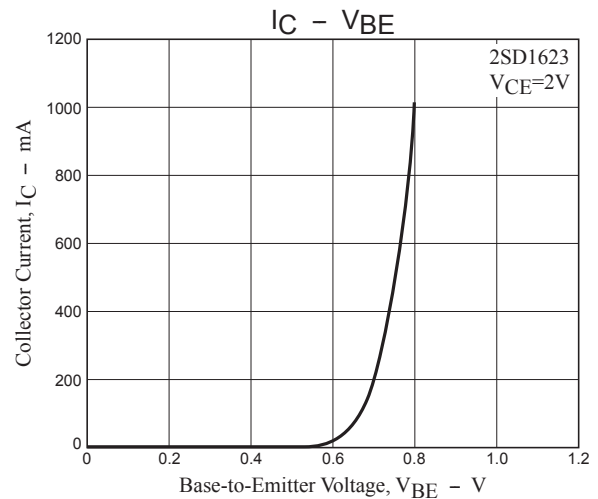
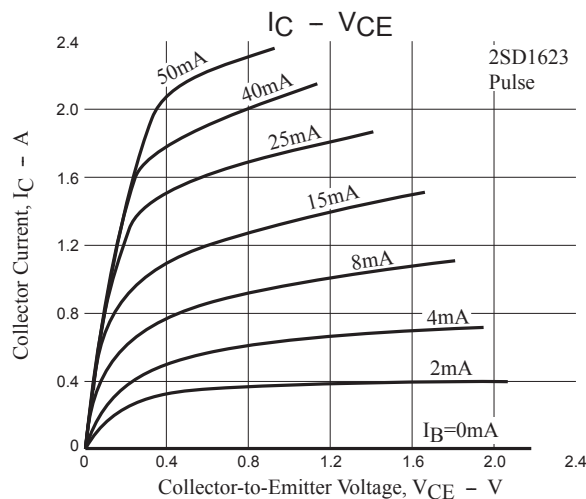
Type	2SD1623-R	2SD1623-S	2SD1623-T	2SD1623-U
Range	100-200	140-280	200-400	280-560
Marking	DF R	DF S	DF T	DF U

Switching Time Test Circuit

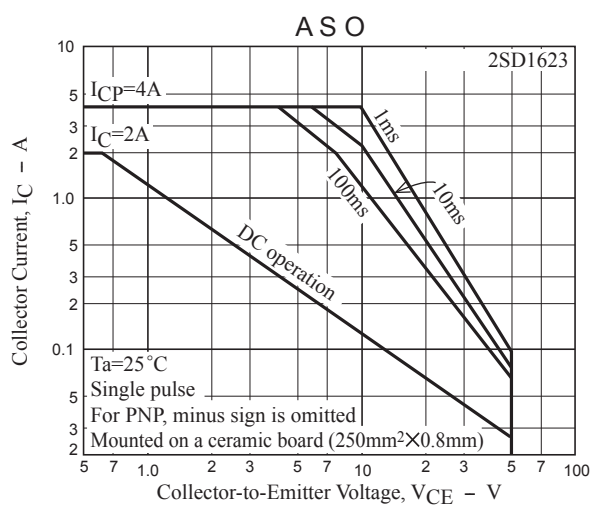
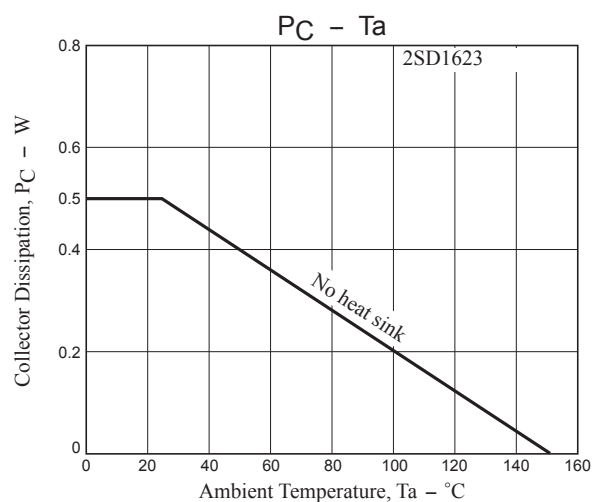
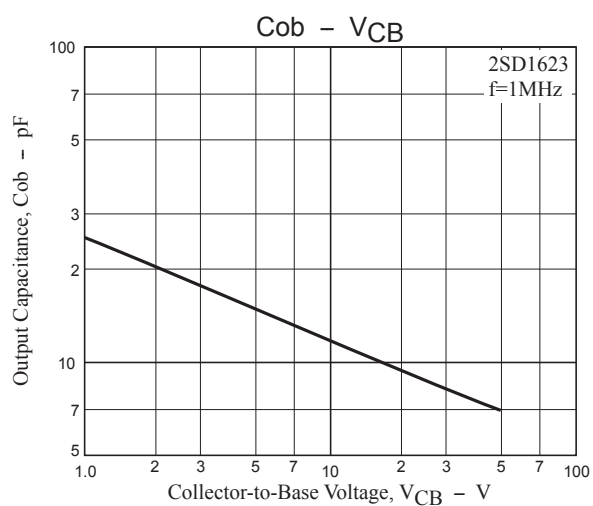
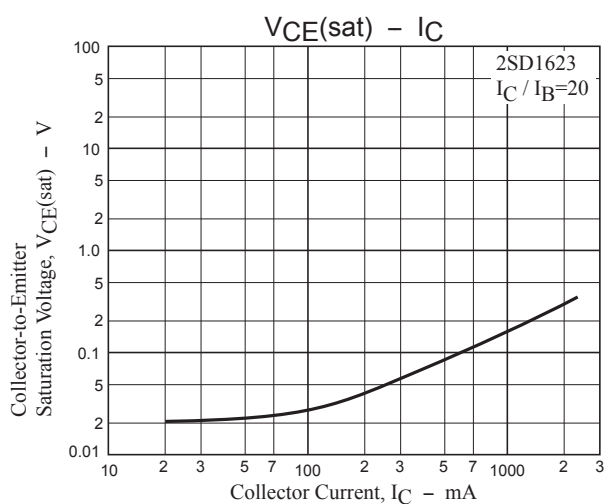
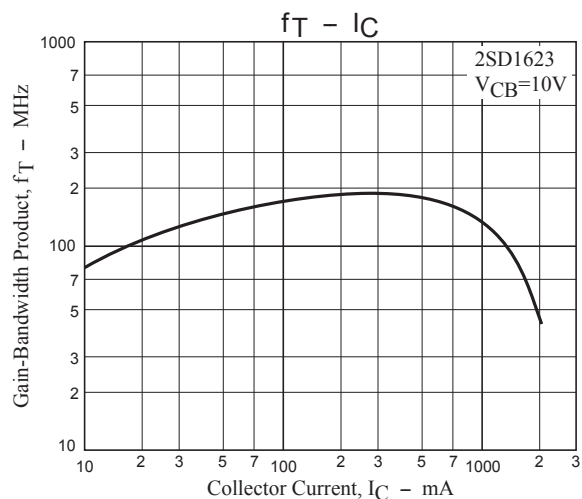


$I_C = 10I_{B1} = -10I_{B2} = 500\text{mA}$
(For PNP, the polarity is reversed)

Typical Characteristics

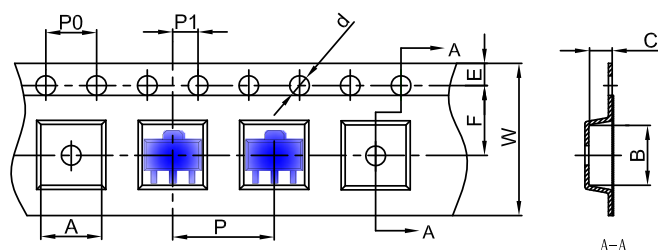


Typical Characteristics



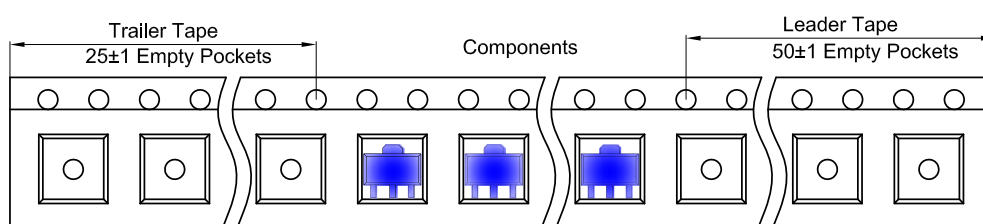
SOT-89-3L Tape and Reel

SOT-89-3L Embossed Carrier Tape

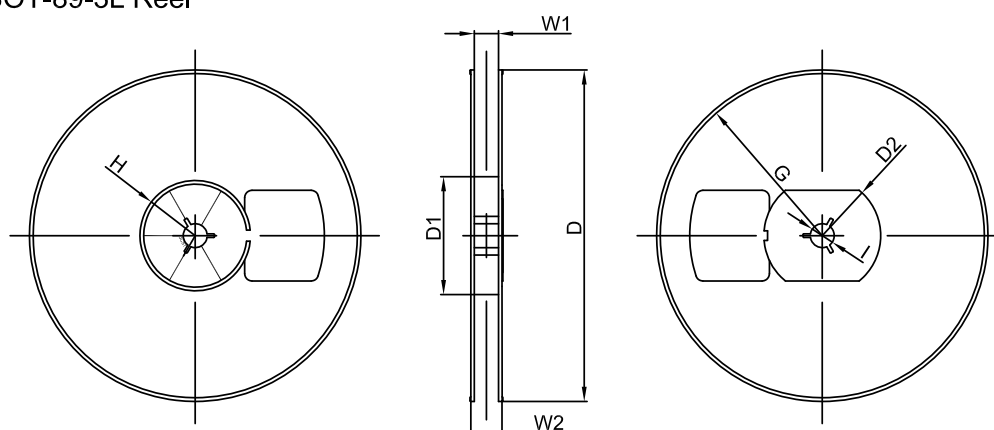


Dimensions are in millimeter										
Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-89-3L	4.85	4.45	1.85	Ø1.50	1.75	5.50	4.00	8.00	2.00	12.00

SOT-89-3L Tape Leader and Trailer

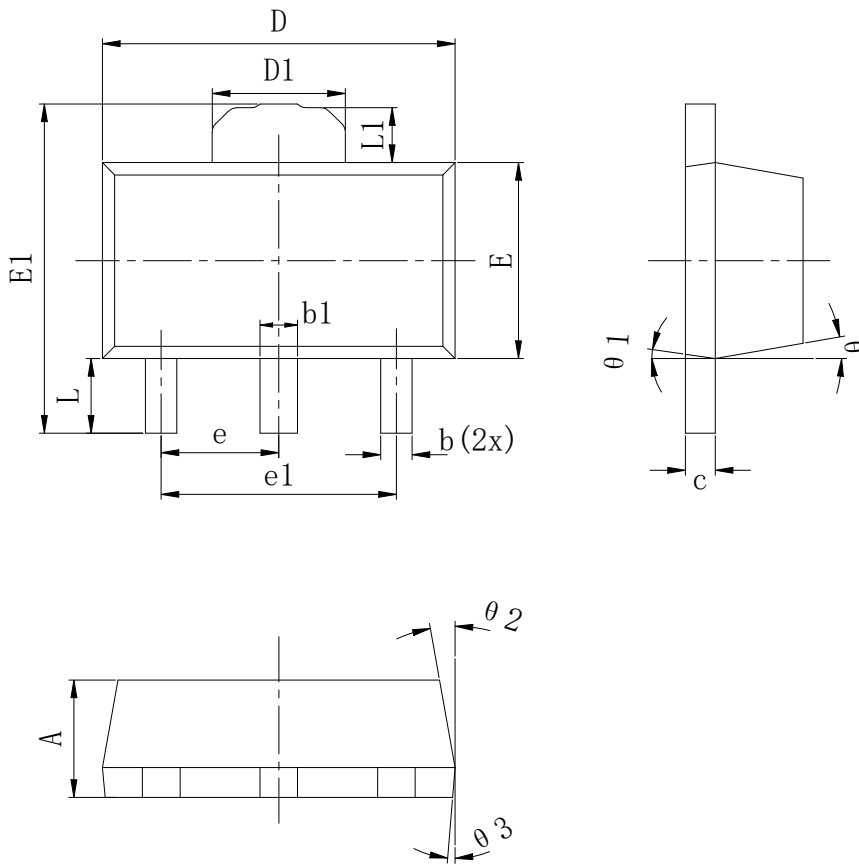


SOT-89-3L Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø180.00	60.00	R32.00	R86.50	R30.00	Ø13.00	13.20	16.50

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
1000 pcs	7 inch	10,000 pcs	203×203×195	40,000 pcs	438×438×220	



SYMBOL	MILLIMETER		
	MIN	TYP.	MAX
A	1.400	1.500	1.600
b	0.320	0.400	0.520
b1	0.400	0.480	0.580
c	0.350	0.381	0.440
D	4.400	4.500	4.600
D1	1.700REF		
E	2.400	2.500	2.600
E1	4.050	4.200	4.350
e	1.500TYP.		
e1	3.000TYP.		
L	0.800	0.950	1.200
L1	0.700REF		
θ	10° REF		
θ 1	8° REF		
θ 2	10° REF		
θ 3	5° REF		

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