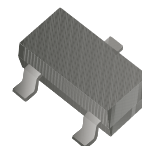


General Purpose Transistors NPN

RoHS Device

Halogen Free



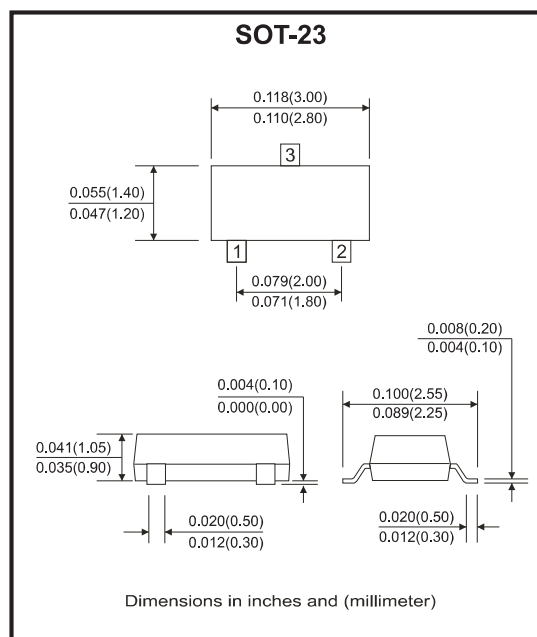
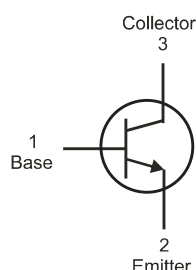
Features

- Epoxy meets UL-94 V-0 flammability rating.
- Moisture sensitivity Level 1.
- High conductance.
- Surface mount package ideally suited for automatic insertion.

Mechanical data

- Case: SOT-23, molded plastic.
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102.

Circuit Diagram

Maximum Ratings (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Minimum collector-emitter voltage	$I_C = 100\mu\text{Adc}$, $I_B = 0$	V_{CE0}	25	V
Minimum collector-base voltage	$I_C = 100\mu\text{Adc}$, $I_E = 0$	V_{CBO}	40	V
Minimum emitter-base voltage	$I_E = 100\mu\text{Adc}$, $I_C = 0$	V_{EBO}	5	V
Collector current		I_C	1.5	A
Maximum collector-emitter cut-off current	$V_{CE} = 20\text{Vdc}$	I_{CEO}	100	nAdc
Maximum collector-base cut-off current	$V_{CB} = 40\text{Vdc}$	I_{CBO}	100	
Maximum emitter-base cut-off current	$V_{EB} = 5\text{Vdc}$	I_{EBO}	100	
Collector power dissipation		P_C	300	mW
Operation junction temperature range		T_J	-55 to +150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^{\circ}\text{C}$

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Electrical Characteristics (at $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Max	Unit
Collector-emitter voltage	V_{CEO}	$I_C = 100\mu\text{Adc}$, $I_B = 0$	25		V
Collector-base voltage	V_{CBO}	$I_C = 100\mu\text{Adc}$, $I_E = 0$	40		V
Emitter-base voltage	V_{EBO}	$I_E = 100\mu\text{Adc}$, $I_C = 0$	5		V
Collector-emitter cut-off current	I_{CEO}	$V_{CE} = 20\text{Vdc}$		100	nAdc
Collector-base cut-off current	I_{CBO}	$V_{CB} = 40\text{Vdc}$		100	nAdc
Emitter-base cut-off current	I_{EBO}	$V_{EB} = 5\text{V}$		100	nAdc
DC current gain	$h_{FE(1)}$	$I_C = 100\text{mA}$, $V_{CE} = 1\text{Vdc}$	120	350	
	$h_{FE(2)}$	$I_C = 800\text{mA}$, $V_{CE} = 1\text{Vdc}$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 800\text{mA}$, $I_B = 80\text{mA}$		0.5	Vdc
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C = 800\text{mA}$, $I_B = 80\text{mA}$		1.2	Vdc
Small-signal characteristics					
Transition frequency	f_T	$I_C = 50\text{mA}$, $V_{CE} = 10\text{Vdc}$, $f = 30\text{MHz}$	100		MHz

Classification of h_{FE} (1)

Rank	L	H
Range	120-200	200-350

Rating and Characteristic Curves

Fig.1 - Static Characteristic

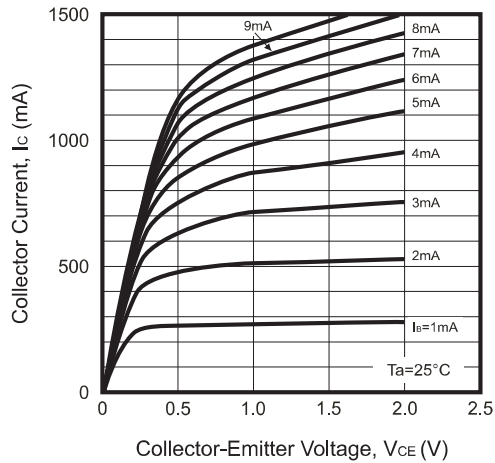


Fig.2 - DC Current Gain

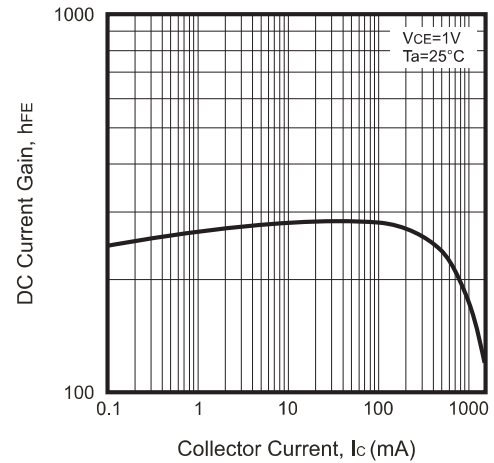


Fig.3 - Collector-Emitter Saturation Voltage

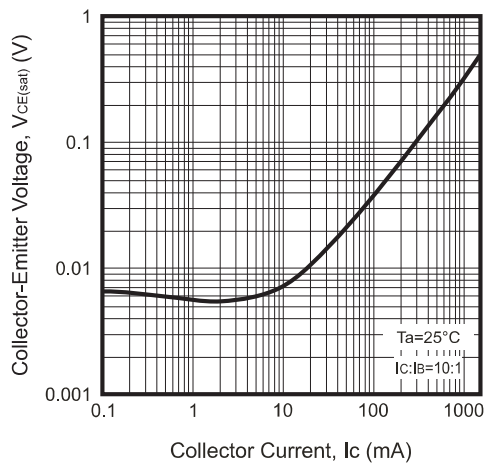


Fig.4 - Base-Emitter Saturation Voltage

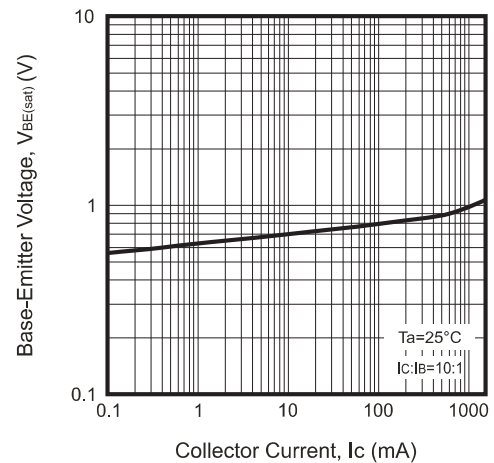


Fig.5 - Base-Emitter On Voltage

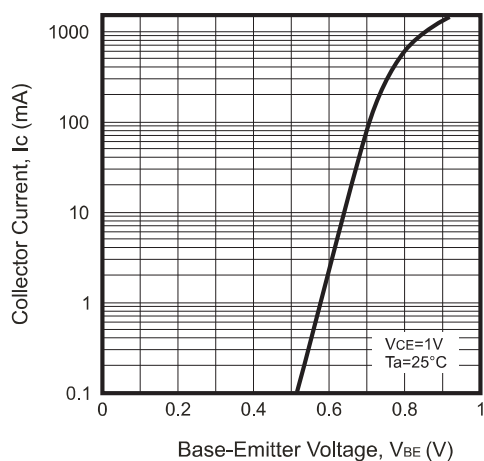
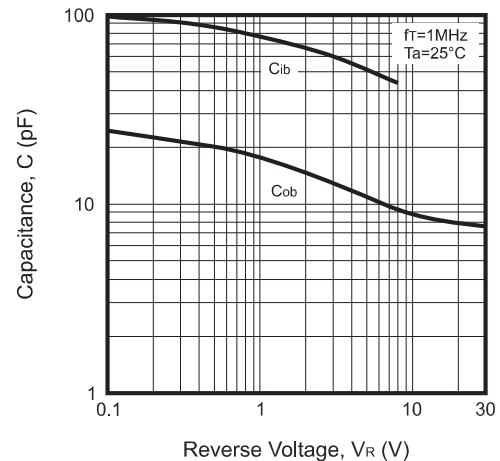


Fig.6 - $C_{ob}/C_{ib} - V_{CB}/V_{EB}$

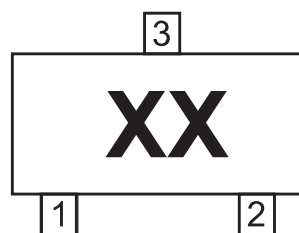


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Marking Code

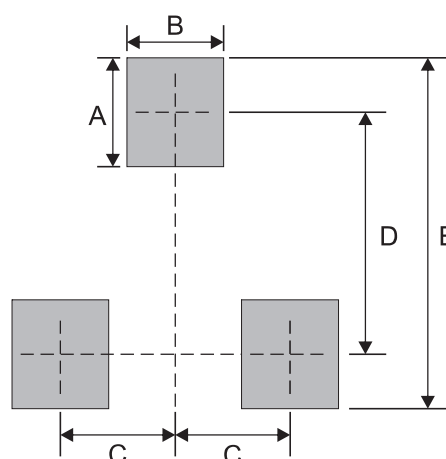
Part Number	Marking Code
SS8050-L	Y1L
SS8050-H	Y1



xx/xxx = Product type marking code

Suggested P.C.B. PAD Layout

SIZE	SOT-23	
	(mm)	(inch)
A	0.90	0.035
B	0.80	0.031
C	0.95	0.037
D	2.00	0.079
E	2.90	0.114

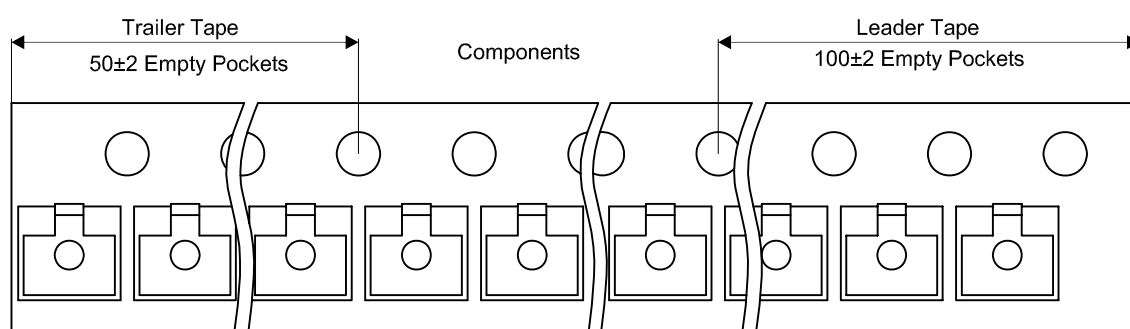
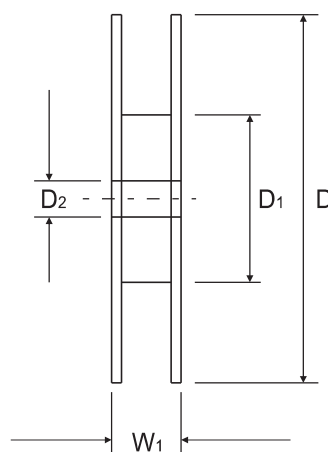
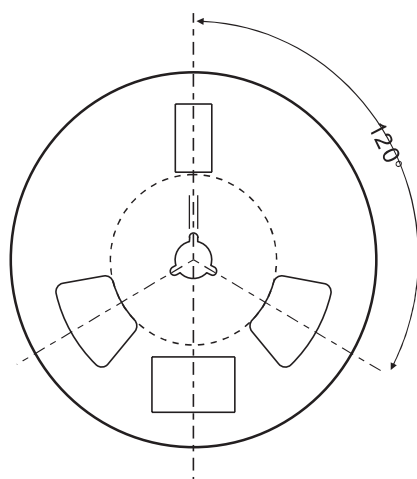
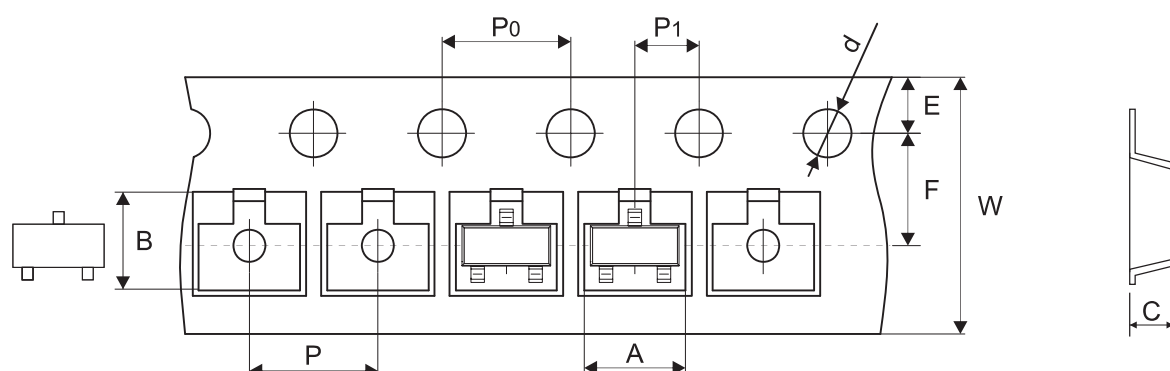


Note: 1. The pad layout is for reference purposes only.

Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
SOT-23	3,000	7

Reel Taping Specification



SOT-23	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	3.15 ± 0.10	2.77 ± 0.10	1.22 ± 0.10	$1.50 + 0.10 - 0.00$	178.00 ± 1.00	54.60 ± 1.00	13.30 ± 1.00
	(inch)	0.124 ± 0.004	0.109 ± 0.004	0.048 ± 0.004	$0.059 + 0.004 - 0.000$	7.008 ± 0.039	2.150 ± 0.039	0.524 ± 0.039

SOT-23	SYMBOL	E	F	P	P0	P1	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	$8.00 + 0.30 - 0.10$	11.10 ± 0.20
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	$0.315 + 0.012 - 0.004$	0.437 ± 0.008

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