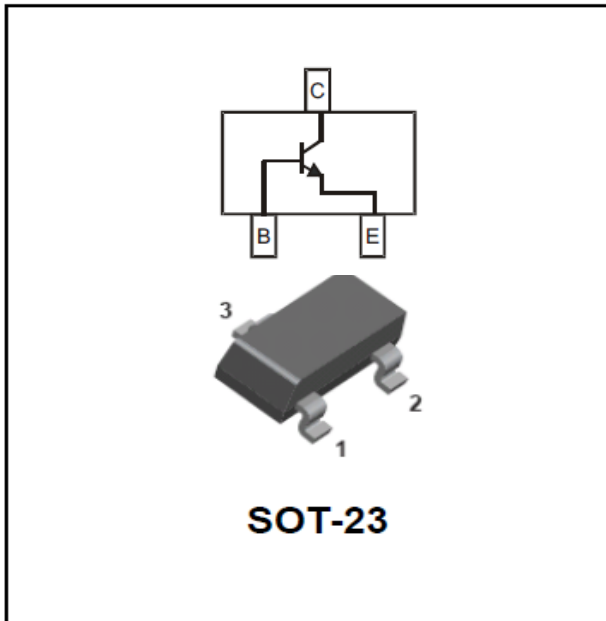


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- Marking: J3

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V		40
Collector-Emitter Voltage	V_{CEO}	V		25
Emitter-Base Voltage	V_{EBO}	V		5
Collector Current	I_C	mA		500
Collector Power Dissipation	P_C	mW		300
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		416
Operation Junction Temperature	T_J	°C		-55 to +150
Storage Temperature	T_{stg}	°C		-55 to +150

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=0.1mA, I_E=0$	40		
Collector-emitter breakdown voltage	V_{CEO^*}	V	$I_C=1mA, I_B=0$	25		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=0.1mA, I_C=0$	5		
Collector-Base cut-off current	I_{CBO}	uA	$V_{CB}=40V, I_E=0$			0.1
Collector-Emitter cut-off current	I_{CEO}	uA	$V_{CE}=20V, I_B=0$			0.1
Emitter-Base cut-off current	I_{EBO}	uA	$V_{EB}=5V, I_C=0$			0.1
DC current gain	$h_{FE(1)}$	V	$V_{CE}=1V, I_C=50mA$	120		400
	$h_{FE(2)}$	V	$V_{CE}=1V, I_C=500mA$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$			0.6
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=500mA, I_B=50mA$			1.2
Transition frequency	f_T	MHz	$V_{CE}=6V, I_C=20mA, f=30MHz$	150		



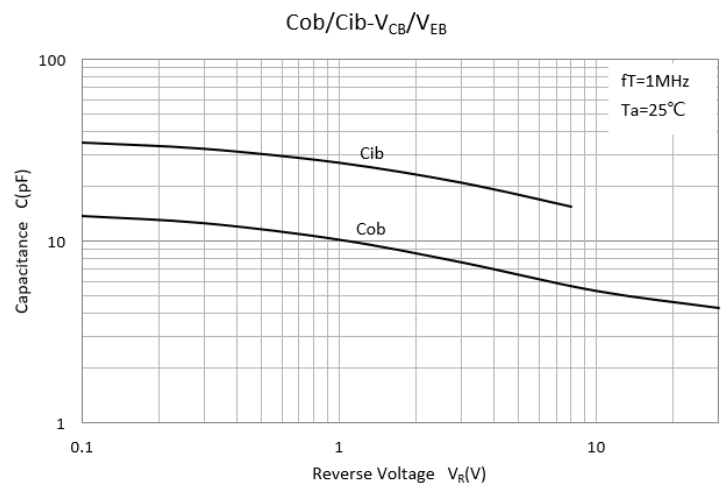
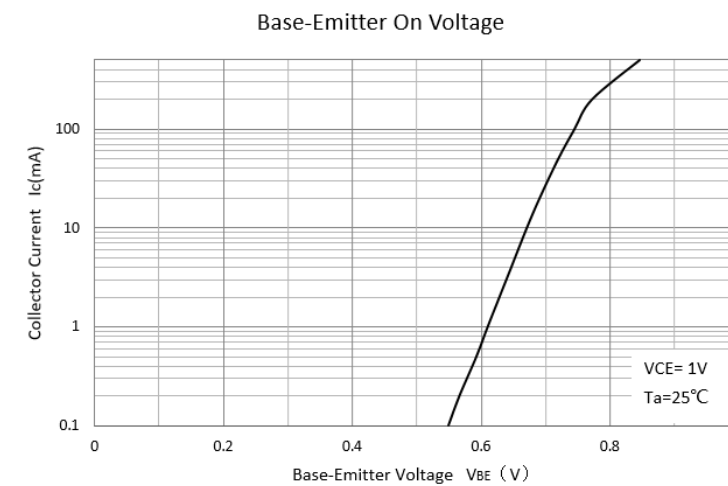
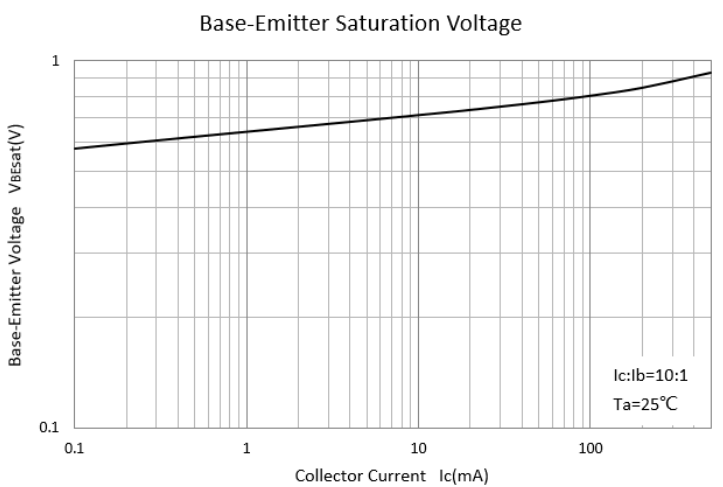
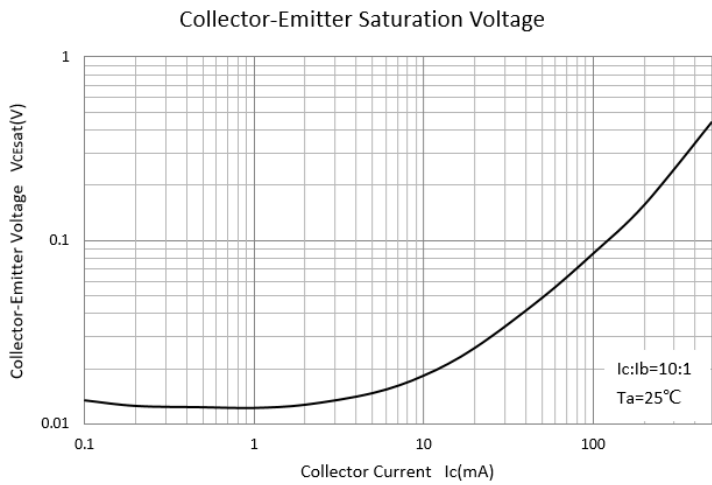
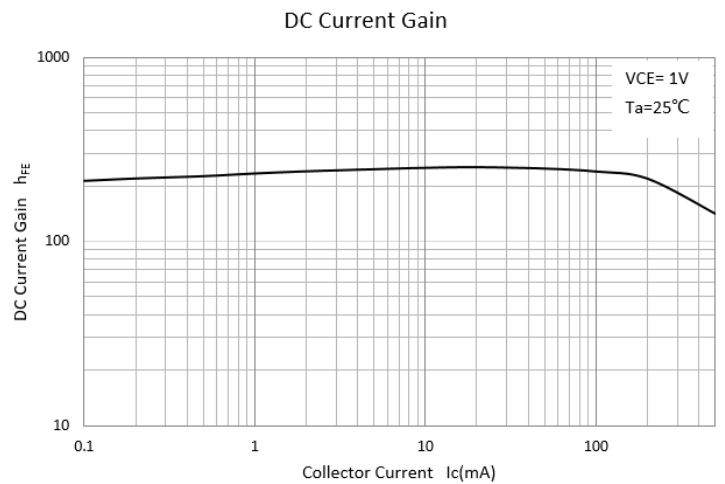
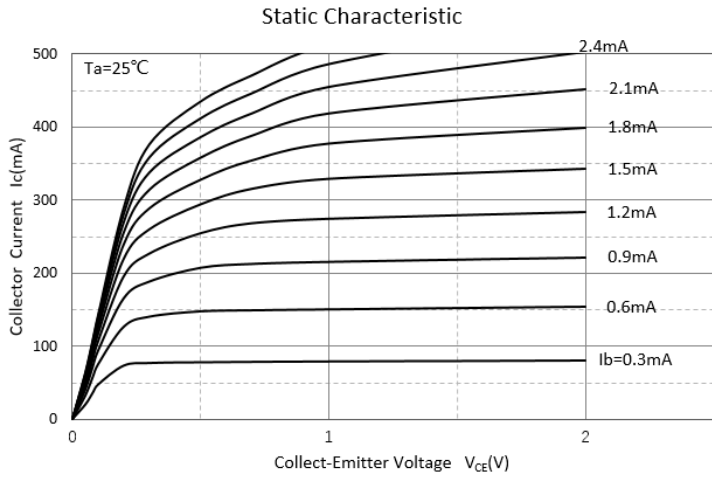
■ CLASSIFICATION OF HFE (1)

RANK	L	H	J
RANGE	120-200	200-350	300-400

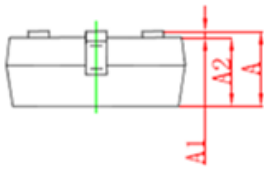
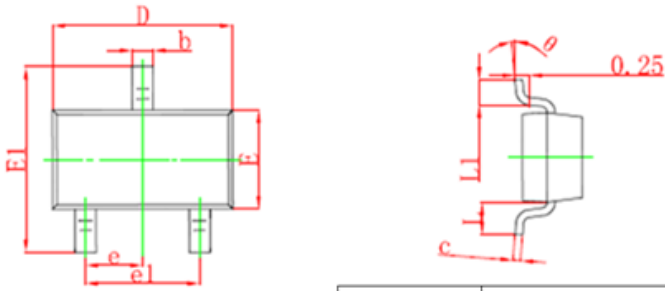
■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
S9013	F2	Approximate 0.008	3000	30000	120000	7" reel

■ Characteristics (Typical)

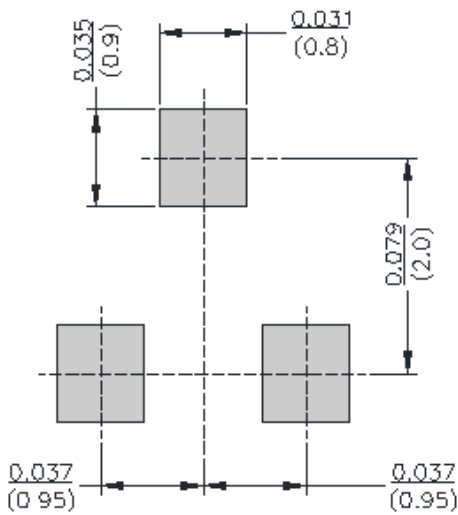


■SOT-23 Package Outline Dimensions



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	0.100	0.200	0.004	0.008
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	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

■SOT-23 Soldering Footprint





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The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

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