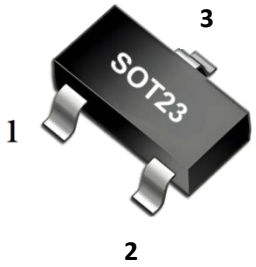
S9013

NPN SILICON TRANSISTOR

FEATURES

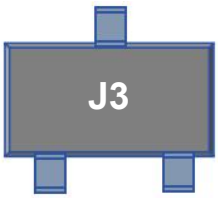
* High Collector Current.
* Complementary to S9012.
* Excellent hFE Linearity.



1. BASE
2. EMITTER
3. COLLECTOR

MARKING

Type Code: Marking: J3



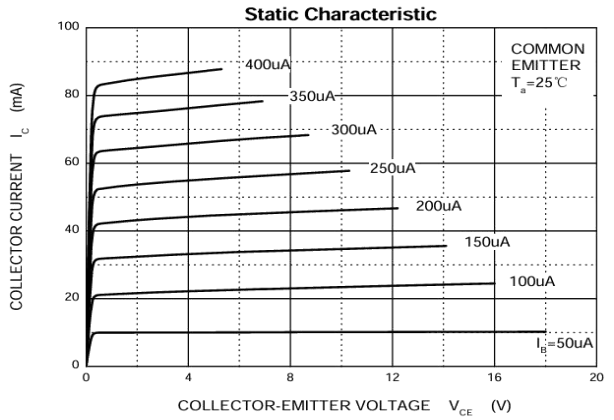
ABSOLUTE MAXIMUM RATINGS (Tc=25°C, unless otherwise specified)

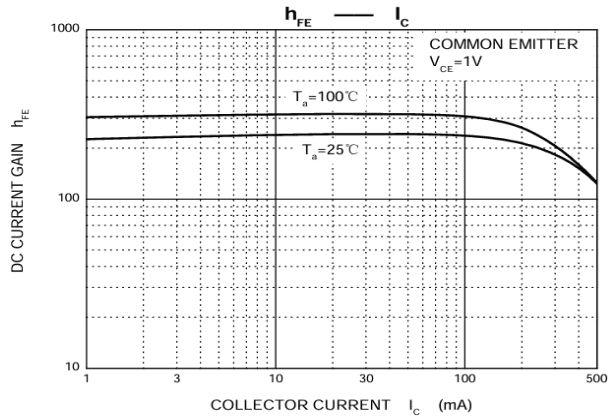
SYMBOL	PARAMETER	VALUE	UNIT
V_{CBO}	Collector-base voltage	40	V
V_{CEO}	Collector-emitter voltage	25	V
V_{EBO}	Emitter-base voltage	5	V
I_C	Collector current	0.5	A
P_C	Collector Power Dissipation	300	mW
T_j	Junction Temperature	150	°C
Tstg	Storage Temperature	-55~150	°C
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	416	°C/W

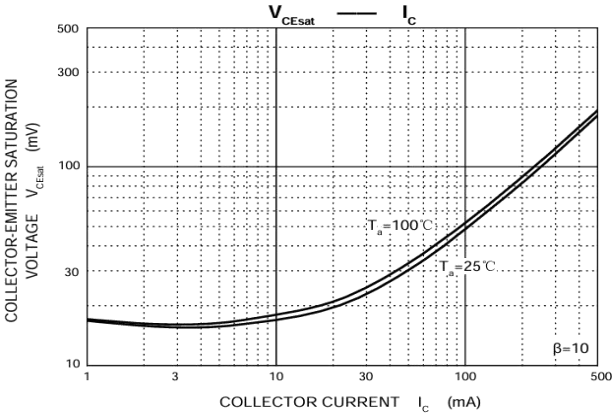
ELECTRICAL CHARACTERISTICS (Tc=25°C, unless otherwise noted)

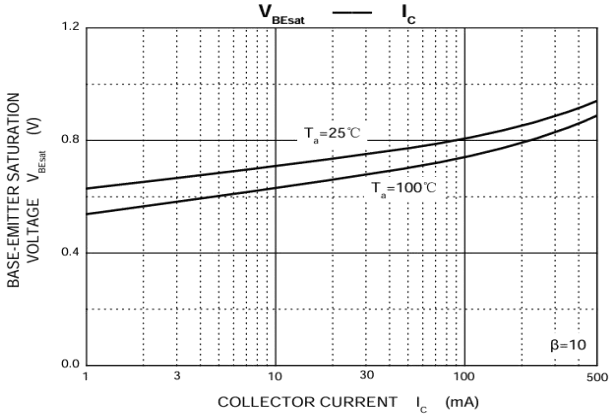
PARAMETER	SYMBOL		TEST CONDITIONS	MIN	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$		I_C=100μA,I_E=0	40		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$		I_C=1mA,I_B=0	25		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$		I_E=100μA,I_C=0	5		V
Collector cutoff current	I_{CBO}		V_{CB}=40V,I_E=0		0.1	μA
Collector cut-off current	I_{CEO}		V_{CE}=20V,I_B=0		0.1	μA
Emitter cut-off current	I_{EBO}		V_{EB}=5V,I_C=0		0.1	μA
DC Current Gain （CLASSIFICATION OF hFE1）	h_{FE1}	A	V_{CE}=1V,I_C=50mA	120	200	
		B		200	350	
		C		300	400	
	h_{FE2}		V_{CE}=1V,I_C=500mA	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$		I_C=500mA,I_B=50mA		0.6	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		I_C=500mA,I_B=50mA		1.2	V
Base-emitter voltage	V_{BE}		VCB=1V,IC=10mA		0.7	V
Transition frequency	f_T		VCE=6V, IC= 20mA, f=30MHz	150		MHz
Collector output capacitance	Cob		VCB=6V, IE=0, f=1MHz		8	pF

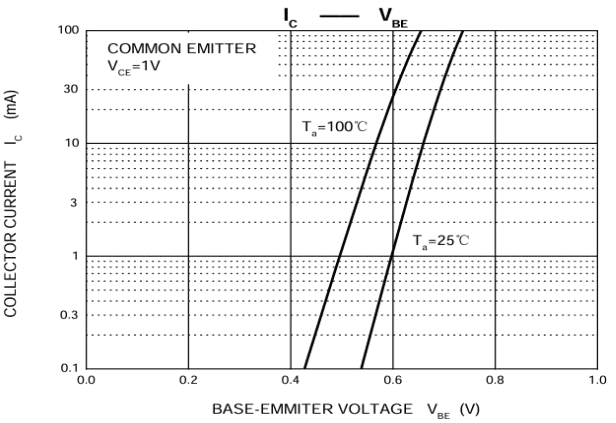
■ TYPICAL CHARACTERISTICS

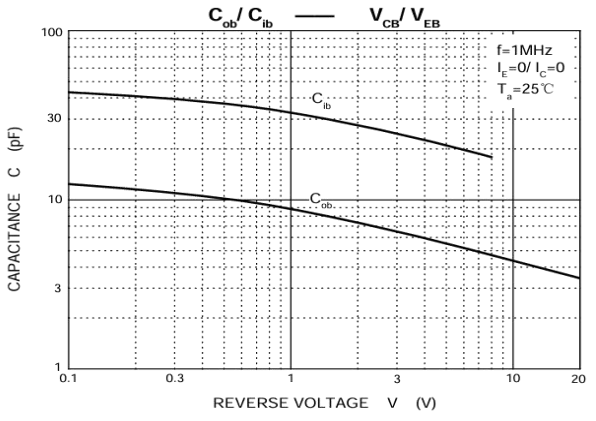


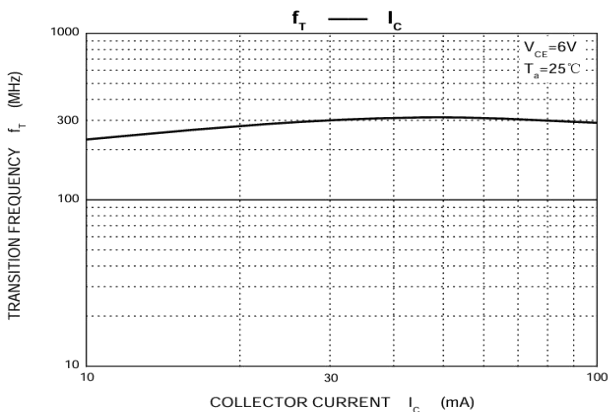


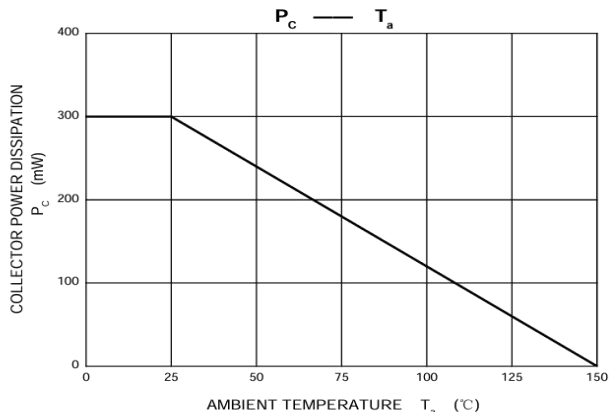




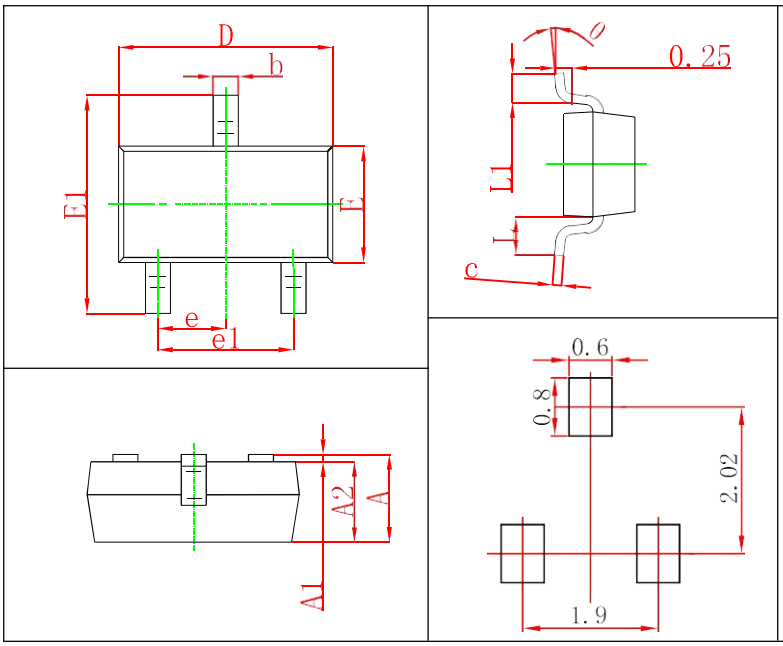








■ SOT23 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.9	1.15	0.035	0.045
A1	0	0.1	0	0.004
A2	0.9	1.05	0.035	0.041
b	0.3	0.5	0.012	0.02
c	0.08	0.15	0.003	0.006
D	2.8	3	0.11	0.118
E	1.2	1.4	0.047	0.055
E1	2.25	2.55	0.089	0.1
e	0.950 TYP		0.037 TYP	
e1	1.8	2	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.25	0.45	0.01	0.02
θ	0°	8°	0°	8°

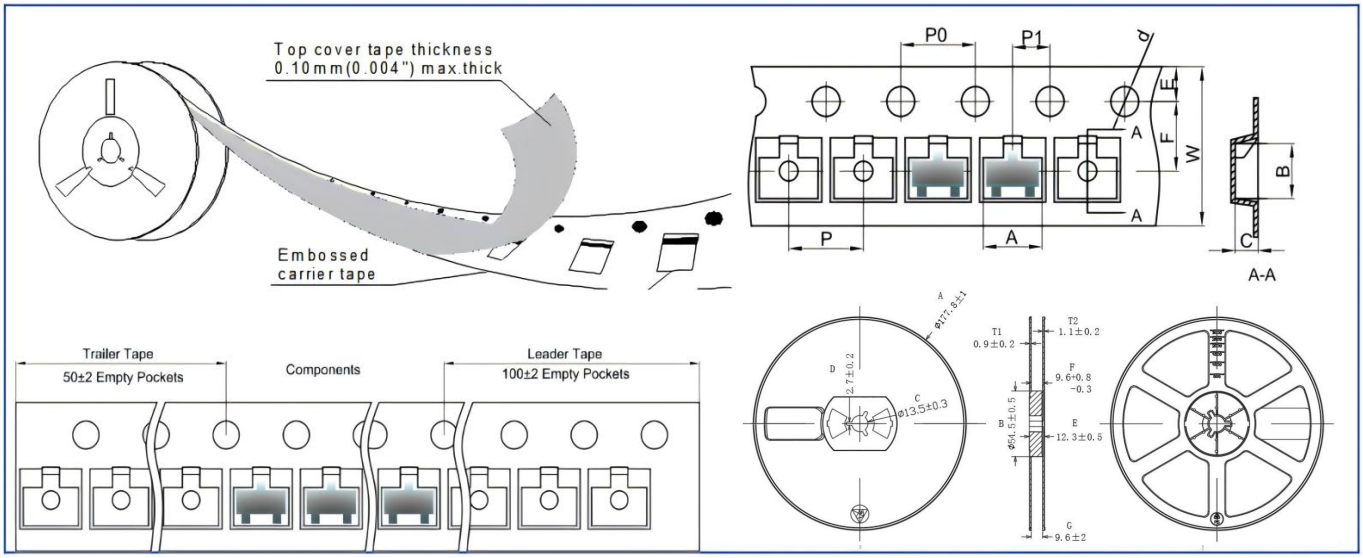
Note:

1.Controlling dimension:in millimeters.

2.General tolerance:±0.05mm.

3.The pad layout is for reference purposes only.

■ REEL PACKING



Dimensions are in millimeter										
PKG TYPE	A	B	C	d	E	F	Po	P	P1	W
SOT-23	3.17	2.77	1.22	Φ1.55	1.75	3.50	4.00	4.00	2.00	8.00

Reel Optiom	A	B	C	D	E	F	G	T1	T2	Q.TY PER REEL
7" Dia	Φ177.8	Φ54.5	Φ13.5	2.7	12.3	9.6	9.6	0.9	1.1	3000PCS