

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

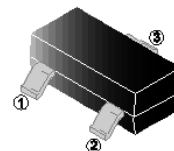
FEATURES

- Ideal for Medium Power Amplification and Switching
- Complementary to S9012-C

SOT-23

MARKING

J3



CLASSIFICATION OF h_{FE}

Product-Rank	S9013-L-C	S9013-H-C	S9013-J-C
Range	120~200	200~350	300~400

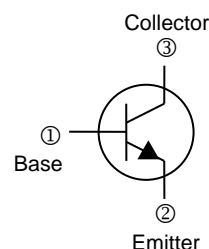
PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-23	3K	7 inch

ORDER INFORMATION

Part Number	Type
S9013-□-C	Lead (Pb)-free and Halogen-free

*□= h_{FE} Rank



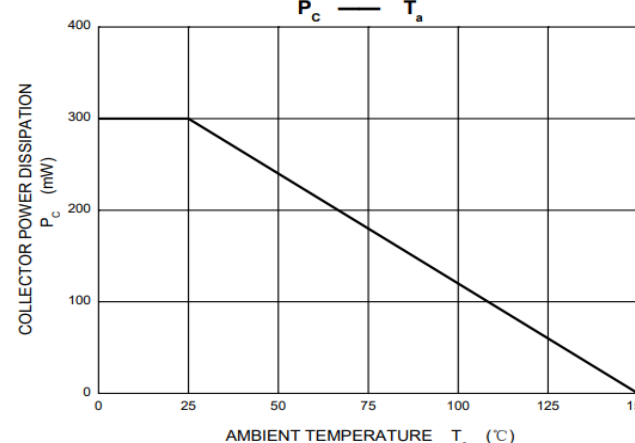
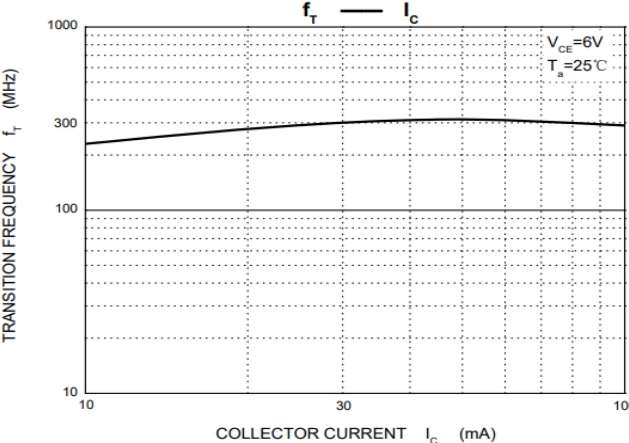
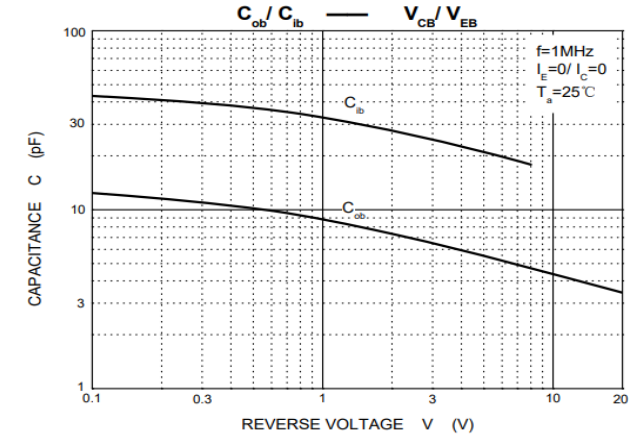
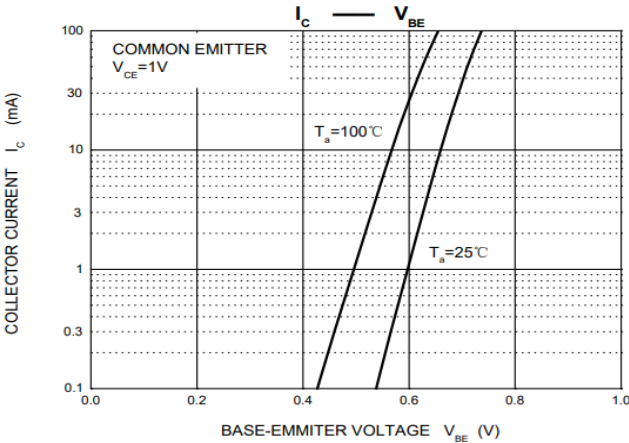
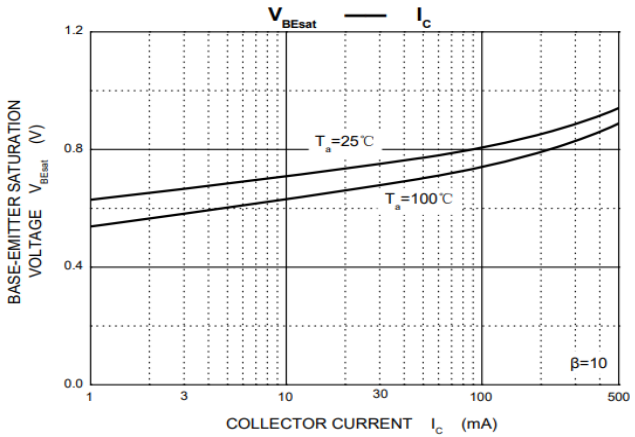
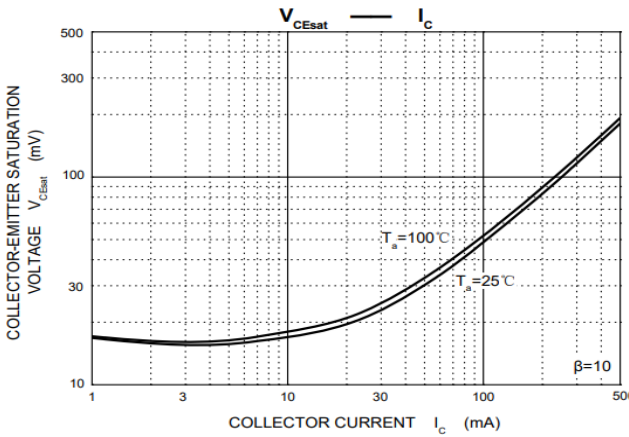
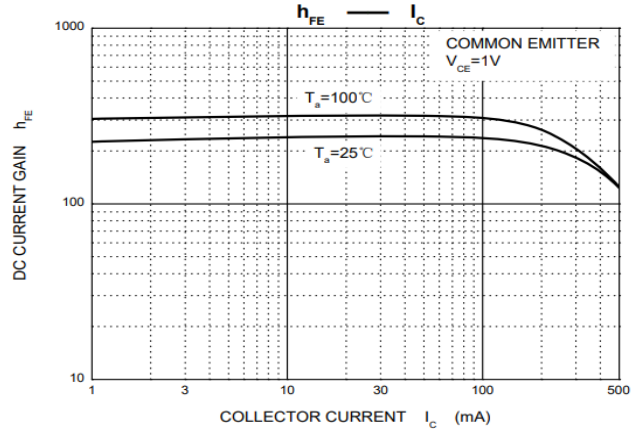
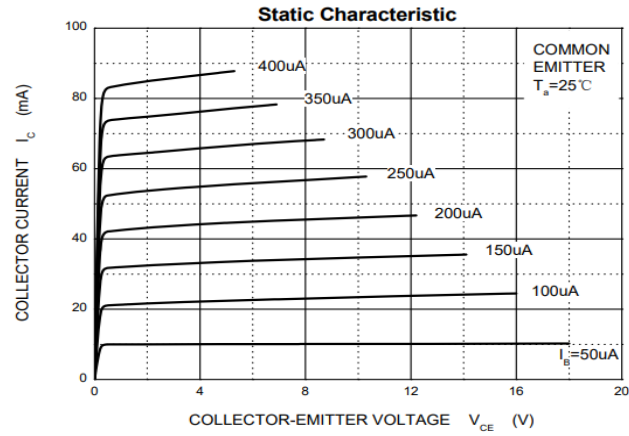
ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	40	V
Collector-Emitter Voltage	V_{CEO}	25	
Emitter-Base Voltage	V_{EBO}	5	
Collector Current	I_C	0.5	A
Collector Power Dissipation	P_C	300	mW
Thermal Resistance from Junction-Ambient	$R_{\theta JA}$	416	$^\circ\text{C}/\text{W}$
Junction & Storage Temperature	T_J, T_{STG}	150, -55~150	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($T_A=25^\circ\text{C}$ unless otherwise specified)

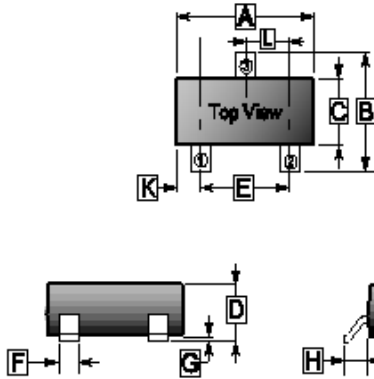
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	40	-	-	V	$I_C=100\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	25	-	-		$I_C=1\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-		$I_E=100\mu\text{A}, I_C=0$
Collector Cut-off Current	I_{CBO}	-	-	100	nA	$V_{CB}=40\text{V}, I_E=0$
Collector Cut-off Current	I_{CEO}	-	-	100		$V_{CE}=20\text{V}, I_B=0$
Emitter Cut-off Current	I_{EBO}	-	-	100		$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	h_{FE}	120	-	400		$V_{CE}=1\text{V}, I_C=50\text{mA}$
		40	-	-		$V_{CE}=1\text{V}, I_C=500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.6	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	1.2		$I_E=100\text{mA}$
Base-Emitter Voltage	V_{BE}	-	-	1.4		
Transition Frequency	f_T	-	150	-	MHz	$V_{CE}=6\text{V}, I_C=20\text{mA}, f=30\text{MHz}$
Collector Output Capacitance	C_{ob}	-	8	-	pF	$V_{CB}=6\text{V}, I_E=0, f=1\text{MHz}$

CHARACTERISTICS CURVE



PACKAGE OUTLINE DIMENSIONS

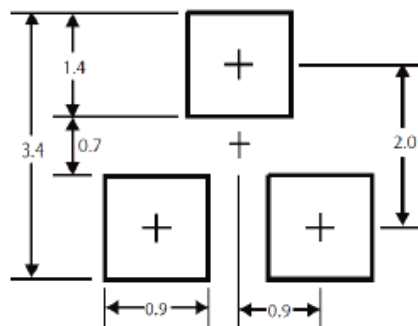
SOT-23



REF.	Millimeter	
	Min.	Max.
A	2.65	3.10
B	2.10	3.00
C	1.10	1.80
D	0.89	1.40
E	1.70	2.30
F	0.28	0.55
G	-	0.18
H	0.55 REF.	
J	0.05	0.26
K	0.60 REF.	
L	0.95 TYP.	

MOUNTING PAD LAYOUT

SOT-23



*Dimensions in millimeters