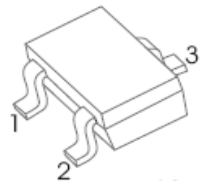
SOT-523 Plastic-Encapsulate Transistors

S9014T TRANSISTOR (NPN)

SOT－523



1. BASE
2. EMITTER
3. COLLECTOR

FEATURES

- Small Surface Mount Package

MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	50	V
V_{CEO}	Collector-Emitter Voltage	45	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current	100	mA
P_C	Collector Power Dissipation	200	mW
$R_{\Theta JA}$	Thermal Resistance From Junction To Ambient	625	℃/W
T_j	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55～+150	℃

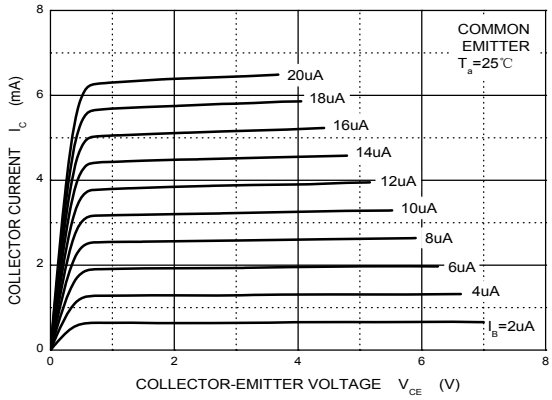
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=100μA, I_E=0	50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=100μA, I_B=0	45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	5			V
Collector cut-off current	I_{CBO}	V_{CB}=50V, I_E=0			100	nA
Collector cut-off current	I_{CEO}	V_{CE}=35V, I_B=0			100	nA
Emitter cut-off current	I_{EBO}	V_{EB}=4V, I_C=0			100	nA
DC current gain	h_{FE}	V_{CE}=5V, I_C=1mA	200		1000	
Collector-emitter saturation voltage	$V_{CE(sat)}$	I_C=100mA, I_B=5mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)}$	I_C=100mA, I_B=5mA			1	V
Base-emitter voltage	V_{BE}	V_{CE}=5V, I_C=2mA	0.58		0.7	V
Transition frequency	f_T	V_{CE}=5V,I_C=10mA , f=30MHz	150			MHz
Collector output capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz			3.5	pF

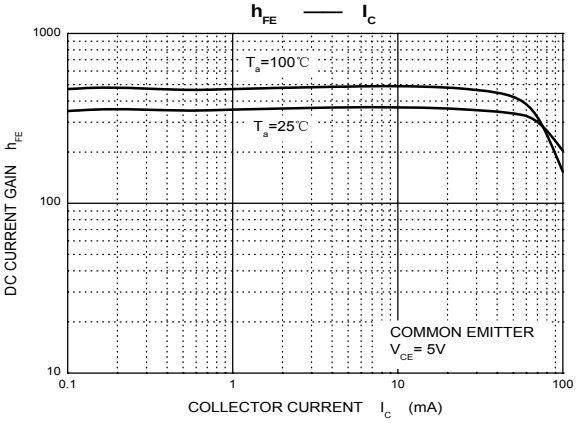
CLASSIFICATION OF h_{FE}

RANK	L	H
RANGE	200－450	450－1000
MARKING	**J6**	**J7**

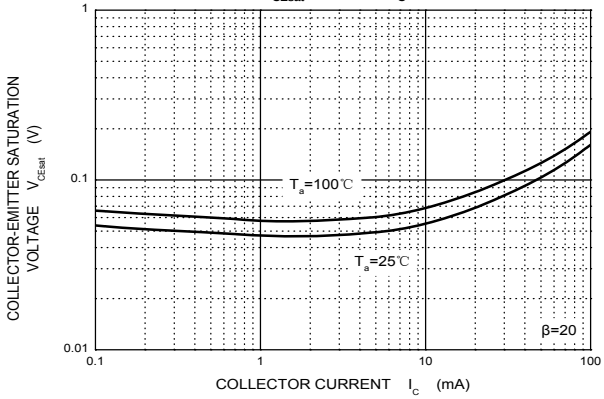
Static Characteristic



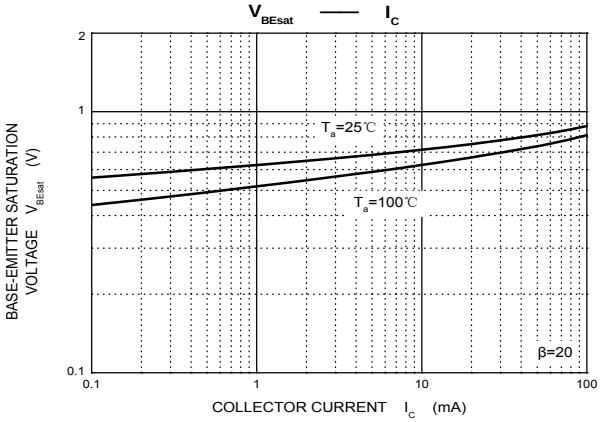
h_{FE} — I_C



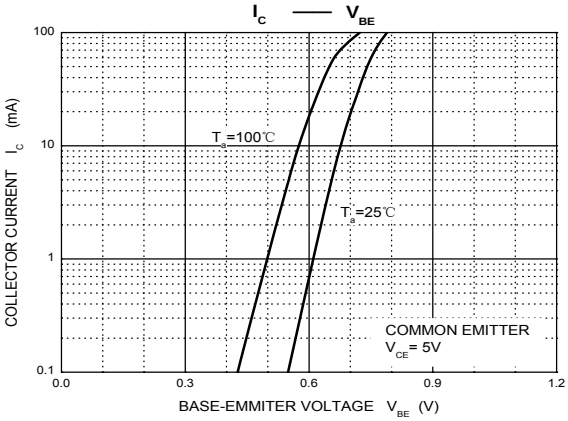
V_{CEsat} — I_C



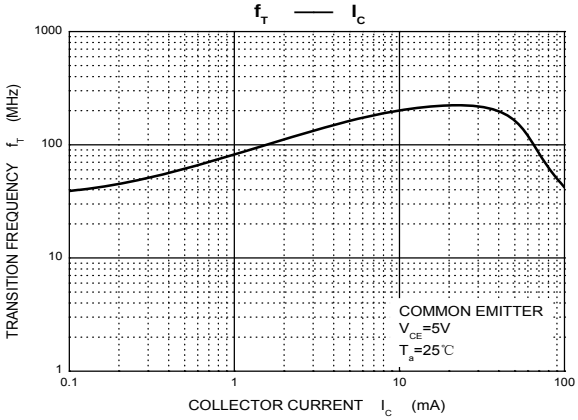
V_{BEsat} — I_C



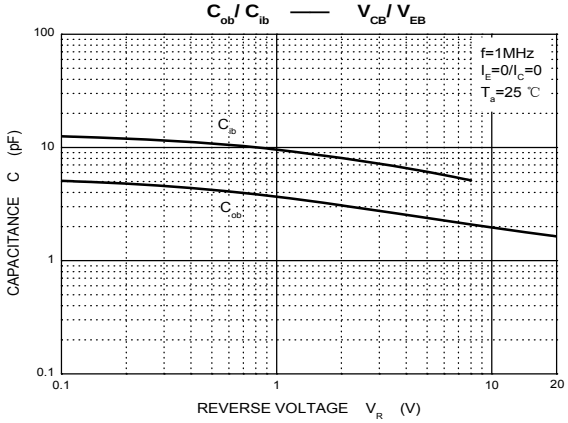
I_C — V_{BE}



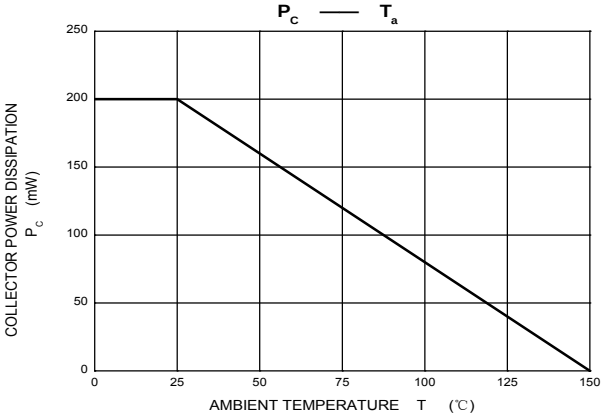
f_T — I_C



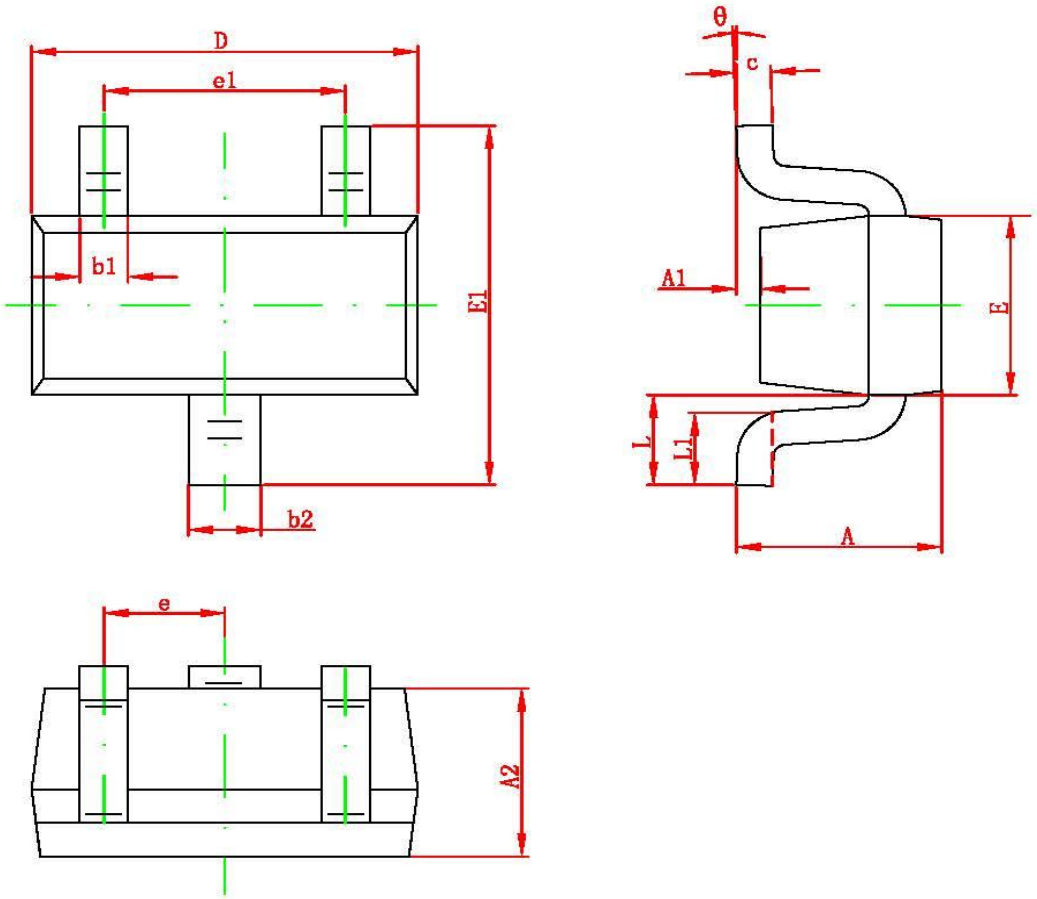
C_{ob}/ C_{ib} — V_{CB}/ V_{EB}



P_C — T_a



SOT-523 PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.700	0.900	0.028	0.035
A1	0.000	0.100	0.000	0.004
A2	0.700	0.800	0.028	0.031
b1	0.150	0.250	0.006	0.010
b2	0.250	0.350	0.010	0.014
c	0.100	0.200	0.004	0.008
D	1.500	1.700	0.059	0.067
E	0.700	0.900	0.028	0.035
E1	1.450	1.750	0.057	0.069
e	0.500 TYP.		0.020 TYP.	
e1	0.900	1.100	0.035	0.043
L	0.400 REF.		0.016 REF.	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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