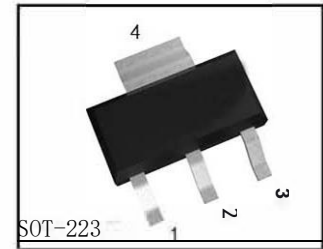
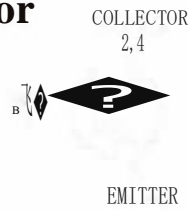


NPN Silicon Planar Epitaxial Transistor



• ABSOLUTE MAXIMUM RATINGS (Ta=25 °C)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V _{CEO}	300	V
Collector-Base Voltage	V _{CBO}	300	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current (DC)	I _{C(DC)}	500	mA
Total Device Dissipation T _A =25 °C	P _O	2	W
Junction Temperature	T _j	150	°C
Storage, Temperature	T _{stg}	-55 to +150	°C

• Device Marking

I7JA42

• ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Typ	Max	Unit
Collector-Emitter Breakdown Voltage (I _c =1mA)	V _{(BR)CEO}	300	-	-	V
Collector-Base Breakdown Voltage (I _c =100μA)	V _{(BR)CBO}	300	-	-	V
Emitter-Base Breakdown Voltage (I _E =10μA)	V _{(BR)EBO}	6	-	-	V
Collector-Emitter Cutoff Current (V _{CB} =300V)	I _{cso}	-	-	100	nA
Emitter-Base Cutoff Current (V _{EB} =6V)	I _{EBO}	-	-	100	nA

● ON CHARACTERISTICS

DC Current Gain ($V_{CE} = 10V, I_C = 1mA$) ($V_{CE} = 10V, I_C = 10mA$) ($V_{CE} = 10V, I_C = 30mA$)	h_{FE1} h_{FE2} h_{FE3}	25 40 40	- - -	- - -	- - -
Collector-Emitter Saturation Voltages ($I_C = 20mA, I_B = 2mA$)	$V_{CE(sat)}$	-	-	500	mV
Base-Emitter Saturation Voltages ($I_C = 20mA, I_B = 2mA$)	$V_{BE(sat)}$	-	-	900	mV

● DYNAMIC CHARACTERISTICS

Current-Gain—Bandwidth Product ($V_{CE} = 20V, I_C = 10mA, f = 100MHz$)	f_T	50	-	-	MHz
Output Capacitance ($V_{CB} = 20Vdc, f = 1MHz$)	C_{ob}	-	-	3	pF

Typical Characteristics

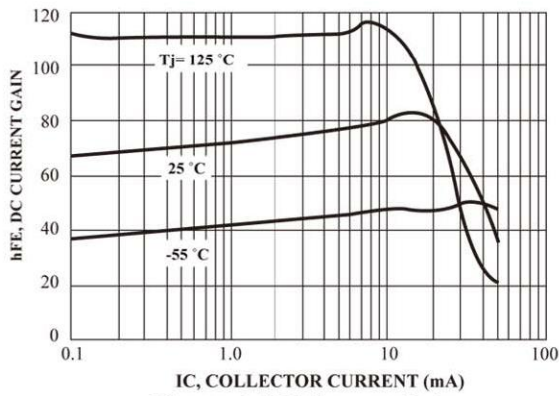


Figure .1 DC Current Gain

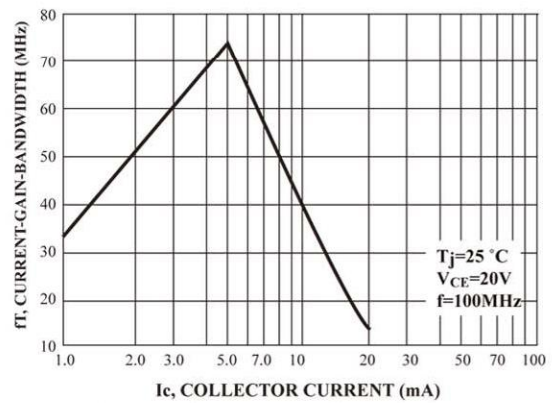


Figure .2 Current-Gain-Bandwidth

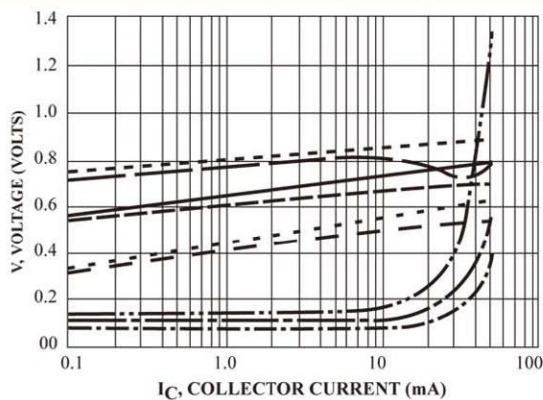


Figure.3 "On" Voltages

- $V_{CE(sat)}$ @25 °C, $I_{CIB} = 10$
- - - $V_{CE(sat)}$ @125 °C, $I_{CIB} = 10$
- · · $V_{CE(sat)}$ @ -55 °C, $I_{CIB} = 10$
- $V_{BE(sat)}$ @25 °C, $I_{CIB} = 10$
- - - $V_{BE(sat)}$ @125 °C, $I_{CIB} = 10$
- · · $V_{BE(sat)}$ @ -55 °C, $I_{CIB} = 10$
- $V_{BE(on)}$ @25 °C, $V_{CE} = 10V$
- - - $V_{BE(on)}$ @125 °C, $V_{CE} = 10V$
- · · $V_{BE(on)}$ @ -55 °C, $V_{CE} = 10V$

SOT-223 Outline Dimensions

unit:mm

