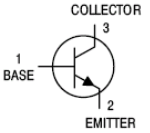
NPN Small Signal Surface Mount Transistor

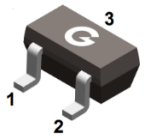
2SC4617

Features

- Reduces board space
- High h_{FE}
- Low $V_{CE(sat)}$
- RoHS compliant with Halogen-free

HF





SOT-523

Mechanical Data

- Case: SOT-523
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SC4617-Q	SOT-523	3000 pcs / Tape Reel	BQ
2SC4617-R	SOT-523	3000 pcs / Tape Reel	BR
2SC4617-S	SOT-523	3000 pcs / Tape Reel	BS

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (Continuous)	I_C	100	mA
Collector Current (Peak)	I_{CM}	200	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	125	mW
Thermal Resistance Junction-to-Air *1	$R_{\theta JA}$	160	°C/W
Thermal Resistance Junction-to-Case *1	$R_{\theta JC}$	90	°C/W
Thermal Resistance Junction-to-Lead *1	$R_{\theta JL}$	80	°C/W
Operating junction Temperature	T_J	-55 ~ +150	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Note 1: The data tested by surface mounted on a 1 inch^2 FR-4 board with 2OZ copper

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 50μA, I_B = 0	50	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1mA, I_B = 0	50	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 50μA, I_C = 0	5	-	-	V
Collector Cut-off Current	I_{CBO}	V_{CB} = 30V, I_E = 0	-	-	0.5	μA
Emitter-base Cut-off Current	I_{EBO}	V_{EB} = 4V, I_C = 0	-	-	0.5	μA
DC Current Gain	h_{FE}	V_{CE} = 6V, I_C = 1mA	120	-	560	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 60mA, I_B = 5mA	-	-	0.4	V
Transition Frequency	f_T	V_{CE} = 12V, I_C= 2mA f = 30MHz	-	180	-	MHz
Collector Output Capacitance	Cob	V_{CB} = 12V, I_C = 0 f = 1MHz	-	-	2	pF

Classification of h_{FE}

Rank	Q	R	S
Range	120-270	180-390	270-560
MARKING	BQ	BR	BS

Ratings and Characteristic Curves (@ T_A = 25℃ unless otherwise specified)

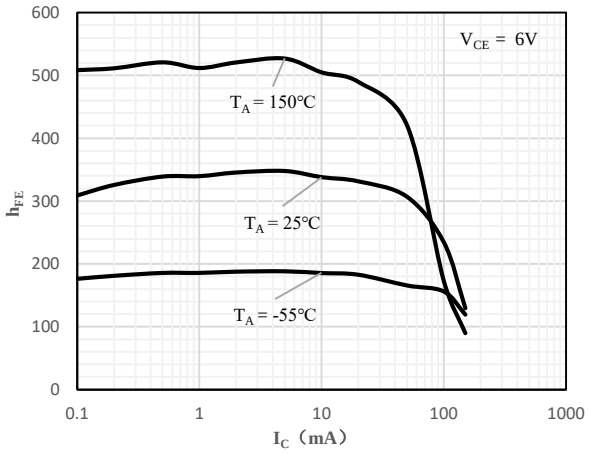


Fig 1 h_{FE} vs. I_C

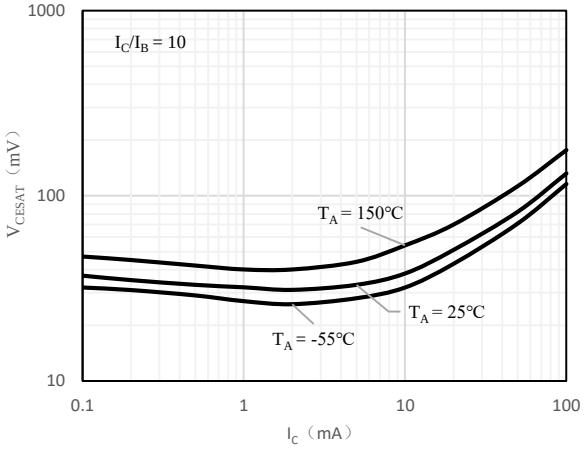


Fig 2 $V_{CE(sat)}$ vs. I_C

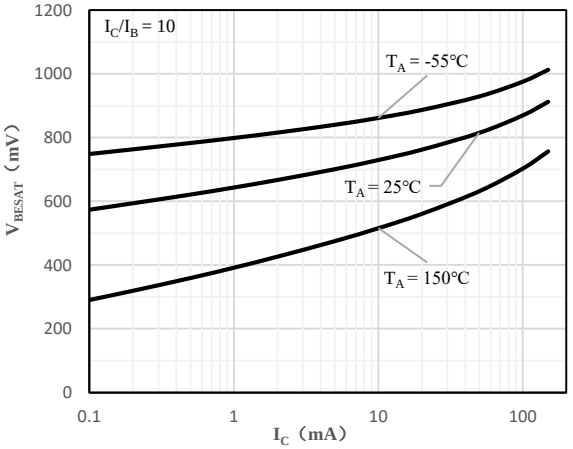


Fig 3 $V_{BE(sat)}$ vs. I_C

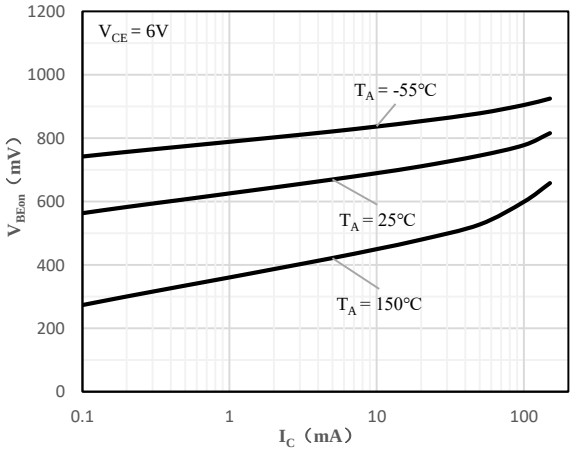


Fig 4 $V_{BE(ON)}$ vs. I_C

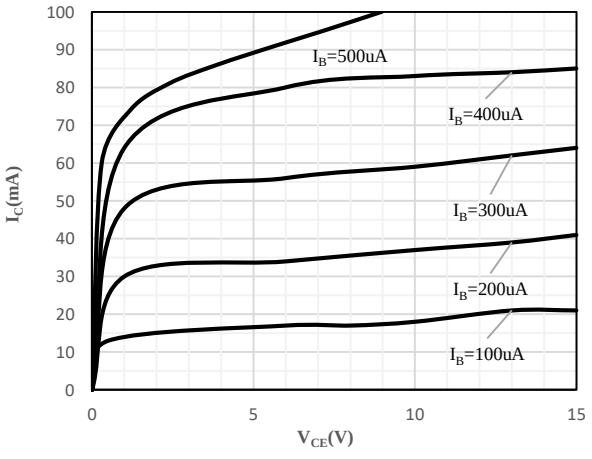


Fig 5 I_C vs. V_{CE}

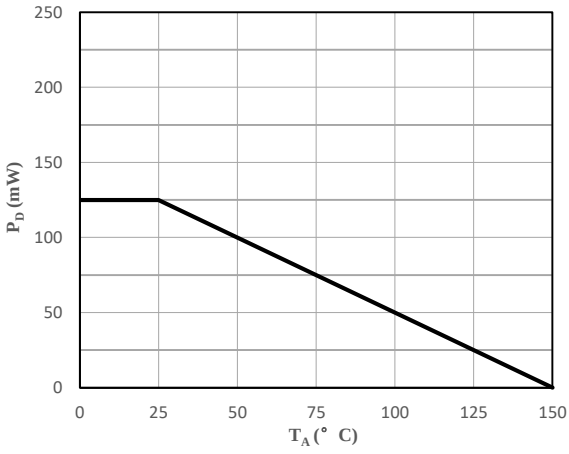


Fig 6 P_D vs. T_A

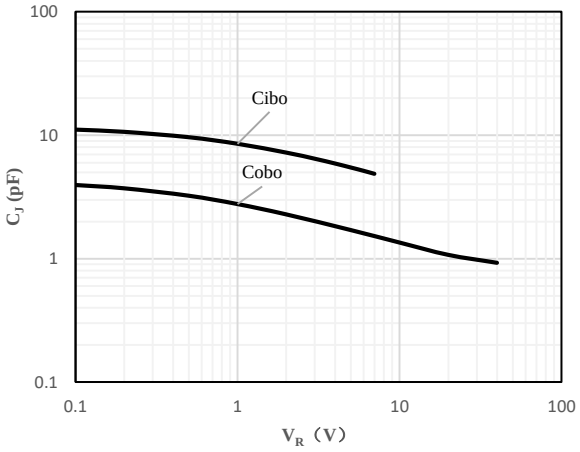
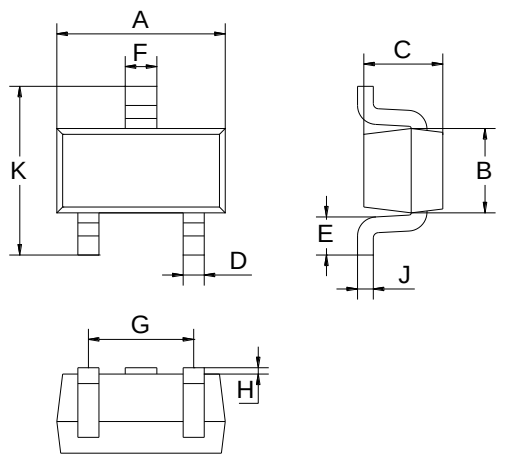


Fig 7 C_J vs. V_R

Package Outline Dimensions (Unit: mm)



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Dimension	**Min.**	**Max.**
A	1.50	1.70
B	0.75	0.85
C	0.60	0.80
D	0.15	0.30
E	0.30	0.40
F	0.25	0.40
G	0.90	1.10
H	0.02	0.10
J	0.08	0.18
K	1.45	1.75

Mounting Pad Layout (Unit: mm)

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