

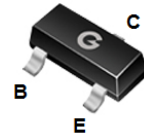
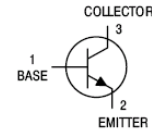
Features

- High DC current gain
- Complimentary to 2SB624
- RoHS compliant with Halogen-free

HF

Mechanical Data

- Case: SOT-23
- Molding compound: UL flammability classification rating 94V-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-23

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
2SD596-A	SOT-23	3000 pcs / Tape & Reel	DV1
2SD596-B	SOT-23	3000 pcs / Tape & Reel	DV2
2SD596-C	SOT-23	3000 pcs / Tape & Reel	DV3
2SD596-D	SOT-23	3000 pcs / Tape & Reel	DV4
2SD596-E	SOT-23	3000 pcs / Tape & Reel	DV5

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

Parameter	Symbol	Value	Unit
Collector-Base Breakdown Voltage	V _{CBO}	30	V
Collector-Emitter Breakdown Voltage	V _{CEO}	25	V
Emitter-Base Breakdown Voltage	V _{EBO}	5	V
Collector Current (Continuous)	I _C	0.7	A

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P _D	0.2	W
Junction Temperature Range	T _J	-55 ~ +150	°C
Storage Temperature Range	T _{STG}	-55 ~ +150	°C

Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C = 100\mu\text{A}, I_E = 0$	30	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C = 1\text{mA}, I_B = 0$	25	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E = 100\mu\text{A}, I_C = 0$	5	-	-	V
Collector Cut-off Current	I_{CBO}	$V_{CB} = 30\text{V}, I_E = 0$	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB} = 5\text{V}, I_C = 0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE} = 1\text{V}, I_C = 0.1\text{A}$	110	-	400	-
		$V_{CE} = 1\text{V}, I_C = 0.7\text{A}$	50	-	-	-
Collector-emitter Saturation Voltage	$V_{CE(sat)}$	$I_C = 0.7\text{A}, I_B = 0.07\text{A}$	-	0.14	0.6	V
Base-emitter on Voltage	$V_{BE(on)}$	$V_{CE} = 6\text{V}, I_C = 10\text{mA}$	-	0.64	0.7	V
Transition Frequency	f_T	$I_C = 10\text{mA}, V_{CE} = 6\text{V}$	-	170	-	MHz
Collector Output Capacitance	C_{OB}	$V_{CB} = 6\text{V}, I_E = 0, f = 10\text{MHz}$	-	12	-	pF

CLASSIFICATION OF h_{FE}

Rank	A	B	C	D	E
Range	110-180	135-220	170-270	200-320	250-400
Marking	DV1	DV2	DV3	DV4	DV5

Ratings and Characteristics Curves (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

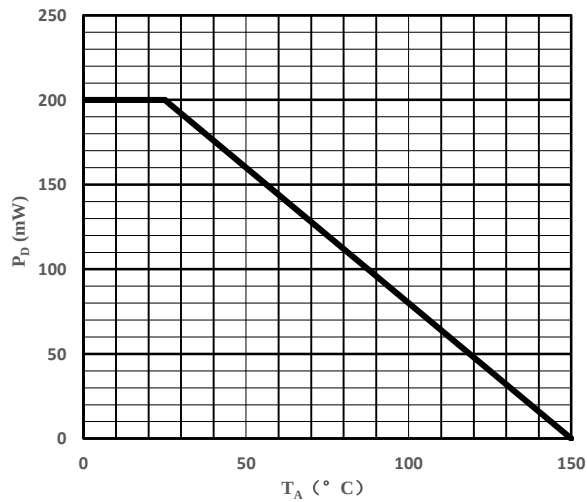


Fig 1 P_D vs. T_A

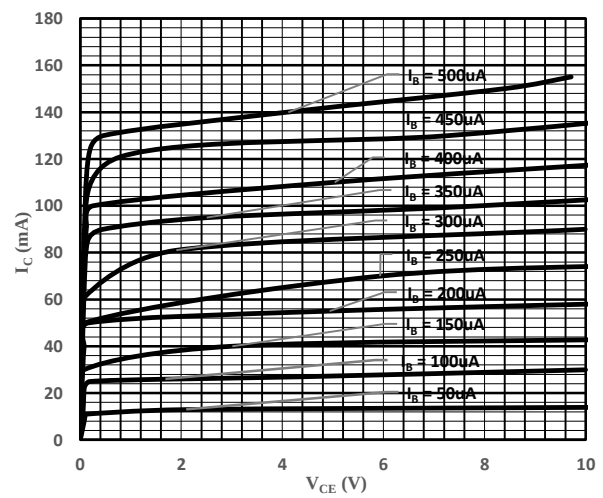


Fig 2 I_C vs. V_{CE}

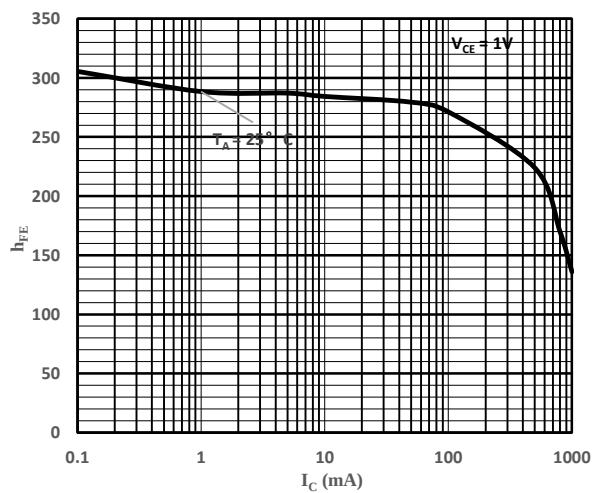


Fig 3 h_{FE} vs. I_C

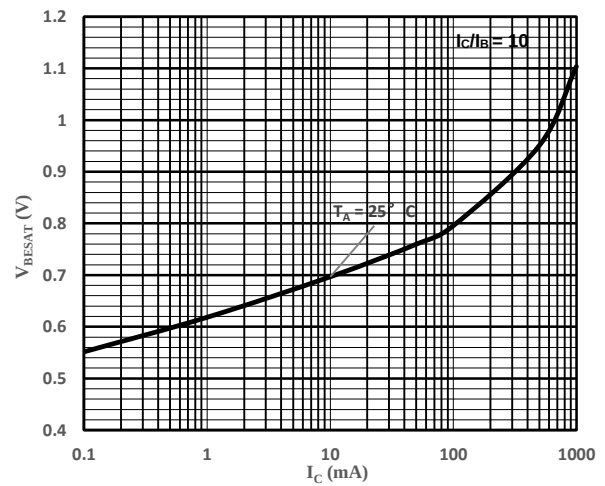


Fig 4 $V_{BE(sat)}$ vs. I_C

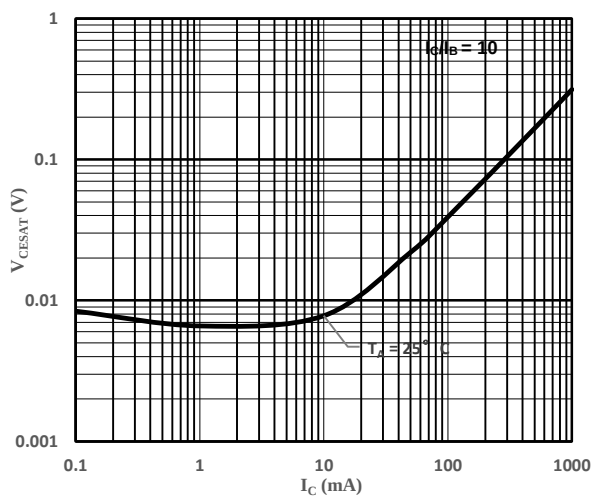


Fig 5 $V_{CE(sat)}$ vs. I_C

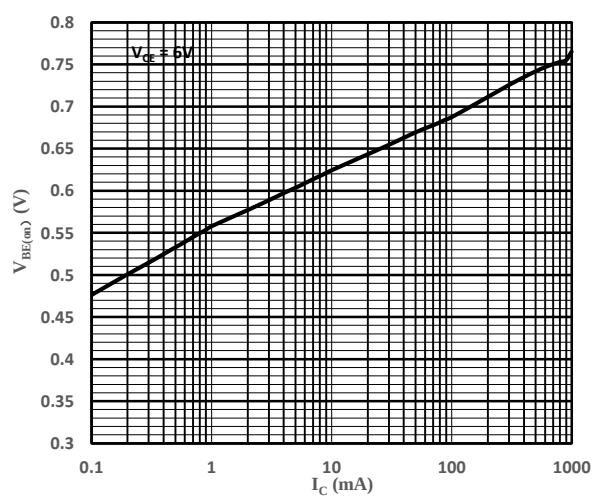


Fig 6 $V_{BE(on)}$ vs. I_C

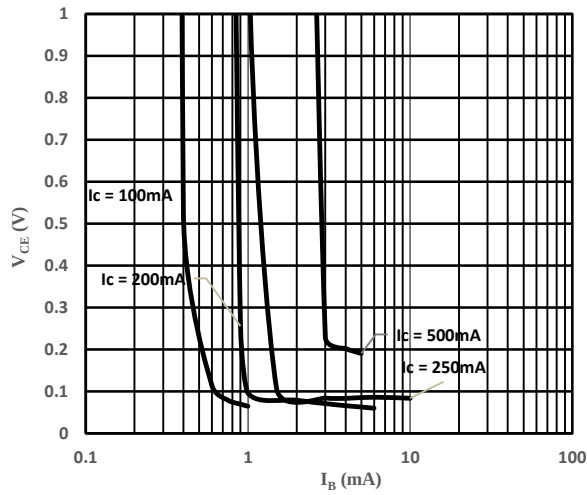


Fig 7 V_{CE} vs. I_B

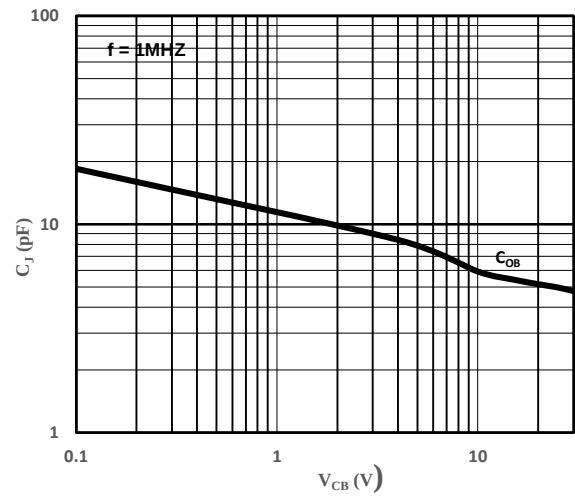


Fig 8 C_J vs. V_{CB}

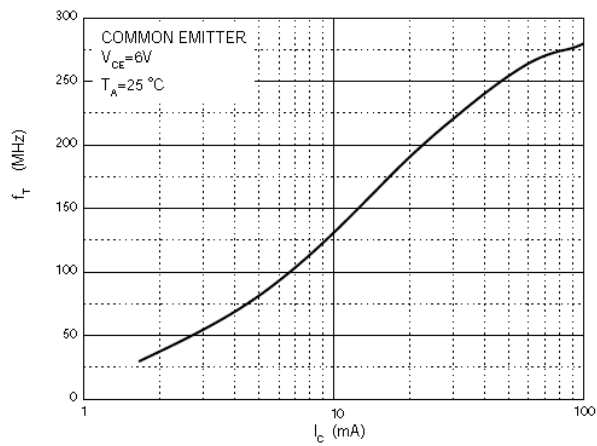
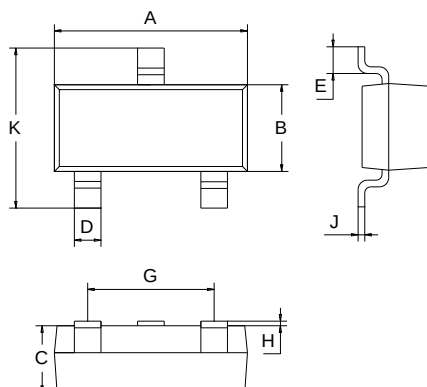


Fig 9 f_T vs. I_C

Package Outline Dimensions (Unit: mm)



SOT-23		
Dimension	Min.	Max.
A	2.70	3.10
B	1.10	1.50
C	0.90	1.10
D	0.30	0.50
E	0.35	0.48
G	1.80	2.00
H	0.02	0.10
J	0.05	0.15
K	2.20	2.60

Package Outline Dimensions (Unit: mm)

SOT-23

