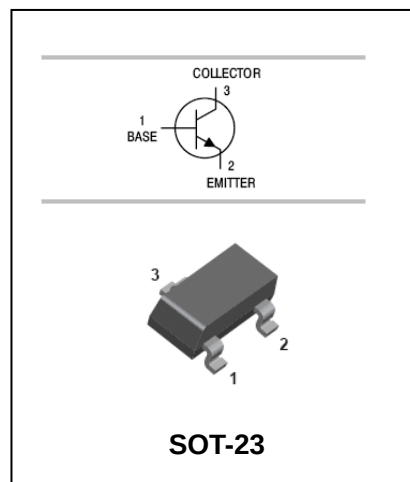


Medium Power Transistor

2SD1782

FEATURES

- Low $V_{CE(sat)}$.
 $V_{CE(sat)} = 0.2V$ (Typ.)
($I_C / I_B = 0.5 A / 50mA$)
- High V_{CEO} , $V_{CEO} = 80V$
- Complements the 2SB1198K.



APPLICATIONS

- Epitaxial planar type NPN silicon transistor.

ORDERING INFORMATION

Type No.	Marking	Package Code
2SD1782	AJ	SOT-23

MAXIMUM RATING @ $T_a = 25^\circ C$ unless otherwise specified

Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	80	V
V_{CEO}	Collector-Emitter Voltage	80	V
V_{EBO}	Emitter-Base Voltage	5	V
I_C	Collector Current -Continuous	0.5	mA
P_C	Collector Dissipation	0.2	mW
T_j, T_{stg}	Junction and Storage Temperature	-55 to +150	$^\circ C$



Medium Power Transistor

2SD1782

ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=50\mu A$	80	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=2mA$	80	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=50\mu A,$	5	-	-	V
Collector cut-off current	I_{CBO}	$V_{CB}=20V, I_E=0$	-	-	0.5	μA
Emitter cut-off current	I_{EBO}	$V_{EB}=4V, I_C=0$	-	-	0.5	μA
DC current gain	h_{FE}	$V_{CE}=3V, I_C=100mA$	120	-	390	-
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=500mA, I_B=50mA$	-	0.2	0.5	V
Transition frequency	f_T	$V_{CE}=10V, I_E=-50mA$ $f=100MHz$	-	120	-	MHz
Output capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	-	7.5	-	pF

CLASSIFICATION OF $h_{FE(1)}$

Rank	Q	R
Range	120-270	180-390

Medium Power Transistor

2SD1782

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified

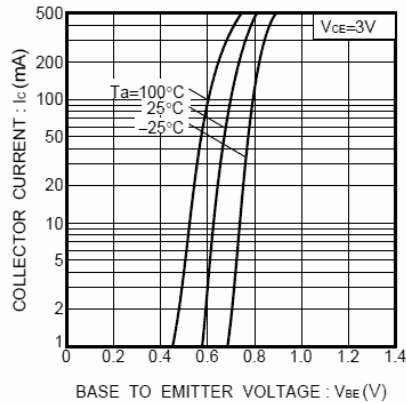


Fig.1 Grounded emitter propagation characteristics

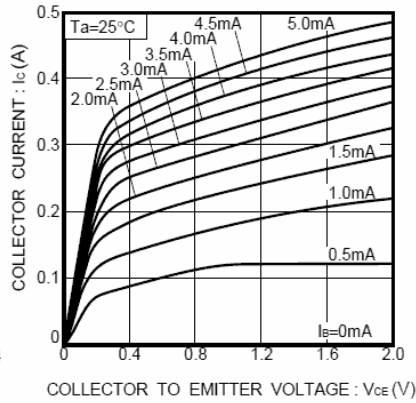


Fig.2 Grounded emitter output characteristics

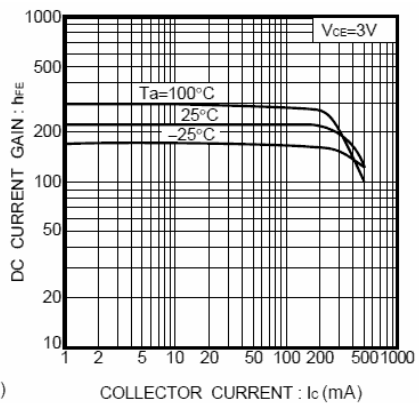


Fig.3 DC current gain vs. collector current

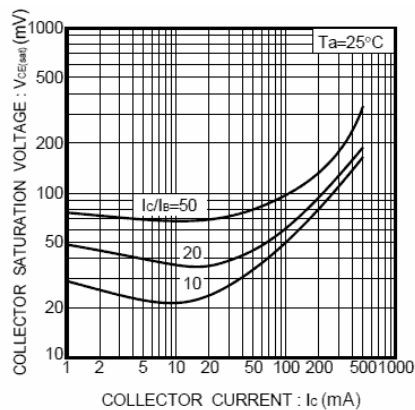


Fig.4 Collector-emitter saturation voltage vs. collector current (I)

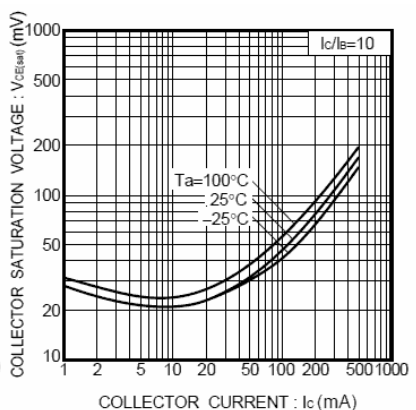


Fig.5 Collector-emitter saturation voltage vs. collector current (II)

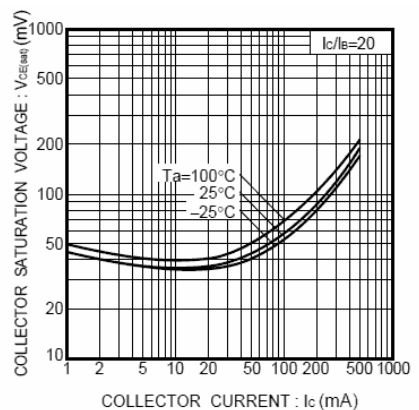


Fig.6 Collector-emitter saturation voltage vs. collector current (III)

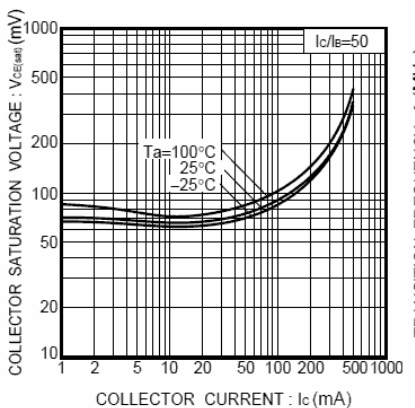


Fig.7 Collector-emitter saturation voltage vs. collector current (IV)

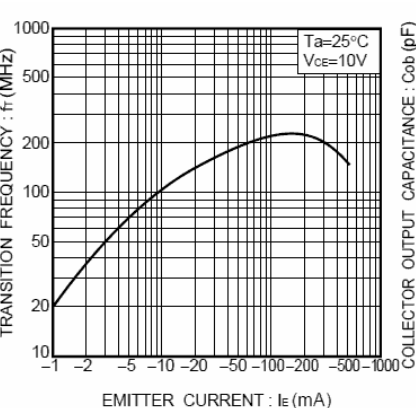


Fig.8 Gain bandwidth product vs. emitter current

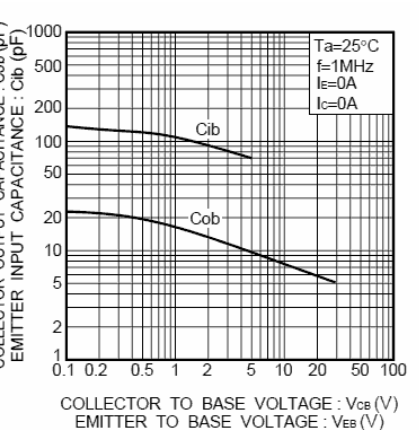


Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

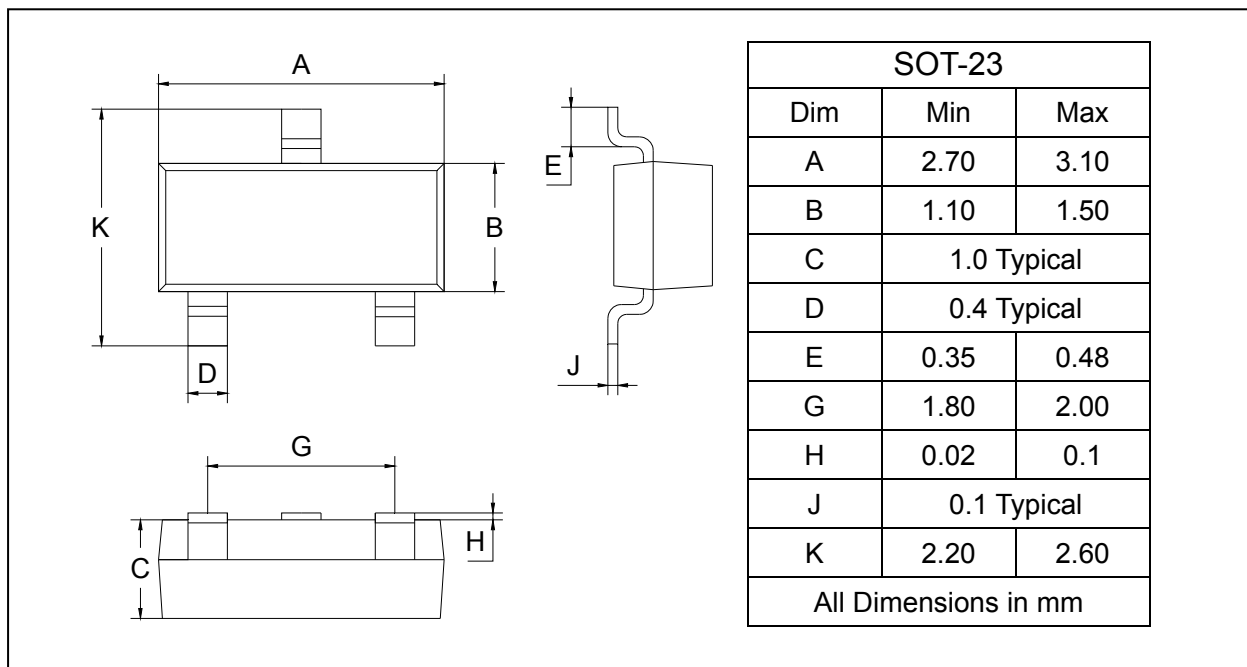
Medium Power Transistor

2SD1782

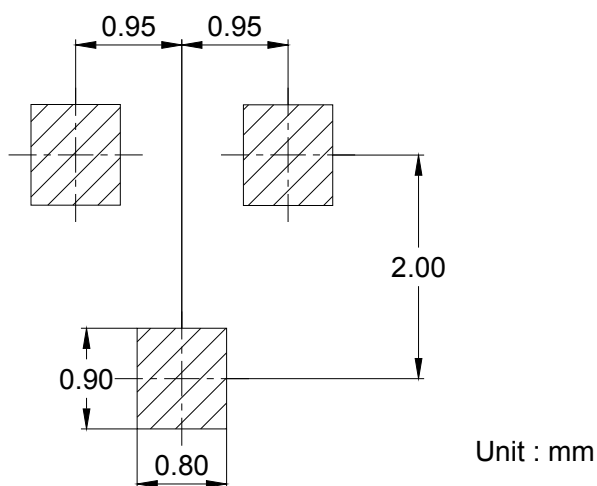
PACKAGE OUTLINE

Plastic surface mounted package

SOT-23



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
2SD1782	SOT-23	3000/Tape&Reel