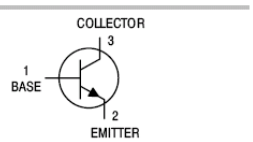
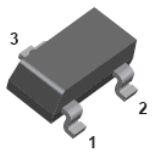
Medium Power Transistor 2SD1782

FEATURES

- Low VCE(sat).
  VCE(sat) =0.2V(Typ.)
  (IC / IB=0.5 A / 50mA)
- High VCEO, VCEO=80V
- Complements the 2SB1198K.

Lead-free





SOT-23

APPLICATIONS

- Epitaxial planar type NPN silicon transistor.

ORDERING INFORMATION

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

MAXIMUM RATING @ Ta=25℃ 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	℃

Medium Power Transistor **2SD1782**

ELECTRICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

Parameter	**Symbol**	**Test conditions**	**MIN**	**TYP**	**MAX**	**UNIT**
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=50μA	80	-	-	V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=2mA	80	-	-	V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=50μA,	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

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TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

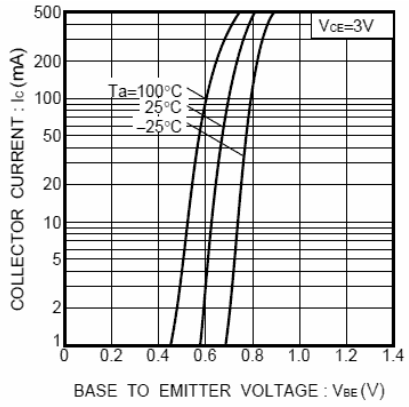

Fig.1 Grounded emitter propagation characteristics

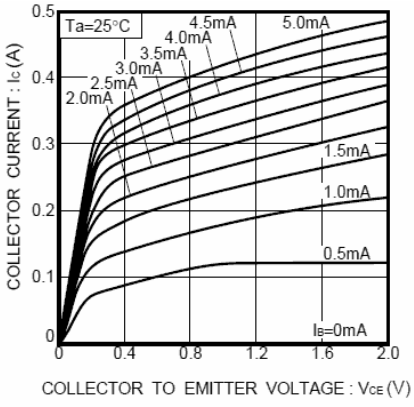

Fig.2 Grounded emitter output characteristics

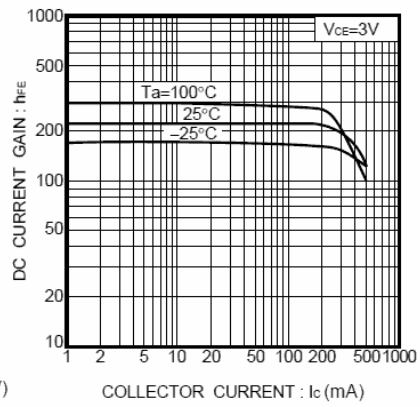

Fig.3 DC current gain vs. collector current

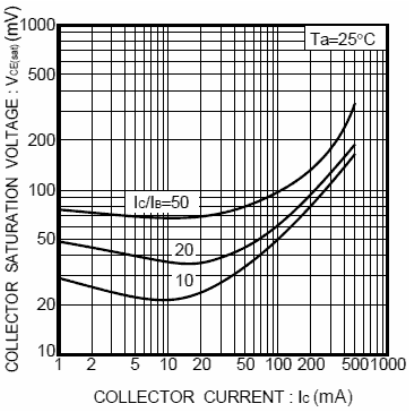

Fig.4 Collector-emitter saturation voltage vs. collector current (Ⅰ)

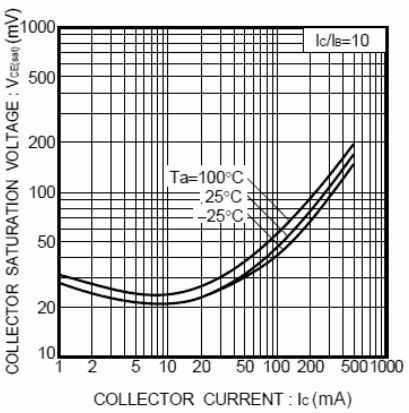

Fig.5 Collector-emitter saturation voltage vs. collector current (Ⅱ)

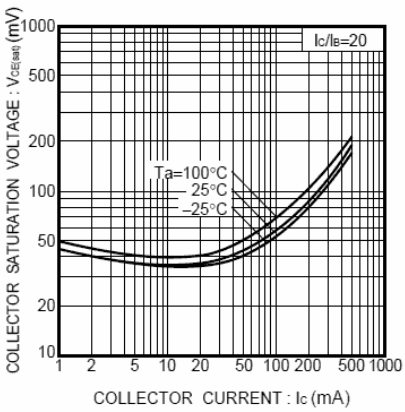

Fig.6 Collector-emitter saturation voltage vs. collector current (Ⅲ)

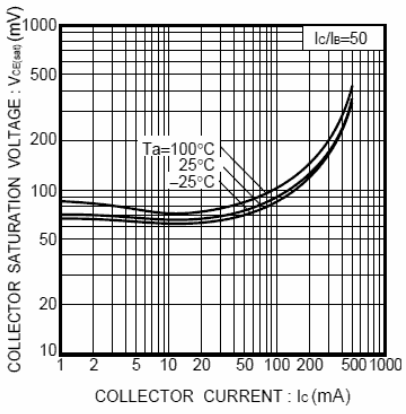

Fig.7 Collector-emitter saturation voltage vs. collector current (Ⅳ)

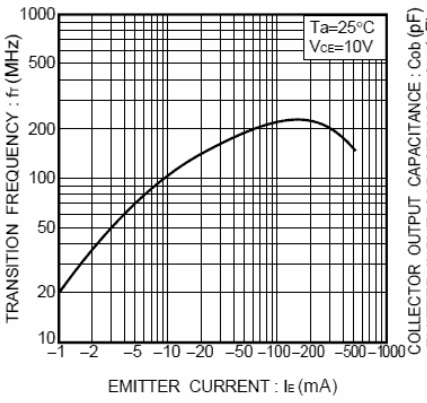

Fig.8 Gain bandwidth product vs. emitter current

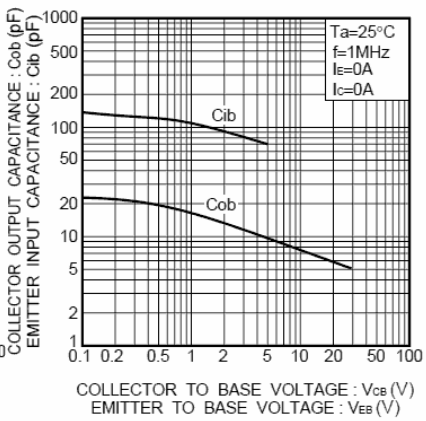

Fig.9 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

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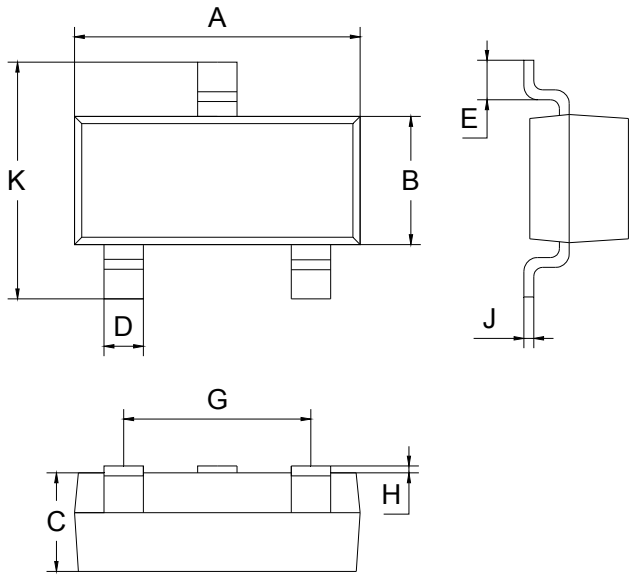
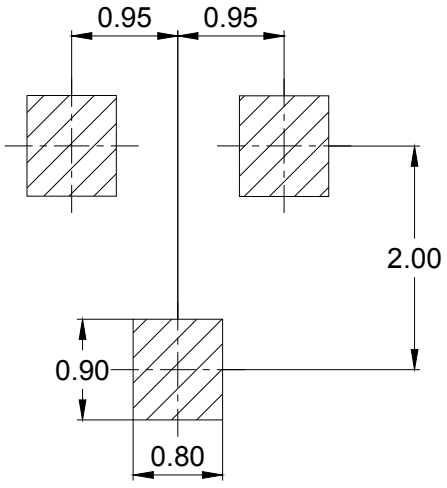
PACKAGE OUTLINE

Plastic surface mounted package SOT-23



SOT-23		
Dim	Min	Max
A	2.70	3.10
B	1.10	1.50
C	1.0 Typical	
D	0.4 Typical	
E	0.35	0.48
G	1.80	2.00
H	0.02	0.1
J	0.1 Typical	
K	2.20	2.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit : mm

PACKAGE INFORMATION

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