

SOT-23 Plastic-Encapsulate Transistors

Features

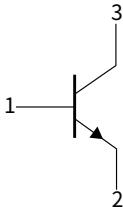
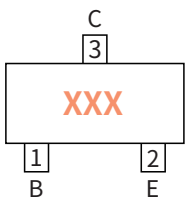
- Power dissipation of 200mW
- High stability and high reliability

Mechanical Data

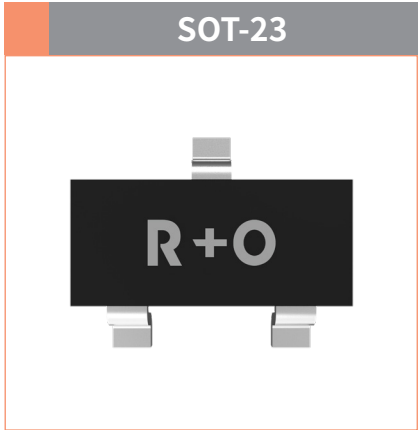
- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram

Device Code=XXX
2SD1782-Q=AJQ
2SD1782-R=AJR



Collector-Emitter Voltage
V_{CEO} 80V
Collector Current
0.5 Ampere



Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V _{CBO}	V	80
Collector-Emitter Voltage	V _{CEO}		80
Emitter-Base Voltage	V _{EBO}		5
Collector Current	I _C	A	0.5
Collector Power Dissipation	P _C	mW	200
Storage temperature	T _{stg}	°C	-55 ~+150
Junction temperature	T _j	°C	-55 ~+150
Typical Thermal Resistance	R _{θJA}	°C /W	625

Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Typ	Max
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	80	—	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=10mA, I_B=0$	80	—	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=100\mu A, I_C=0$	5	—	—
Collector-Base cut-off current	I_{CBO}	nA	$V_{CB}=80V, I_E=0$	—	—	100
Emitter-Base cut-off current	I_{EBO}		$V_{EB}=5.0V, I_C=0$	—	—	100
DC Current Gain	$h_{FE(1)}$	—	$I_C=100mA, V_{CE}=3V$	120	—	390
	$h_{FE(2)}$	—	$I_C=500mA, V_{CE}=3V$	25	—	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	—	0.5
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=500mA, I_B=50mA$	—	—	1.0
Base-Emitter On Voltage	$V_{BE(on)}$	V	$V_{CE}=3V, I_C=500mA$	—	—	1.0
Output Capacitance	C_{ob}	pF	$V_{CB}=6V, I_E=0, f=1MHz$	—	7	—

Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Typ	Max
Transition frequency	f_T	$I_C=20mA, V_{CE}=6V$	MHz	—	120	—

Classification Of h_{FE}

RANK	Q	R
Range	120-270	170-390

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

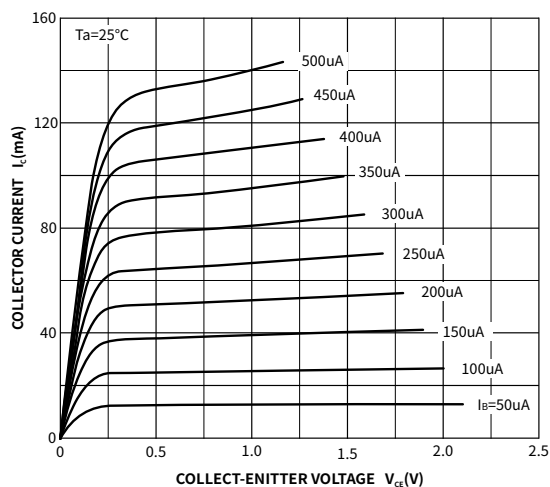


Fig.1 Static Characteristic

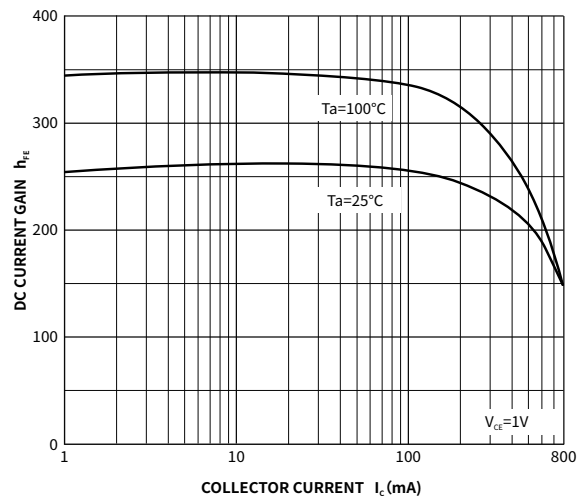


Fig.2 DC Current Gain

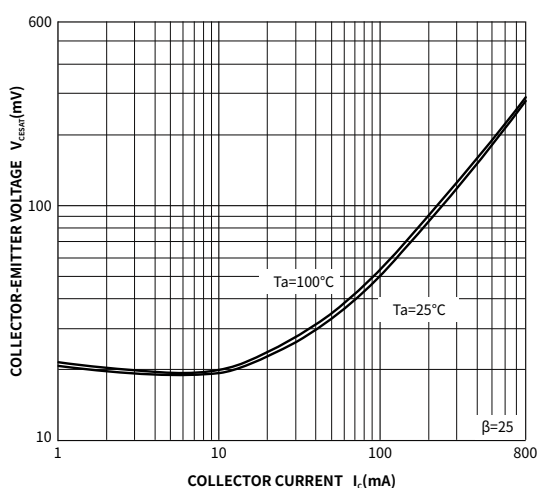


Fig.3 Collector-Emitter Saturation Voltage

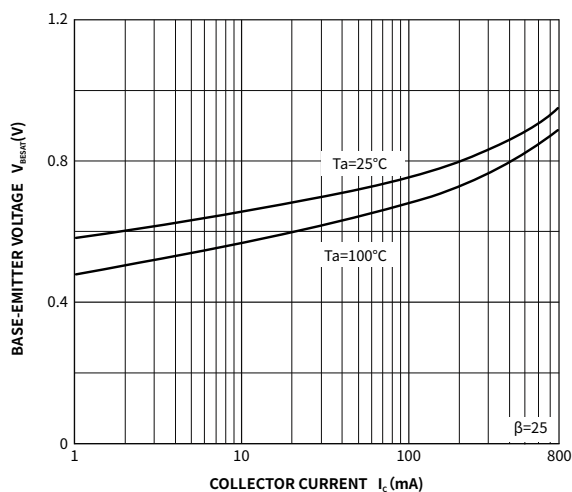


Fig.4 Base-Emitter Saturation Voltage

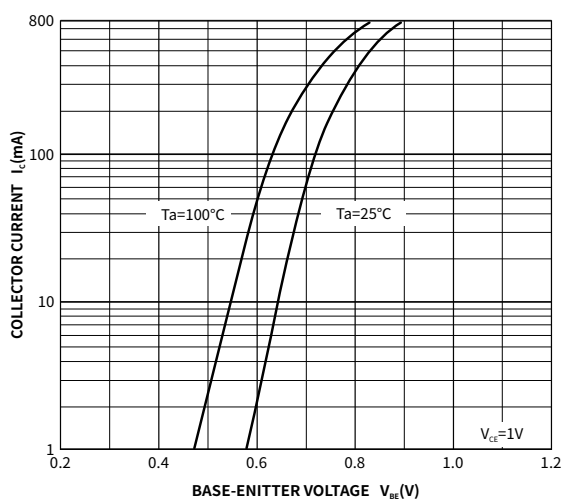


Fig.5 Base-Emitter On Voltage

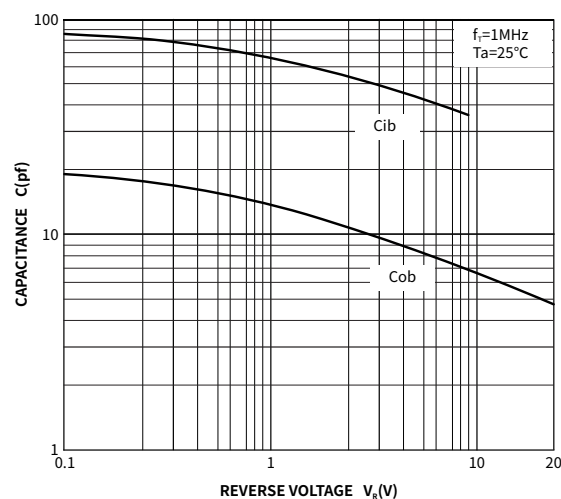
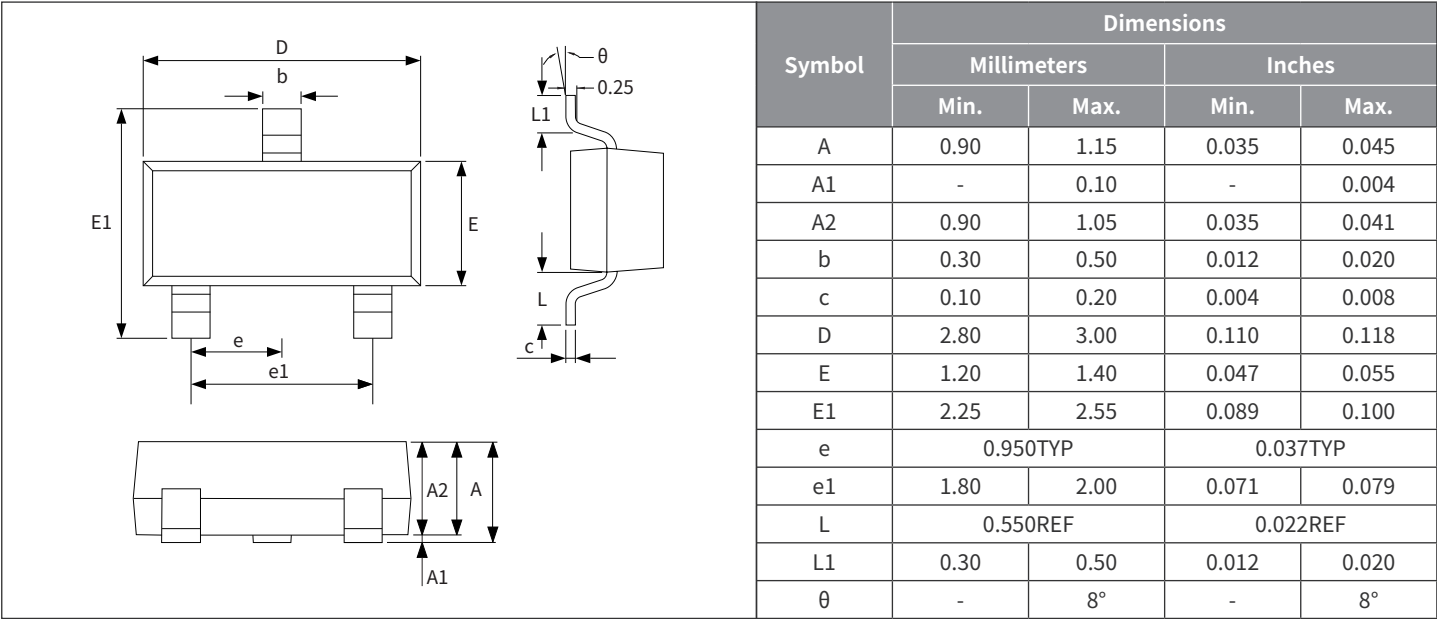


Fig.6 $C_{ob}/C_{ib}-V_{cb} V_{EB}$

● Package Outline Dimensions (SOT-23)



● Suggested Pad Layout

