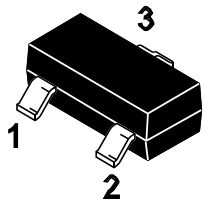
2SD1782

NPN Transistor

Features

- For Switching and AF Amplifier Applications.

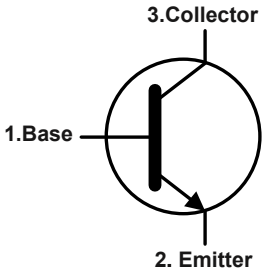
SOT-23



1.Base 2.Emitter 3.Collector

Marking Code:
2SD1782Q : ANQ
2SD1782R : ANR

Equivalent Circuit



Absolute Maximum Ratings

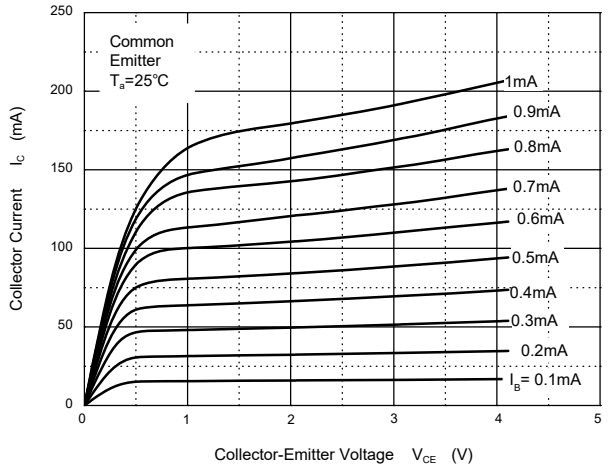
Ratings at 25℃ ambient temperature unless otherwise specified.

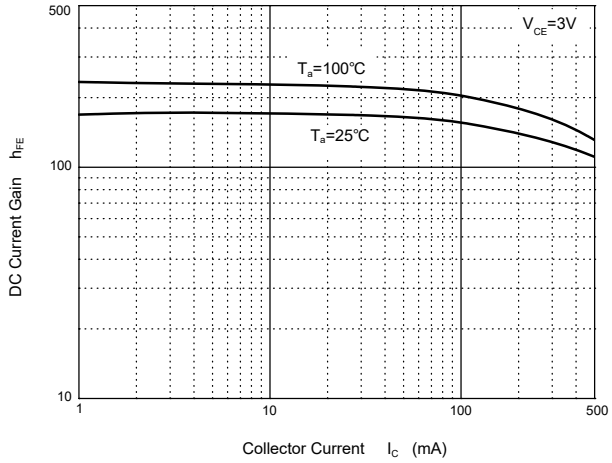
Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	80	V
Collector Emitter Voltage	V_{CEO}	80	V
Emitter Base Voltage	V_{EBO}	5	V
Collector Current	I_C	500	mA
Maximum Power Dissipation	P_D	200	mW
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

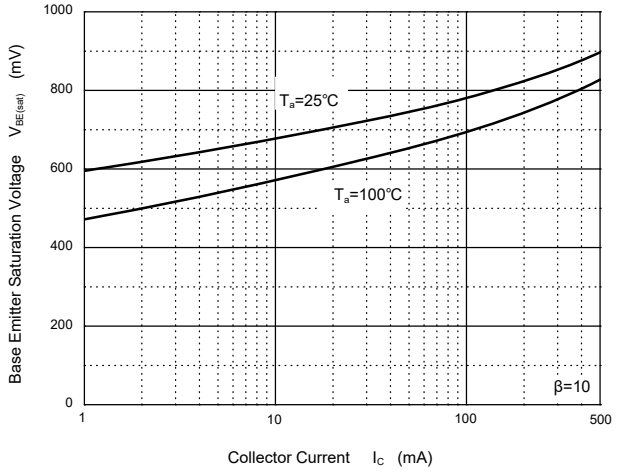
Electrical Characteristics (T_A=25℃)

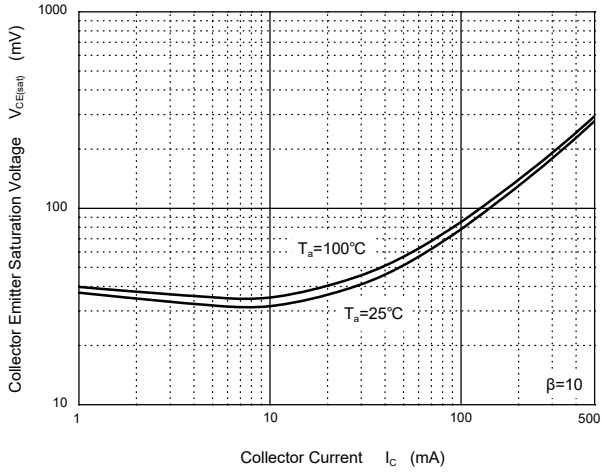
Parameter			Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at V_{CE} = 3 V, I_C = 100 mA	Gain Group	Q R	H_{FE}	120 180	-- --	270 390	--
Collector Base Cutoff Current at V_{CB} = 50V			I_{CBO}	--	--	500	nA
Emitter Base Cutoff Current at V_{EB} = 4 V			I_{EBO}	--	--	500	nA
Collector Base Breakdown Voltage at I_C = 50 μA			$V_{(BR)CBO}$	80	--	--	V
Collector Emitter Breakdown Voltage at I_C = 2 mA			$V_{(BR)CEO}$	80	--	--	V
Emitter Base Breakdown Voltage at I_E = 50 μA			$V_{(BR)EBO}$	5	--	--	V
Collector Emitter Saturation Voltage at I_C = 500 mA, I_B = 50 mA			$V_{CE(sat)}$	--	--	0.5	V
Base Emitter Saturation Voltage at I_C = 500 mA, I_B = 50 mA			$V_{BE(sat)}$	--	--	1.2	V
Transition Frequency at V_{CE} = 10 V, I_C = 50 mA, f = 100 MHz			F_T	--	120	--	MHz
Output Capacitance at V_{CB} = 10 V, f = 1 MHz			C_{ob}	--	7.5	--	pF

Typical Characteristic Curves





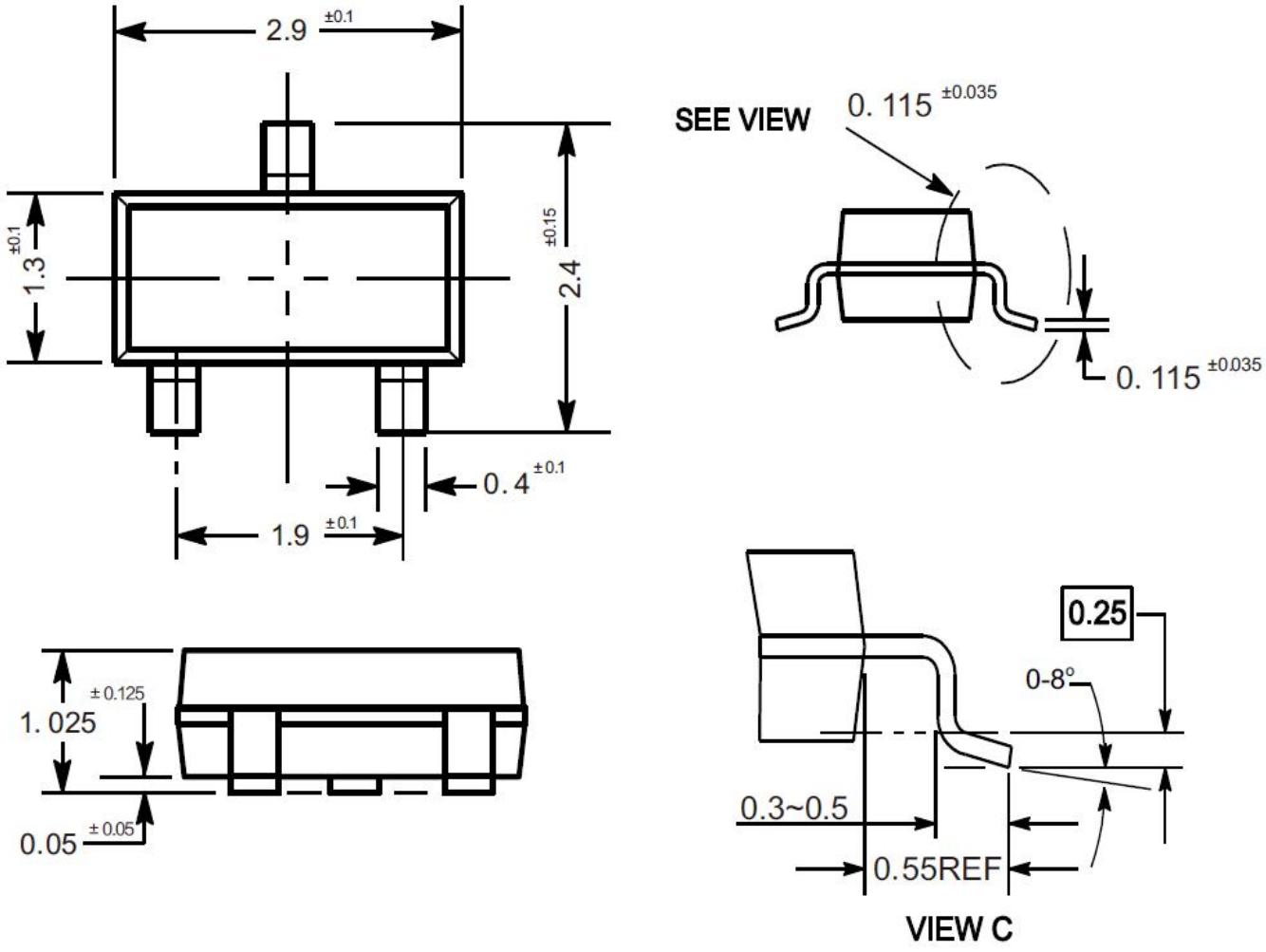




Package Outline

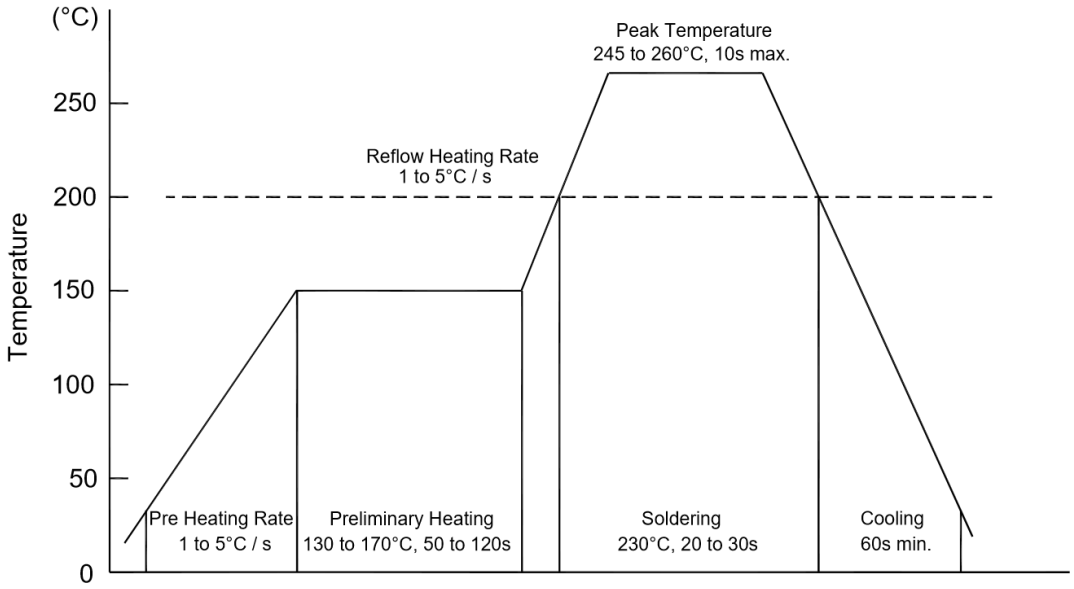
SOT-23

Dimensions in mm



Conditions of Soldering and Storage

◆ Recommended condition of reflow soldering



Recommended peak temperature is over 245 ^{O}C. If peak temperature is below 245 ^{O}C, you may adjust the following parameters:

- Time length of peak temperature (longer)
- Time length of soldering (longer)
- Thickness of solder paste (thicker)

◆ Conditions of hand soldering

- Temperature: 370 ^{O}C
- Time: 3s max.
- Times: one time

◆ Storage conditions

- **Temperature**
  5 to 40 ^{O}C
- **Humidity**
  30 to 80% RH
- **Recommended period**
  One year after manufacturing