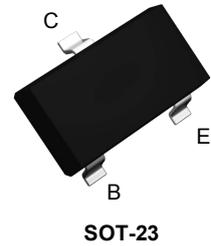


Features

- Power dissipation of 300mW
- High stability and high reliability



Mechanical Data

- SOT-23 small outline plastic package
- Epoxy UL: 94V-0

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

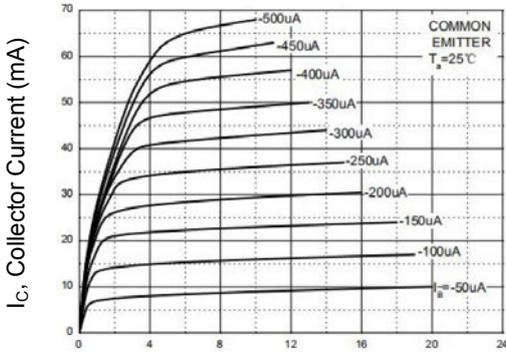
Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CBO}	-300	V
Collector - Emitter Voltage	V_{CEO}	-300	V
Emitter - Base Voltage	V_{EBO}	-5	V
Collector Current - Continuous	I_C	-0.5	A
Collector Power Dissipation	P_C	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C}/\text{W}$
Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

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

Parameter	Symbol	Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-100\mu\text{A}, I_E=0$	-300	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-1\text{mA}, I_B=0$	-300	-	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}	$V_{CB}=-200\text{V}, I_E=0$	-	-250	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$	-	-100	nA
DC Current Gain ¹	$h_{FE(1)}$	$V_{CE}=-10\text{V}, I_C=-1\text{mA}$	25	-	-
	$h_{FE(2)}$	$V_{CE}=-10\text{V}, I_C=-10\text{mA}$	40	-	-
	$h_{FE(3)}$	$V_{CE}=-10\text{V}, I_C=-30\text{mA}$	25	-	-
Collector-Emitter Saturation Voltage ¹	$V_{CE(sat)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$	-	-0.50	V
Base-Emitter Voltage ¹	$V_{BE(sat)}$	$I_C=-20\text{mA}, I_B=-2\text{mA}$	-	-0.90	V
Transition Frequency	f_T	$V_{CE}=-20\text{V}, I_C=-10\text{mA}$ $F=30\text{MHz}$	50	-	MHz

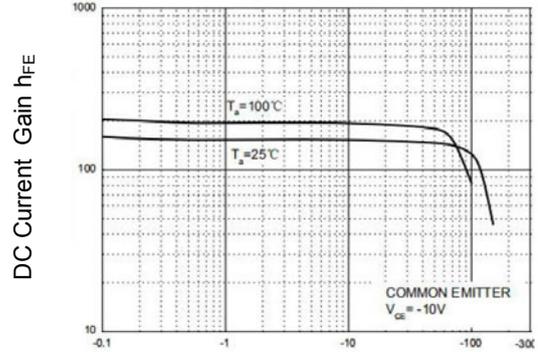
Note: 1) Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

Typical Electrical and Thermal Characteristic Curves



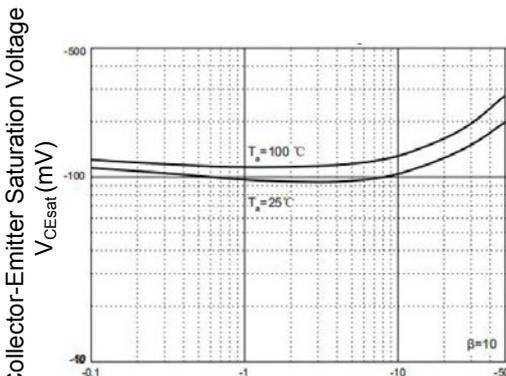
V_{CE} , Collector - Emitter Voltage (V)

Figure 1. Collector Current vs. Collector - Emitter Voltage



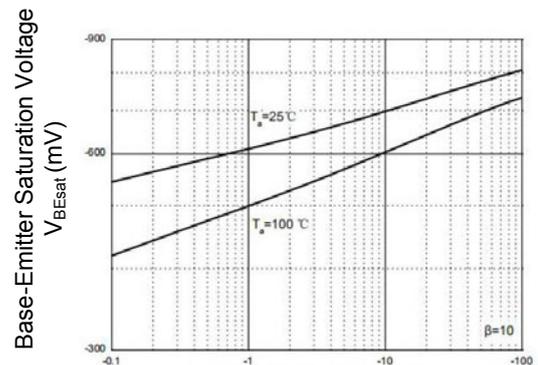
I_C , Collector Current (mA)

Figure 2. DC Current Gain vs. Collector Current



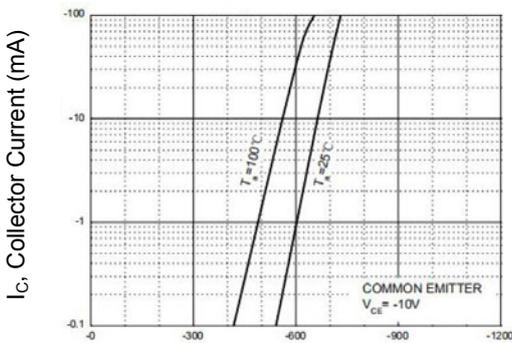
I_C , Collector Current (mA)

Figure 3. Collector - Emitter Saturation Voltage vs. Collector Current



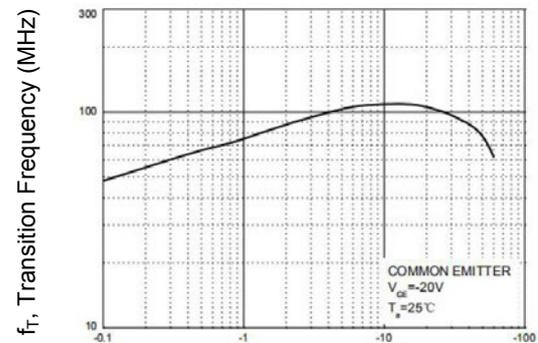
I_C , Collector Current (mA)

Figure 4. Base - Emitter Saturation Voltage vs. Collector Current



V_{BE} , Base - Emitter Voltage (mV)

Figure 5. Collector Current vs. Base - Emitter Voltage



I_C , Collector Current (mA)

Figure 6. Transition Frequency vs. Collector Current

Typical Electrical and Thermal Characteristic Curves

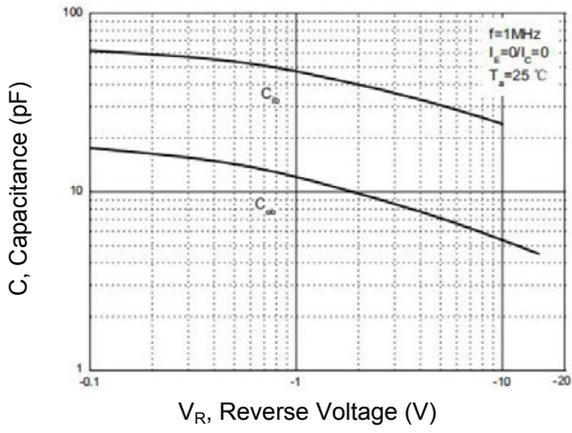


Figure 7. Capacitance Characteristics

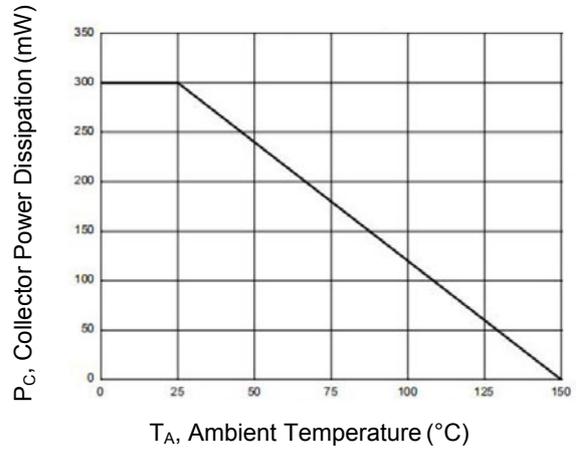
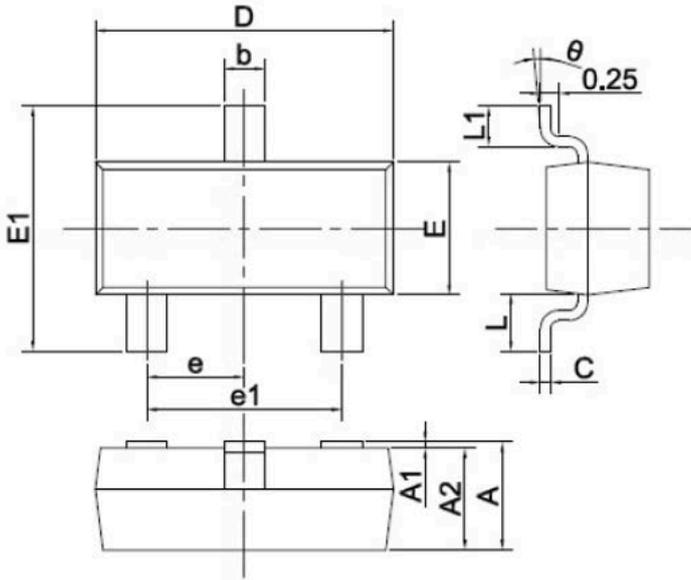


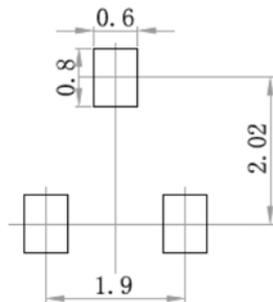
Figure 8. Power Dissipation vs Ambient Temperature

Package Outline Dimensions (SOT-23)



Symbol	Dimensions in Millimeters	
	Min	Max
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950 TYP.	
e1	1.800	2.000
L	0.550 REF.	
L1	0.300	0.500
θ	0°	8°

Recommended Pad Layout



Note:

1. Controlling dimensions: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.