

Features

- Darlingon Amplifier

Absolute Maximum Ratings

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

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Base Voltage	V_{EBO}	10	V
Collector Current -Continuous	I_C	0.3	A
Collector Power Dissipation	P_C	300	mW
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
Junction Temperature	T_J	-55 to +150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^{\circ}\text{C}$

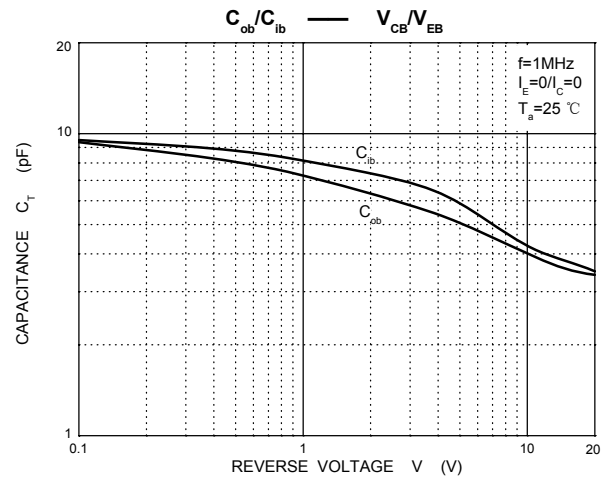
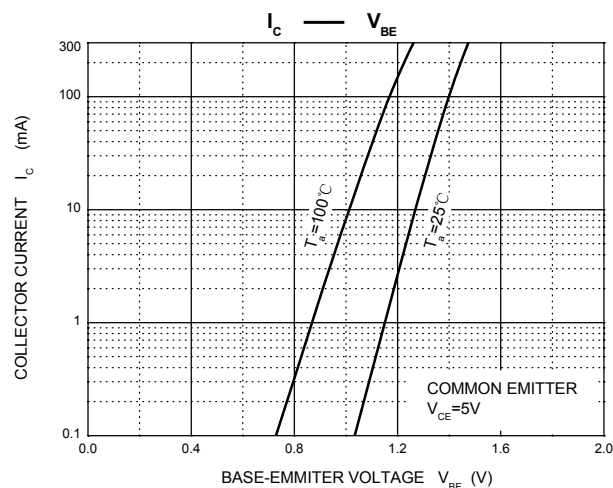
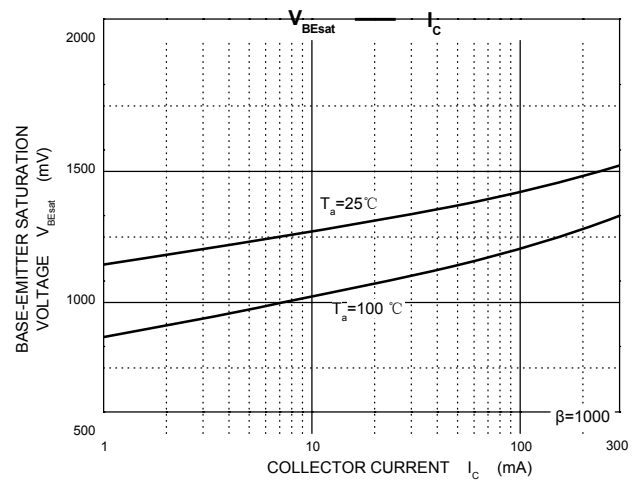
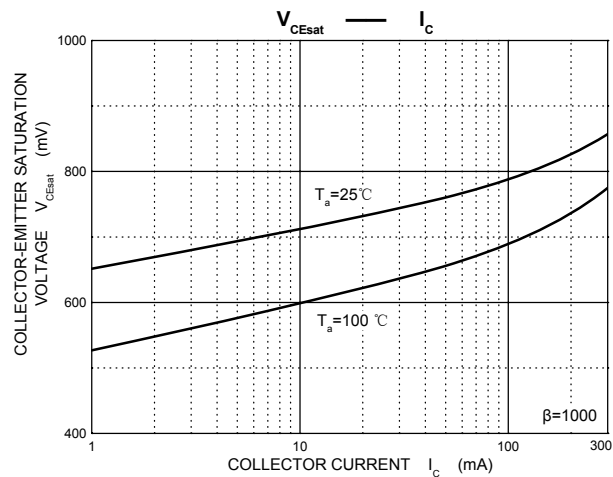
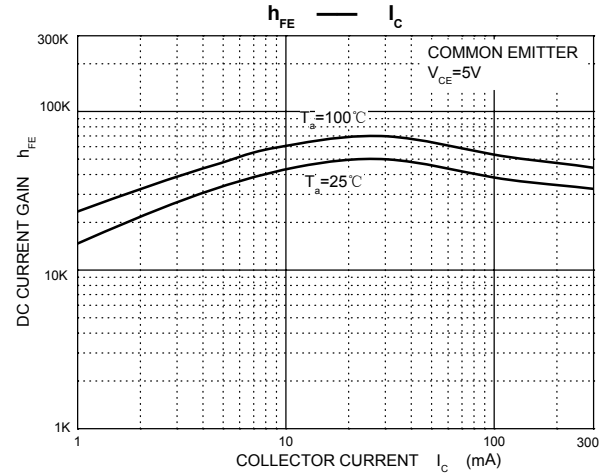
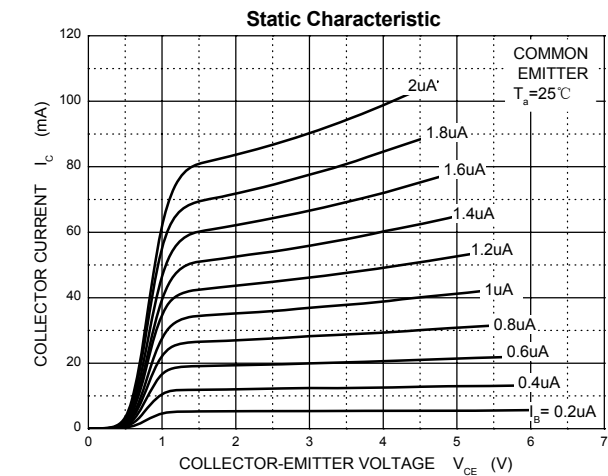


Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

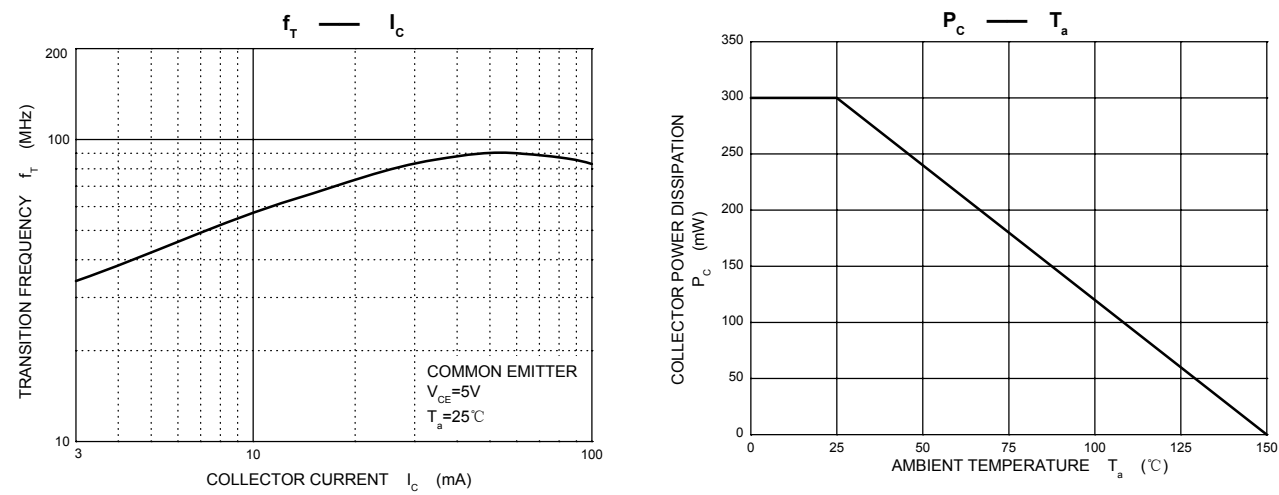
Parameter	Symbol	Test Conditions	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}, I_E=0$	30	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=100\mu\text{A}, I_B=0$	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}, I_C=0$	10	-	V
Collector Cut-off Current	I_{CBO}^*	$C_B=30\text{ V}, I_E=0$	-	0.1	μA
Emitter Cut-off Current	I_{EBO}^*	$E_B=10\text{ V}, I_C=0$	-	0.1	μA
DC Current Gain	$h_{FE(1)}^*$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10000	-	
	$h_{FE(2)}^*$	$V_{CE}=5\text{V}, I_C=100\text{mA}$	20000	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}^*$	$C=100\text{mA}, I_B=0.1\text{mA}$	-	1.5	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}^*$	$C=100\text{mA}, I_B=0.1\text{mA}$	-	2	V
Base-Emitter Voltage	V_{BE}^*	$C_E=5\text{V}, I_C=100\text{mA}$	-	2.0	V
Transition Frequency	f_T	$V_{CE}=5\text{V}, I_C=10\text{mA}$ $f=100\text{MHz}$	125	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$	-	12	pF

* Pulse Test : pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2\%$.

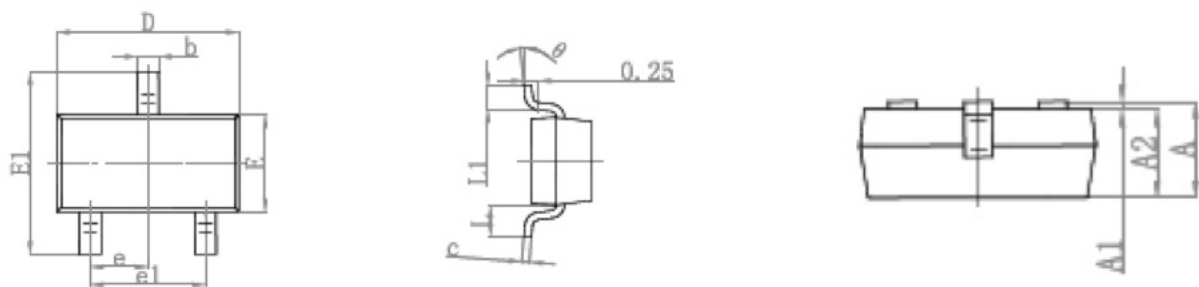
Typical Electrical Characteristic Curves



Typical Electrical Characteristic Curves

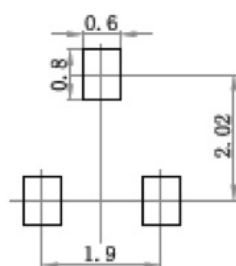


Package Outline Dimensions SOT-23



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Suggested Pad Layout



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