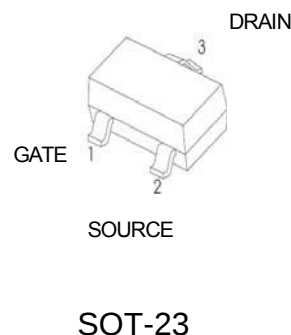
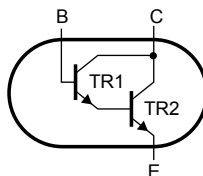


Darlington Transistors

Features

- Medium current (max. 500 mA)
- Low voltage (max. 60 V)
- High DC current gain (min. 20 000).
- Marking FFt



SOT-23

Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector - Base Voltage	V_{CB0}	40	V
Collector - Emitter Voltage	V_{CE0}	30	
Emitter - Base Voltage	V_{EB0}	10	
Collector Current - Continuous	I_C	500	mA
Collector Current - Pulse	I_{CP}	800	
Base Current	I_B	100	
Collector Power Dissipation	P_C	150	mW
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	500	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65 to 150	

Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector- base breakdown voltage	V_{CB0}	$I_C = 100 \mu\text{A}$, $I_E = 0$	40			V
Collector- emitter breakdown voltage	V_{CE0}	$I_C = 1 \text{ mA}$, $I_B = 0$	30			
Emitter - base breakdown voltage	V_{EB0}	$I_E = 100 \mu\text{A}$, $I_C = 0$	10			
Collector-base cut-off current	I_{CBO}	$V_{CB} = 30 \text{ V}$, $I_E = 0$			100	nA
Emitter cut-off current	I_{EBO}	$V_{EB} = 10 \text{ V}$, $I_C = 0$			100	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 100 \text{ mA}$, $I_B = 0.1 \text{ mA}$			1	V
Base - emitter saturation voltage	$V_{BE(sat)}$	$I_C = 100 \text{ mA}$, $I_B = 0.1 \text{ mA}$			1.6	
Base - emitter on-state voltage	$V_{BE(on)}$	$V_{CE} = 5 \text{ V}$, $I_C = 10 \text{ mA}$			1.4	
DC current gain	h_{FE}	$V_{CE} = 5 \text{ V}$, $I_C = 1 \text{ mA}$	4000			
		$V_{CE} = 5 \text{ V}$, $I_C = 10 \text{ mA}$	10000			
		$V_{CE} = 5 \text{ V}$, $I_C = 100 \text{ mA}$	20000			
Transition frequency	f_T	$V_{CE} = 5 \text{ V}$, $I_C = 30 \text{ mA}$, $f = 100 \text{ MHz}$		220		MHz

Typical Characteristics

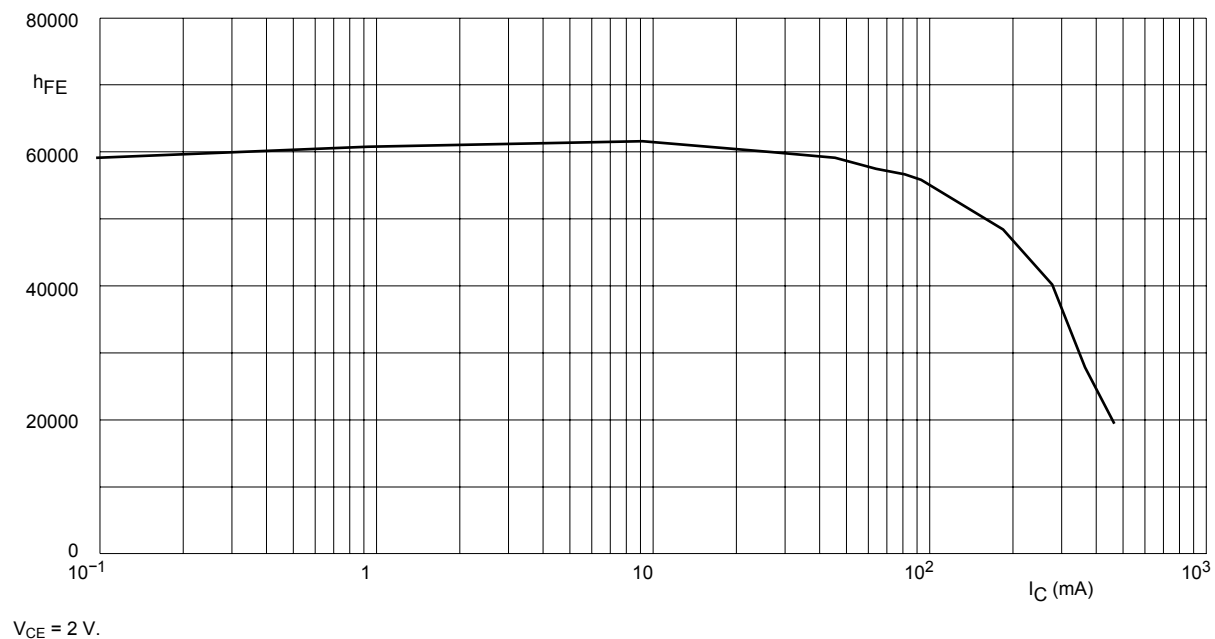
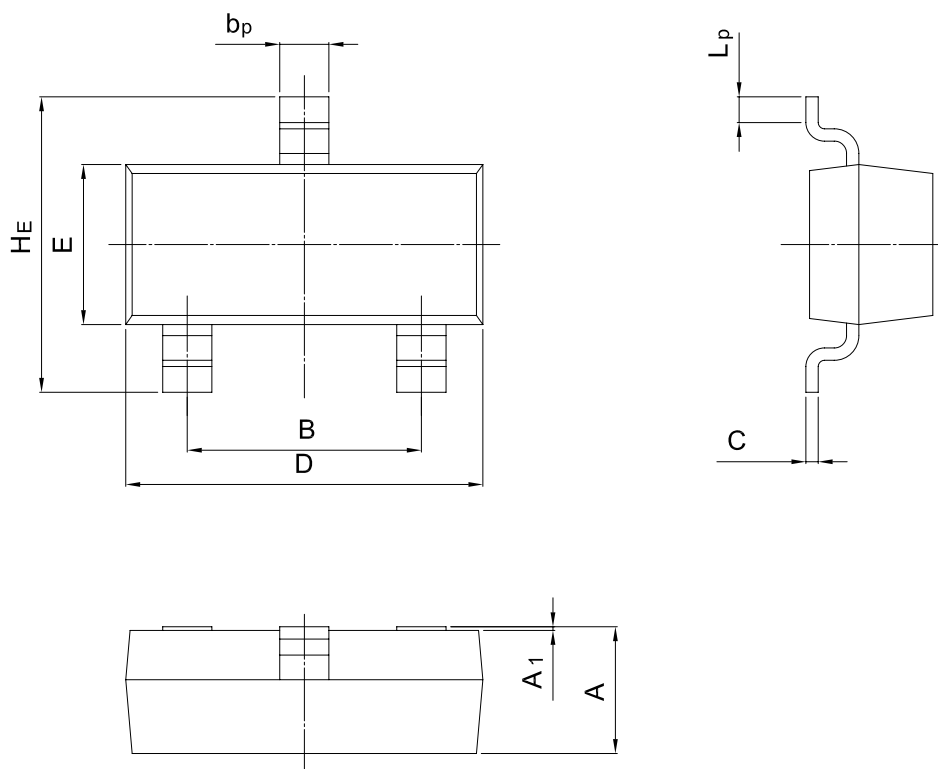


Fig.1 DC current gain; typical values.

PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



UNIT	A	B	b _p	C	D	E	H _E	A ₁	L _p
mm	1.40 0.95	2.04 1.78	0.50 0.35	0.19 0.08	3.10 2.70	1.65 1.20	3.00 2.20	0.100 0.013	0.50 0.20

