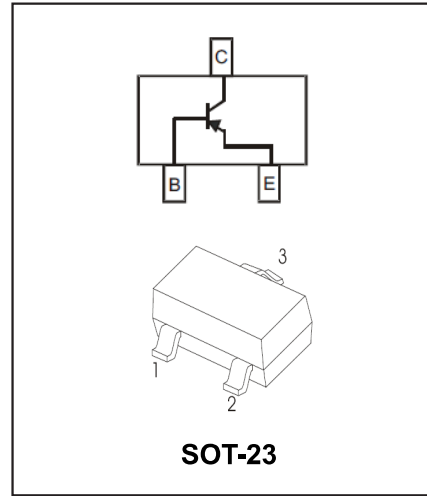


Features

- Low collector-emitter saturation voltage
- High current capability
- Epoxy meets UL-94 V-0 flammability rating
- Marking: ZF
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Applications

- Supply line switching circuits
- Battery management
- DC-DC convertor
- Strobe flash
- Motor and lamp driver



Maximum Ratings (Ta=25°C)

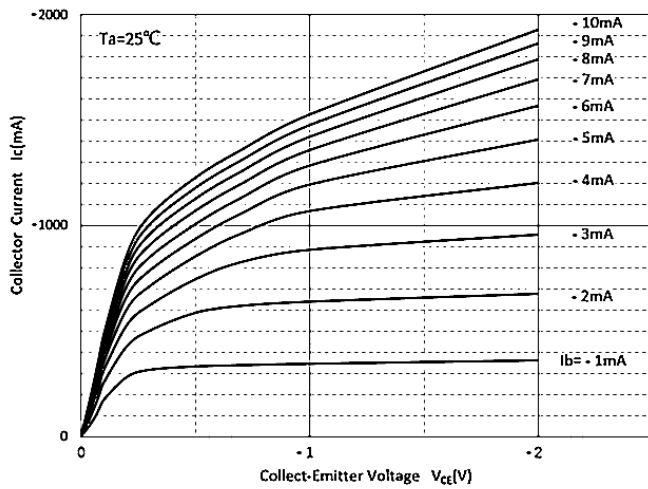
Item	Symbol	Unit	Conditions	Value
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -1\text{mA}$, $I_B = 0$	-40
Collector-Base Voltage	V_{CBO}	V	$I_C = -100\mu\text{A}$, $I_E = 0$	-40
Emitter-Base Voltage	V_{EBO}	V	$I_E = -100\mu\text{A}$, $I_C = 0$	-5
Collector Current	I_C	A		-2
Collector Power Dissipation	P_C	mW		300
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		417
Operation Junction Temperature	T_J	°C		150
Storage Temperature	T_{stg}	°C		-55 to +150

Electrical Characteristics (Ta=25°C)

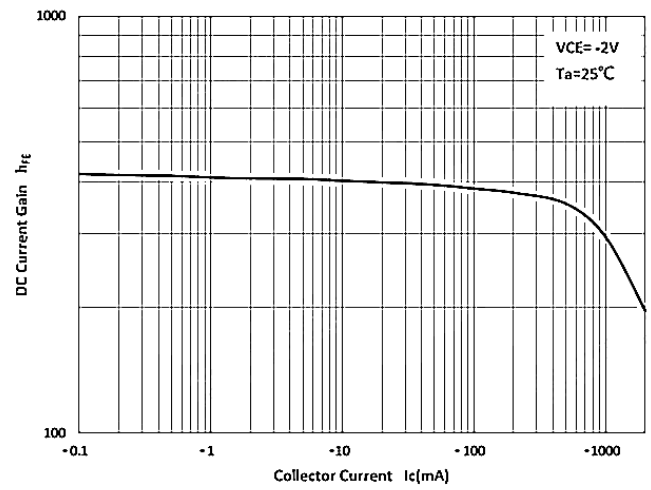
Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -1\text{mA}$, $I_B = 0$	-40	
Collector-Base Voltage	V_{CBO}	V	$I_C = -100\mu\text{A}$, $I_E = 0$	-40	
Emitter-Base Voltage	V_{EBO}	V	$I_E = -100\mu\text{A}$, $I_C = 0$	-5	
Collector-base Cut-off Current	I_{CBO}	nA	$V_{CB} = -30\text{V}$		-100
Base-emitter Cut-off Current	I_{EB0}	nA	$V_{EB} = -4\text{V}$		-100
DC Current Gain	h_{FE}		$I_C = -100\text{mA}$, $V_{CE} = -2\text{V}$	300	
			$I_C = -500\text{mA}$, $V_{CE} = -2\text{V}$	260	
			$I_C = -1\text{A}$, $V_{CE} = -2\text{V}$	210	
			$I_C = -2\text{A}$, $V_{CE} = -2\text{V}$	100	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	mV	$I_C = -100\text{mA}$, $I_B = -1\text{mA}$		-100
	$V_{CE(sat)2}$	mV	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$		-110
	$V_{CE(sat)3}$	mV	$I_C = -750\text{mA}$, $I_B = -15\text{mA}$		-225
	$V_{CE(sat)4}$	mV	$I_C = -1\text{A}$, $I_B = -50\text{mA}$		-225
	$V_{CE(sat)5}$	mV	$I_C = -2\text{A}$, $I_B = -200\text{mA}$		-350
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = -2\text{A}$, $I_B = -200\text{mA}$		-1.1
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	V	$I_C = -100\text{mA}$, $V_{CE} = -2\text{V}$		-0.75
Transition frequency	f_T	MHz	$I_C = -100\text{mA}$, $V_{CE} = -10\text{V}$, $f = 100\text{MHz}$	100	

Characteristics(Typical)

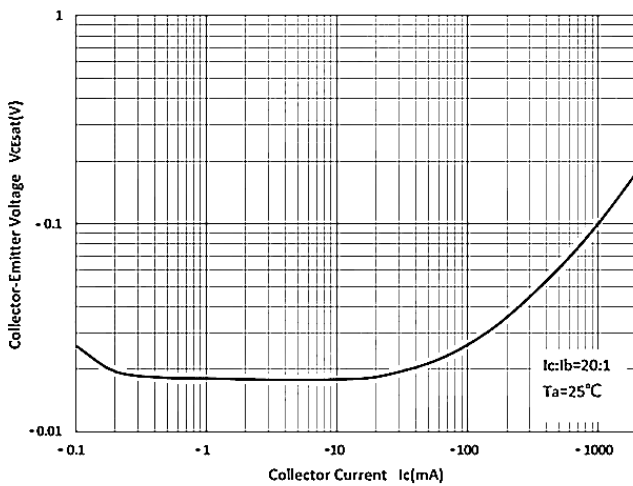
Static Characteristic



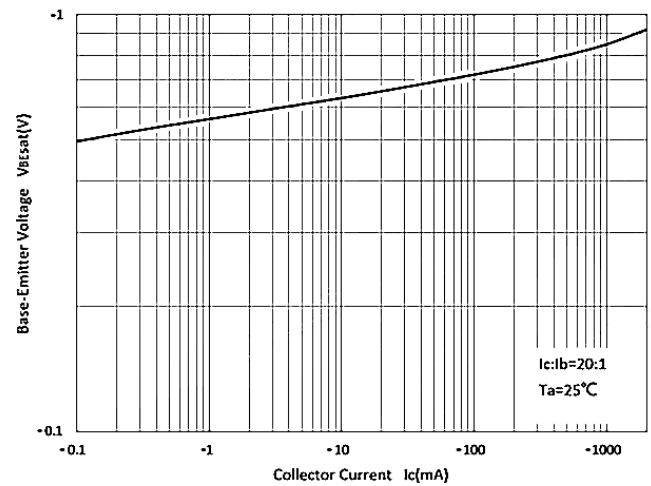
DC Current Gain



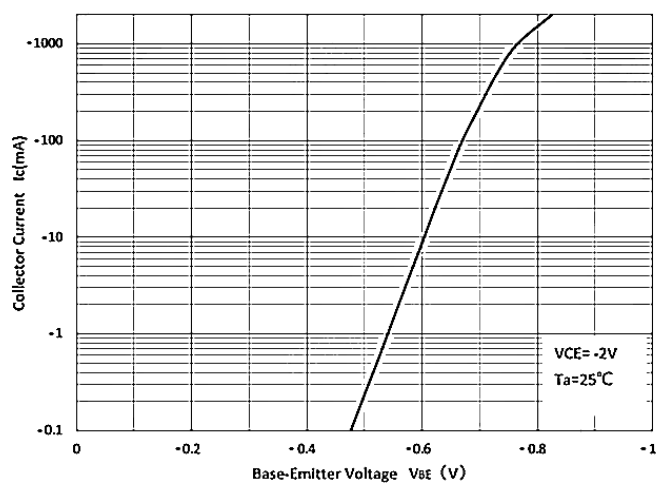
Collector-Emitter Saturation Voltage



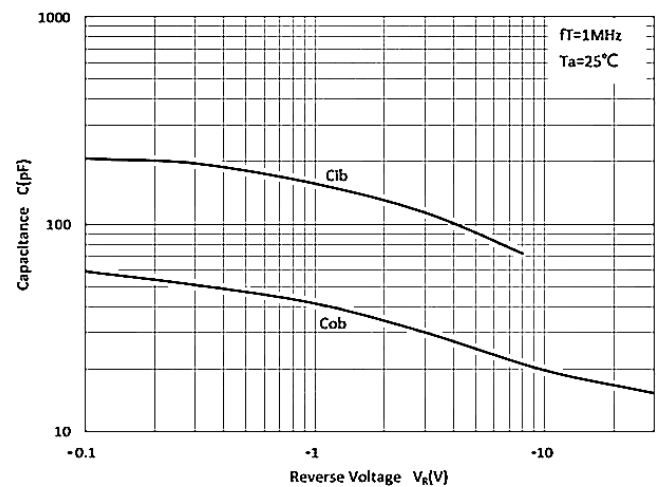
Base-Emitter Saturation Voltage



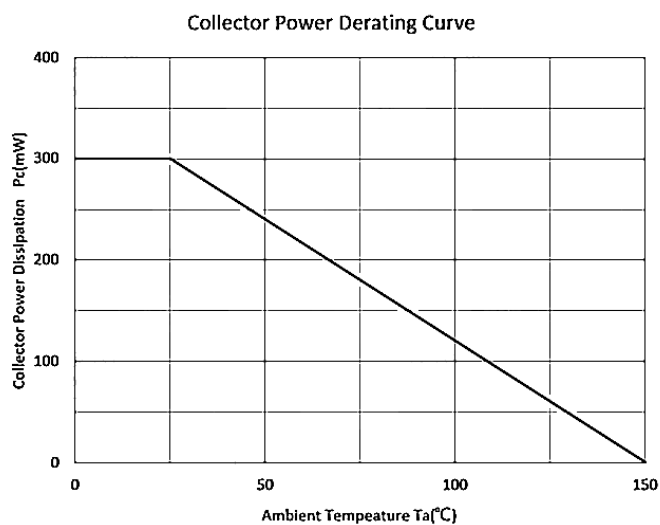
Base-Emitter On Voltage



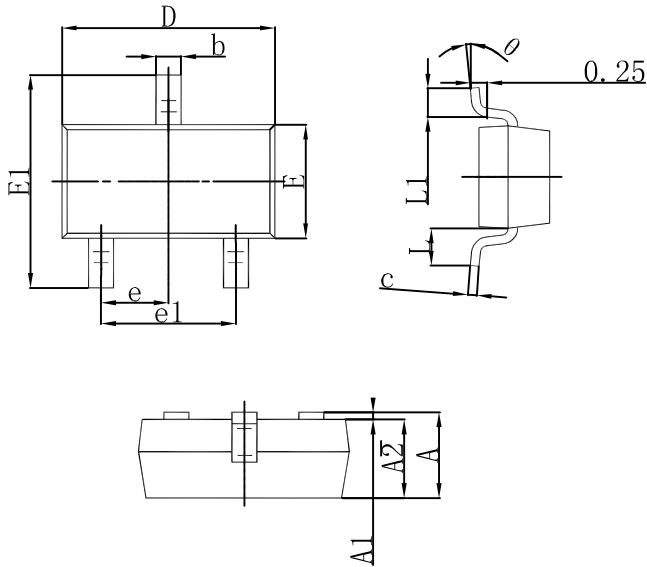
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Characteristics(Typical)

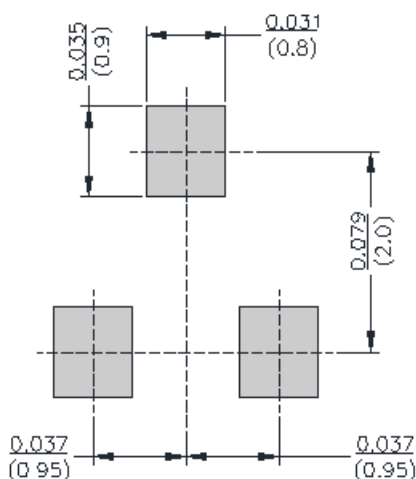


SOT-23 Package Outline Dimensions



Symbol	Dimensions In		Dimensions In	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.150	0.000	0.006
A2	0.900	1.100	0.035	0.043
b	0.300	0.600	0.012	0.024
c	0.080	0.200	0.003	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.200	2.600	0.087	0.102
e	0.950TYP.		0.037TYP.	
e1	1.700	2.000	0.070	0.079
L	0.550REF.		0.022REF.	
L1	0.300	0.500	0.012	0.020
θ	0 °	8 °	0 °	8 °

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.