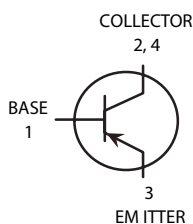


PNP Silicon Planar High Current Transistor

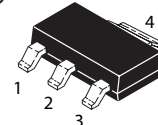
Pb Lead(Pb)-Free

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SOT-223

1.BASE
2.COLLECTOR
3.EMITTER
4.COLLECTOR



ABSOLUTE MAXIMUM RATINGS (T_A=25°C)

Rating	Symbol	Value	Unit
Collector to Base Voltage	V _{CB0}	-100	V
Collector to Emitter Voltage	V _{CEO}	-60	V
Collector to Base Voltage	V _{EBO}	-6	V
Collector Current	I _C (DC)	-5	A
Collector Current	I _C (Pulse)	-15	A
Total Device Dissipation T _A =25°C	P _D	3	W
Junction Temperature	T _j	+150	°C
Storage, Temperature	T _{stg}	-55 to +150	°C

*Device mounted in a typical manner on a P.C.B with copper 4 inches x 4 inches(min).

Device Marking

PZT159 =159

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Min	Max	Max	Unit
Collector-Base Breakdown Voltage I _C =-100μA, I _E =0	BV _{CB0}	-100	-	-	V
Collector-Emitter Breakdown Voltage ⁽¹⁾ I _C =-10mA, I _B =0	BV _{CEO}	-60	-	-	V
Emitter-Base Breakdown Voltage I _E =-100μA, I _C =0	BV _{EBO}	-6	-	-	V
Collector Cut-Off Current V _{CB} =-80V, I _E =0	I _{CB0}	-	-	-50	nA
Collector Cut-Off Current V _{CES} =-60V	I _{CES}	-	-	-50	nA
Emitter-Cut-Off Current V _{EB} =-6V, I _C =0	I _{EBO}	-	-	-10	nA

ELECTRICAL CHARACTERISTICS (T_A=25°C Unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
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ON CHARACTERISTICS⁽¹⁾

DC Current Gain V _{CE} =-1V, I _C =-10mA	h _{FE1}	100	200	-	
V _{CE} =-1V, I _C =-2A	h _{FE2}	100	200	300	-
V _{CE} =-1V, I _C =-5A	h _{FE3}	75	90	-	-
V _{CE} =-1V, I _C =-10A	h _{FE4}	10	25	-	-
Collector-Emitter Saturation Voltage I _C =-100mA, I _B =-10mA	V _{CE(sat)}	-	-20	-50	mV
I _C =-1A, I _B =-100mA		-	-85	-140	
I _C =-2A, I _B =-200mA		-	-155	-210	
I _C =-5A, I _B =-500mA		-	-370	-460	
Base-Emitter Saturation Voltage I _C =-5A, I _B =-500mA	V _{BE(sat)}	-	-1.08	-1.24	V
Base-Emitter On Voltage V _{CE} =-1V, I _C =-5A	V _{BE(on)}	-	-0.935	-1.07	V

DYNAMIC CHARACTERISTICS

Transition Frequency V _{CE} =-10V, I _C =-100mA, f=50MHz	f _T	-	120	-	MHz
Output Capacitance V _{CB} =-10V, I _E =0, f=1MHz	C _{ob}	-	74	-	pF

SWITCHING TIMES

Switching Times V _{CC} =-10V, I _C =-2A, I _{B1} =I _{B2} =-200mA	t _{on}	-	82	-	ns
	t _{off}	-	350	-	

Note 1. Pulse Test : Pulse width < 300μs, Duty cycle ≤ 20%.

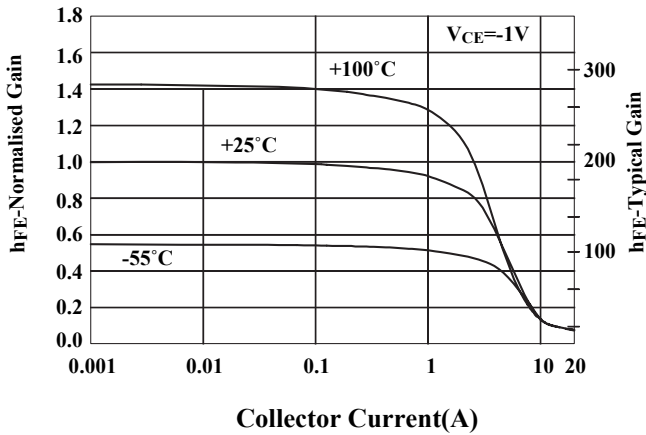


Fig.1 Current Gain - Collector Current

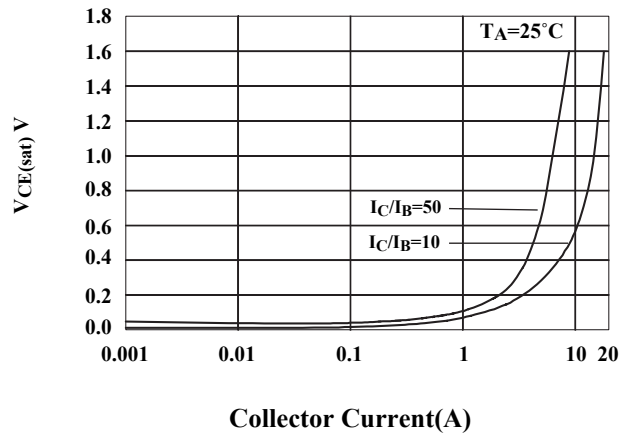


Fig.2 Saturation Voltage - Collector Current

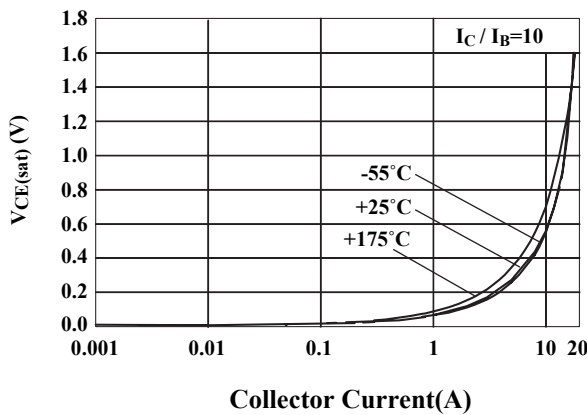


Fig.3 Saturation Voltage - Collector Current

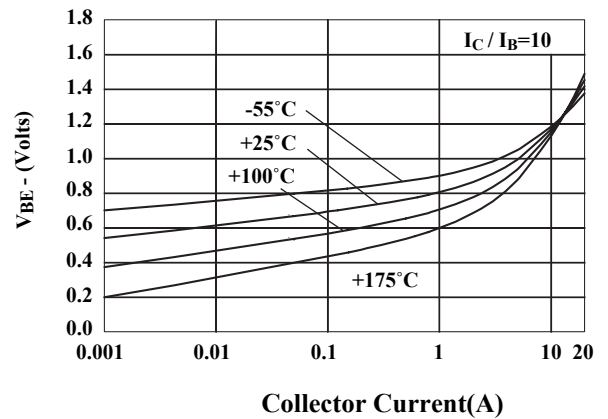


Fig.4 Saturation Voltage - Collector Current

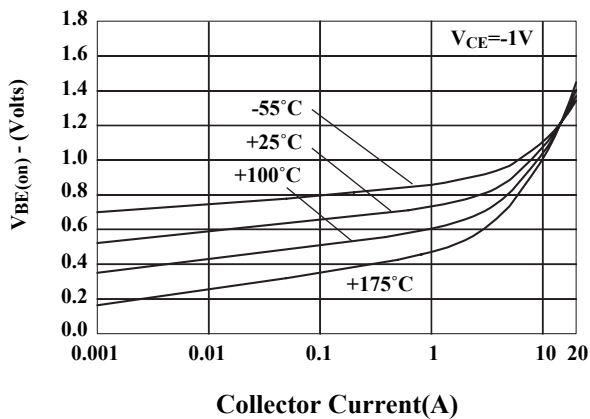


Fig.5 On Voltage - Collector Current

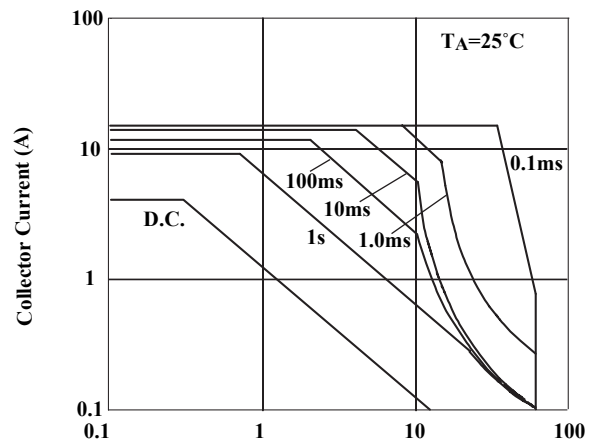
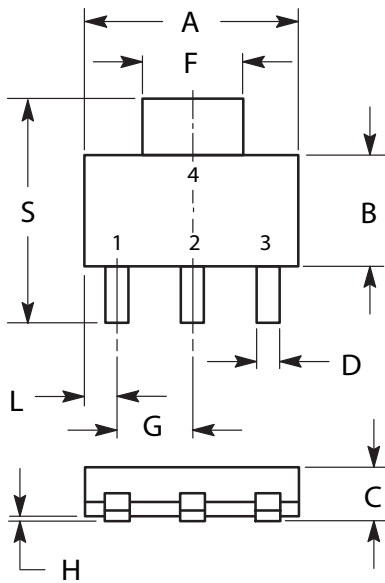


Fig.6 Safe Operating Area

SOT-223 Outline Dimensions

unit:mm



DIM	MILLIMETERS	
	MIN	MAX
A	6.30	6.70
B	3.30	3.70
C	1.50	1.75
D	0.60	0.89
F	2.90	3.20
G	2.20	2.40
H	0.020	0.100
J	0.24	0.35
K	1.50	2.00
L	0.85	1.05
M	0°	10°
S	6.70	7.30