Elektronische Bauelemente

PZT559A-C

PNP Silicon

Silicon Planar Medium Power Transistor

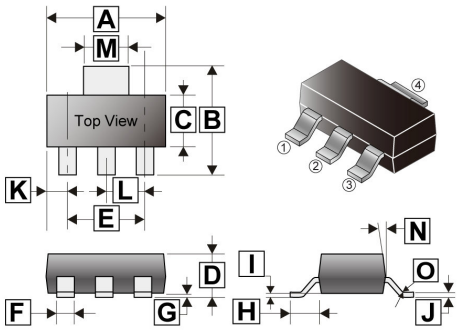
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

DESCRIPTION

The PZT559A-C is designed for general purpose switching and amplifier applications.

SOT-223

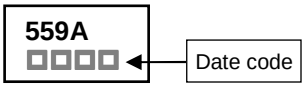


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	5.90	6.70	G	-	0.18
B	6.70	7.30	H	2.00 REF.	
C	3.30	3.80	J	0.20	0.40
D	1.42	1.90	K	1.10 REF.	
E	4.45	4.75	L	2.30 REF.	
F	0.60	0.85	M	2.80	3.20

FEATURES

- 4Amps Continuous Current, Up to 10Amps Peak Current
- Excellent Gain Characteristic Specified Up to 3Amps
- Very Low Saturation Voltages

MARKING

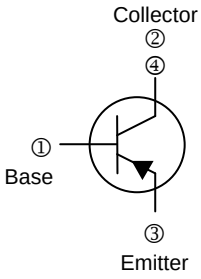


PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-223	2.5K	13 inch

ORDER INFORMATION

Part Number	Type
PZT559A-C	Lead (Pb)-free and Halogen-free



ABSOLUTE MAXIMUM RATINGS (T_A=25℃ unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector-Base Voltage	V_{CBO}	-180	V
Collector-Emitter Voltage	V_{CEO}	-140	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current (DC)	I_C	-4	A
Collector Current (Pulse)	I_{CM}	-10	A
Total Power Dissipation [1]	P_D	3	W
Total Power Dissipation [2]		1.6	
Junction, Storage Temperature	T_J, T_{STG}	150, -55~150	℃

Notes:

1. Surface mounted on 52mm x 52mm x 1.6mm copper pad of FR4 board.
2. Surface mounted on 25mm x 25mm x 1.6mm copper pad of FR4 board.

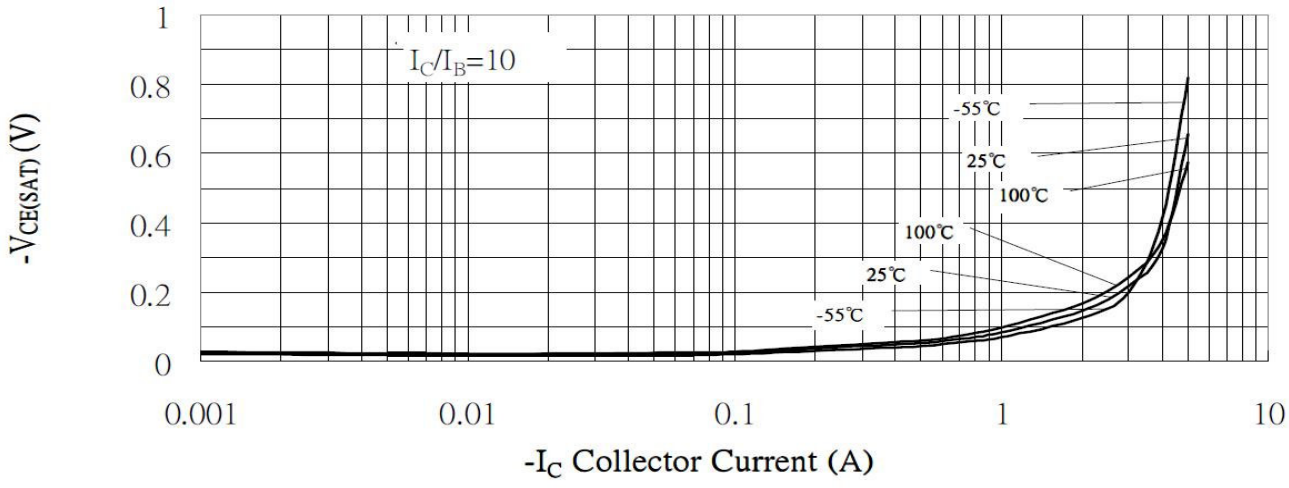
ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise specified)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage		BV_{CBO}	-180	-	-	V	I_C= -100uA, I_E=0
Increased Operating Voltage		BV_{CER}	-180	-	-	V	I_C= -1uA, R_B≦1KΩ
Collector-Emitter Breakdown Voltage		BV_{CEO}	-140	-	-	V	I_C= -10mA, I_B=0
Emitter-Base Breakdown Voltage		BV_{EBO}	-7	-	-	V	I_E= -100uA, I_C=0
Collector Cut-off Current		I_{CBO}	-	-	-20	nA	V_{CB}= -150V, I_E=0
Collector Cut-off Current		I_{CER}	-	-	-20	nA	V_{CE}= -150V, R≦1KΩ
Emitter Cut-off Current		I_{EBO}	-	-	-10	nA	V_{EB}= -6V, I_C=0
Collector-Emitter Saturation Voltage		$V_{CE(sat)1}$	-	-40	-60	mV	I_C= -100mA, I_B= -5mA
		$V_{CE(sat)2}$	-	-55	-80		I_C= -500mA, I_B= -50mA
		$V_{CE(sat)3}$	-	-85	-120		I_C= -1A, I_B= -100mA
		$V_{CE(sat)4}$	-	-250	-360		I_C= -3A, I_B= -300mA
Base-Emitter Voltage		$V_{BE(sat)}$	-	-0.94	-1.04	V	I_C= -3A, I_B= -300mA
		$V_{BE(on)}$	-	-0.83	-0.93		V_{CE}= -5V, I_C= -3A
DC Current Gain		h_{FE1} [1]	100	225	-		V_{CE}= -5V, I_C= -10mA
		h_{FE2} [1]	100	200	300		V_{CE}= -5V, I_C= -1A
		h_{FE3} [1]	45	80	-		V_{CE}= -5V, I_C= -3A
		h_{FE4} [1]	-	5	-		V_{CE}= -5V, I_C= -10A
Transition Frequency		f_T	-	120	-	MHz	V_{CE}= -10V, I_C= -100mA, f=50MHz
Collector Output Capacitance		C_{OB}	-	33	-	pF	V_{CB}= -10V, f=1MHz
Switching Time	Turn-on	T_{on}	-	42	-	nS	V_{CC}= -50V, I_C= -1A, I_{B1}= -I_{B2} = -100mA
	Turn-off	T_{off}	-	636	-		

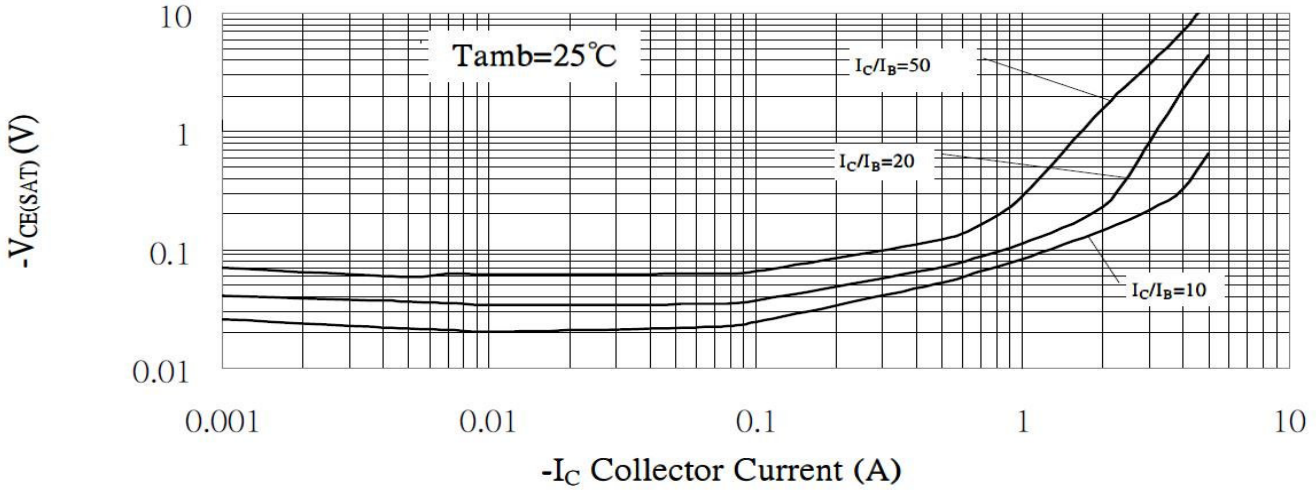
Note:

1. Measured under pulsed condition. Pulse width=300us, Duty cycle≦2%.

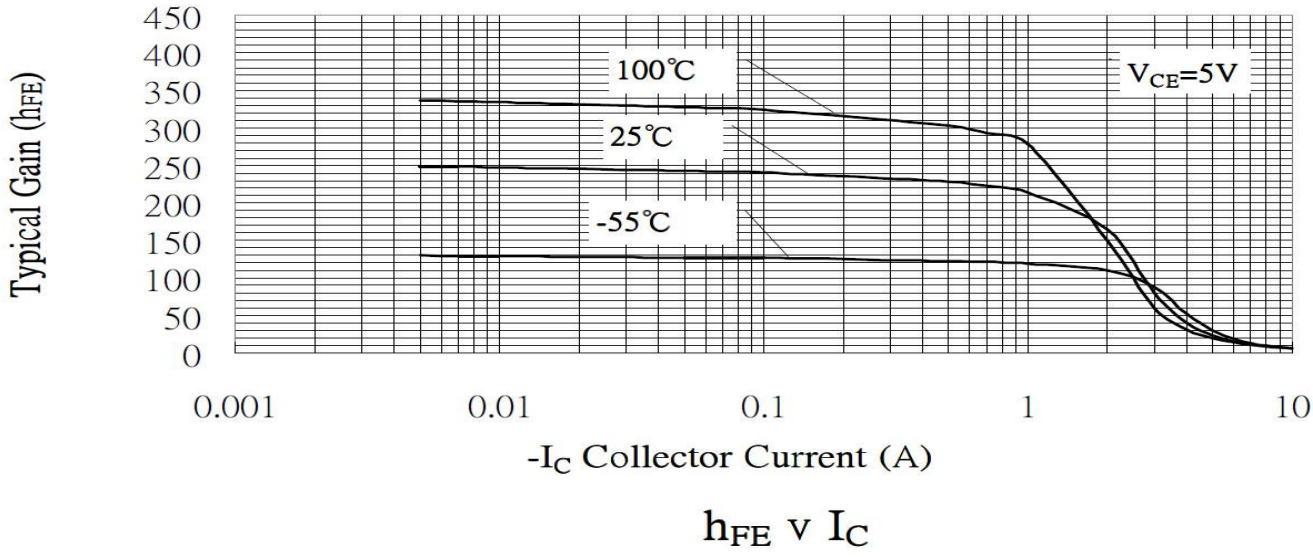
CHARACTERISTIC CURVES



$V_{CE(SAT)}$ v I_C

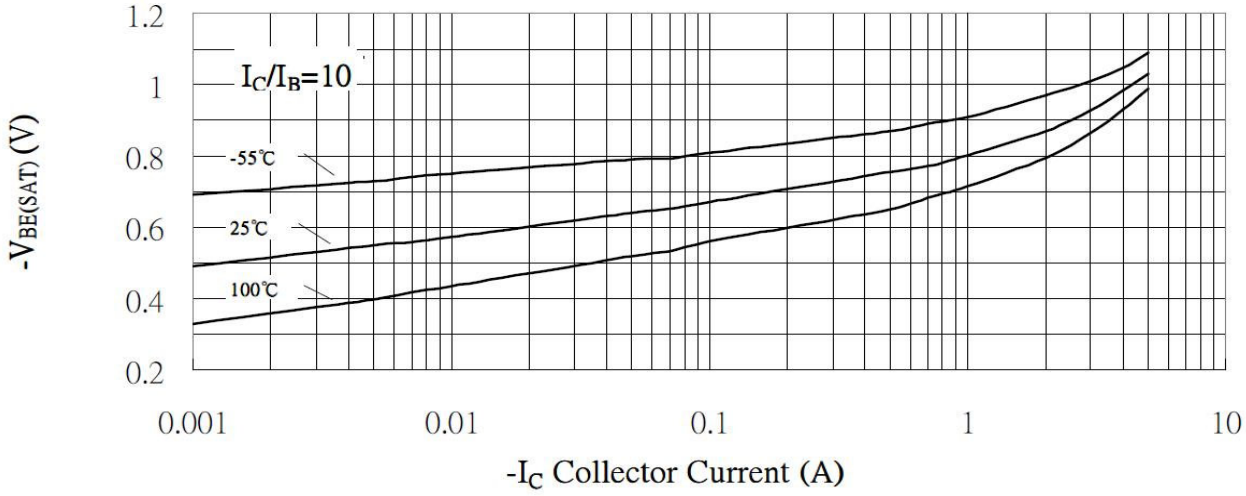


$V_{CE(SAT)}$ v I_C

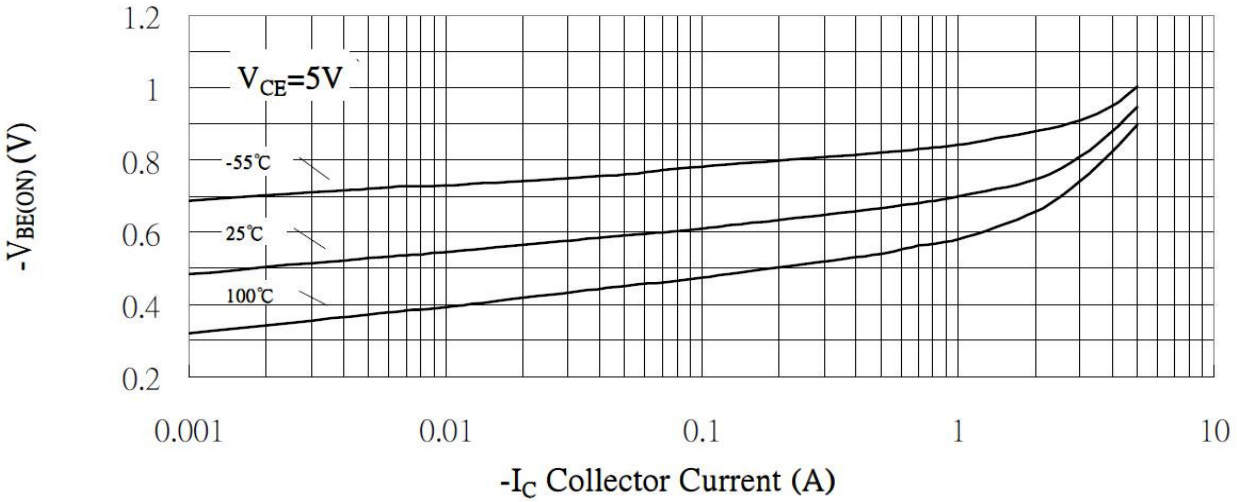


h_{FE} v I_C

CHARACTERISTIC CURVES

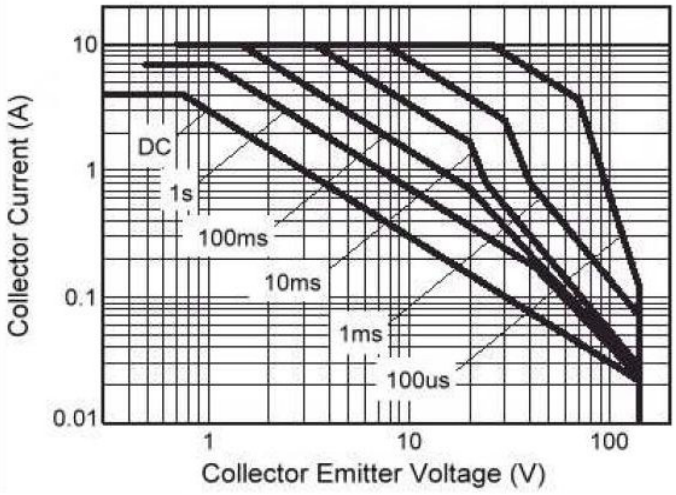


$V_{BE(SAT)}$ v I_C



$V_{BE(ON)}$ v I_C

Safe Operating Area



Transient Thermal Impedance