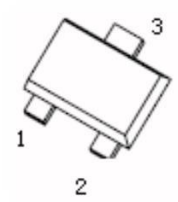
CAN CIRCLE SEMI

SOT-723 Plastic-Encapsulate Transistors

CST3904S723 TRANSISTOR (NPN)

SOT-723



1. BASE
2. EMITTER
3. COLLECTOR

FEATURE

Complementary to CST3906S723

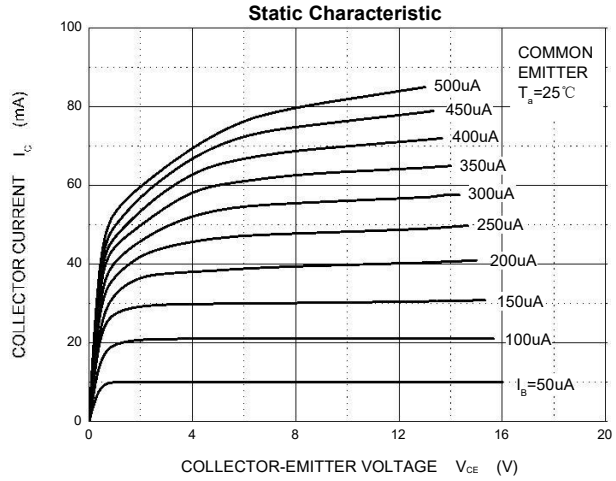
MAXIMUM RATINGS (T_a=25℃ unless otherwise noted)

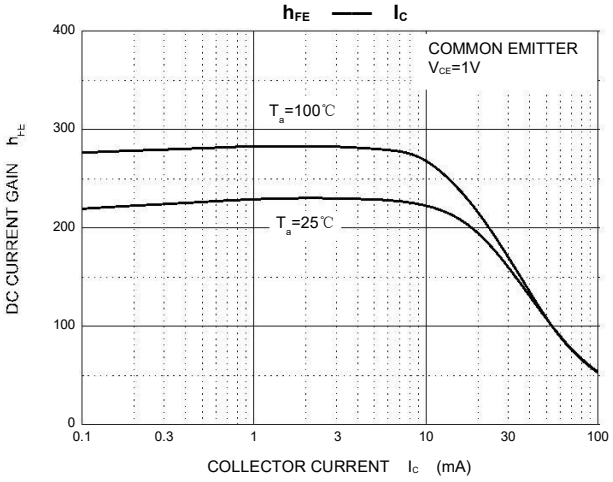
Symbol	Parameter	Value	Unit
V_{CBO}	Collector-Base Voltage	60	V
V_{CEO}	Collector-Emitter Voltage	40	V
V_{EBO}	Emitter-Base Voltage	6	V
I_C	Collector Current -Continuous	0.2	A
P_C	Power Dissipation	0.1	W
$R_{\Theta JA}$	Thermal Resistance from Junction to Ambient	1250	℃/W
T_J ,T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	℃

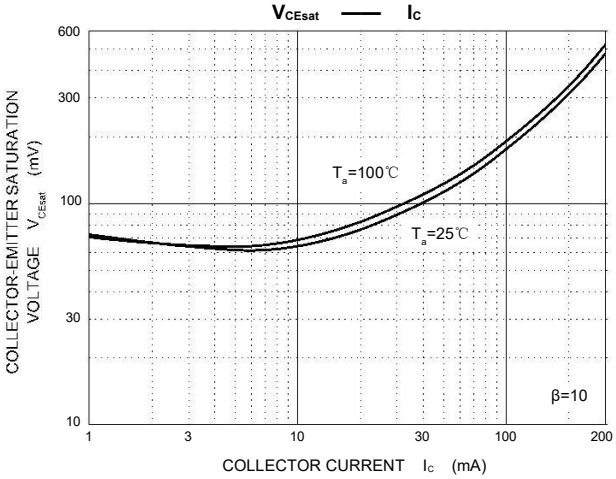
ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise specified)

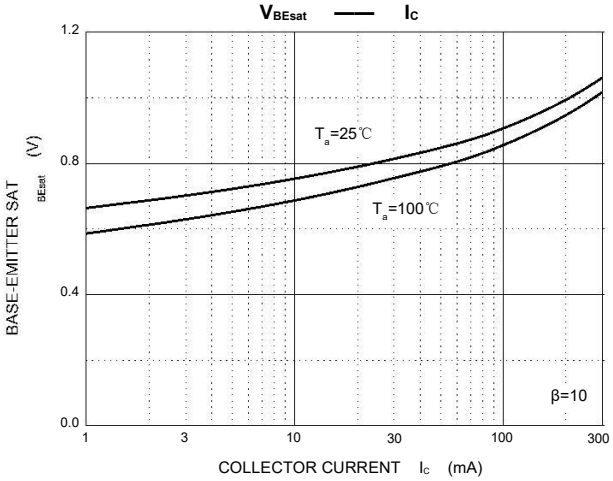
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10μA,I_E=0	60			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=1mA,I_B=0	40			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10μA,I_C=0	6			V
Collector cut-off current	I_{CEX}	V_{CE}=30V,$V_{EB(off)}$=3V			50	nA
Emitter cut-off current	I_{EBO}	V_{EB}=5V,I_C=0			100	nA
DC current gain	$h_{FE(1)}$	V_{CE}=1V,I_C=0.1mA	40			
	$h_{FE(2)}$	V_{CE}=1V,I_C=1mA	70			
	$h_{FE(3)}$	V_{CE}=1V,I_C=10mA	100		300	
	$h_{FE(4)}$	V_{CE}=1V,I_C=50mA	60			
Collector-emitter saturation voltage	$V_{CE(sat)1}$	I_C=10mA,I_B=1mA			0.2	V
	$V_{CE(sat)2}$	I_C=50mA,I_B=5mA			0.3	V
Base-emitter saturation voltage	$V_{BE(sat)1}$	I_C=10mA,I_B=1mA	0.65		0.85	V
	$V_{BE(sat)2}$	I_C=50mA,I_B=5mA			0.95	V
Transition frequency	f_T	V_{CE}=20V,I_C=10mA,f=100MHz	300			MHz
Output capacitance	C_{ob}	V_{CB}=5V,I_E=0,f=1MHz			4	pF
Input capacitance	C_{ib}	V_{EB}=0.5V,I_C=0,f=1MHz			8	pF
Noise figure	NF	V_{CE}=5V,I_C=0.1mA,f=1MHz,R_S=1kΩ			5	dB
Delay time	t_d	V_{CC}=3V,$V_{BE(off)}$=-0.5V, I_C=10mA,I_{B1}=1mA			35	ns
Rise time	t_r				35	ns
Storage time	t_s	V_{CC}=3V,I_C=10mA I_{B1}=I_{B2}=1mA			200	ns
Fall time	t_f				50	ns

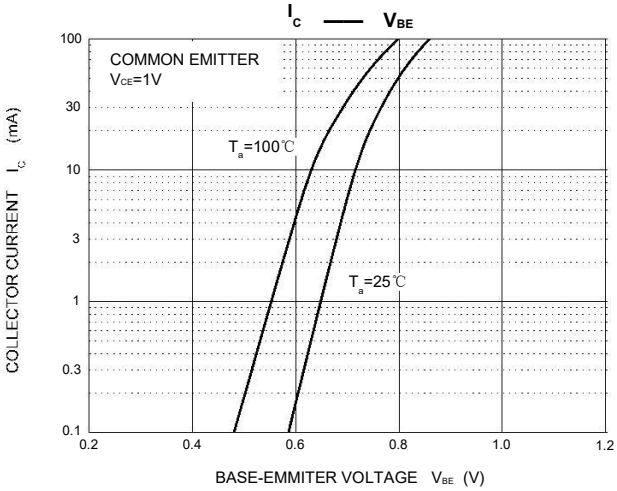
Typical Characteristics

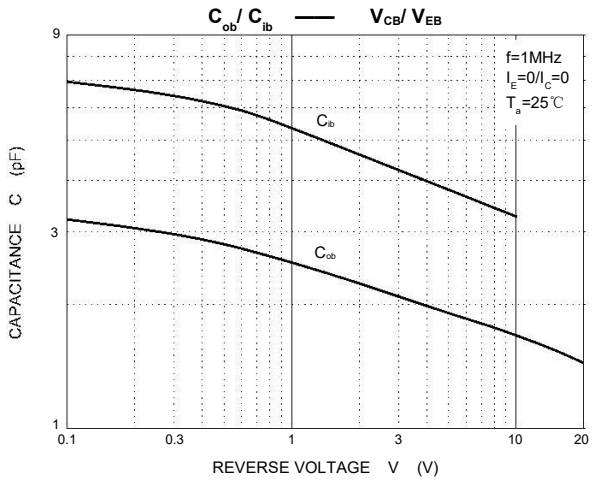


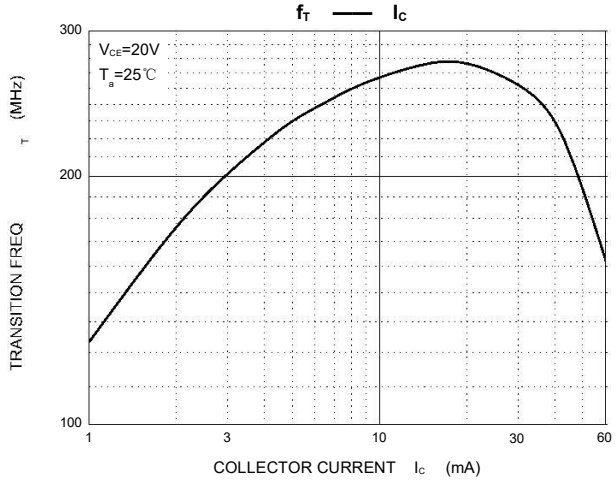


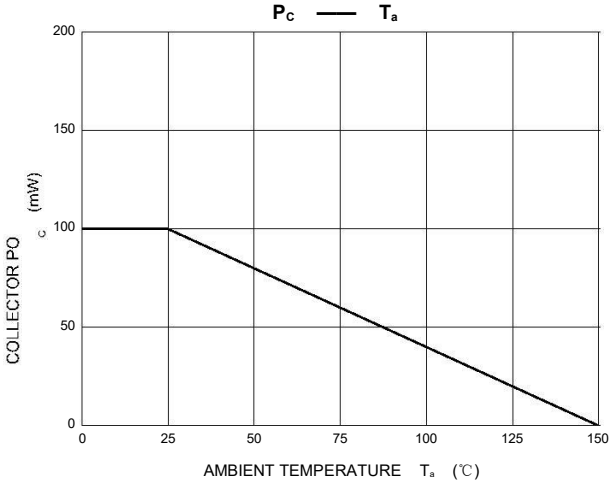




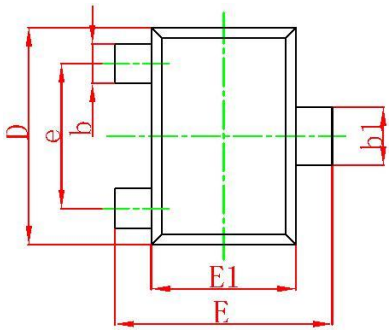


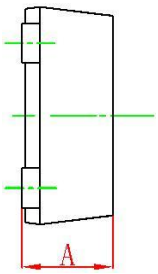


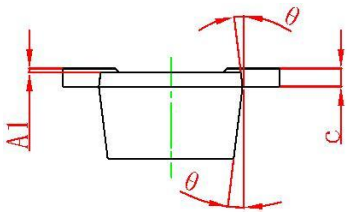




SOT-723 Package Outline Dimensions

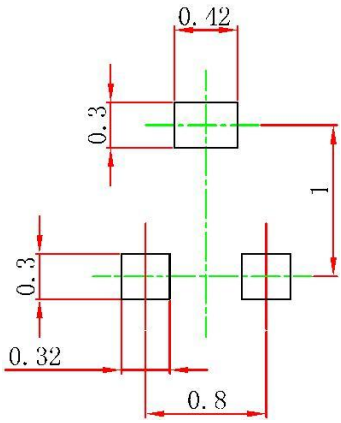






Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.430	0.500	0.017	0.020
A1	0.000	0.050	0.000	0.002
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
c	0.080	0.150	0.003	0.006
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
E1	0.750	0.850	0.030	0.033
e	0.800TYP.		0.031TYP.	
θ	7° REF.		7° REF.	

SOT-723 Suggested Pad Layout



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

Notice

Specifications of the products displayed herein are subject to change without notice. CCS or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in CCS terms and conditions of sale for such products, CCS assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of CCS products including liability or warranties relating to fitness for a particular purpose, merchant ability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications.

Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CCS for any damages resulting from such improper use or sale.