

40V NPN SMALL SIGNAL TRANSISTOR

Features

- ✧ Epitaxial Planar Die Construction
- ✧ Totally Lead-Free & Fully RoHS compliant
- ✧ Halogen and Antimony Free
- ✧ NPN

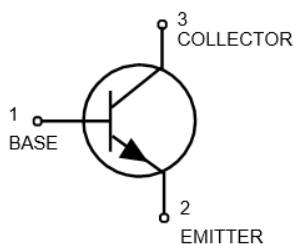
V_{CBO}	60V
V_{CEO}	40V
V_{EBO}	6.0V
I_C	200mA

Applications

- ✧ Medium Power Amplification and Switching

Mechanical Data

- ✧ Package : SOT323



Circuit Diagram



SOT323

Maximum Ratings (Ta=25°C 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	200	mA
P_C	Collector Power Dissipation	200	mW
$R_{\theta JA}$	Thermal Resistance From Junction To Ambient	625	°C/W
T_j	Junction Temperature	-55 ~ +150	°C
T_{stg}	Storage Temperature	-55 ~ +150	°C

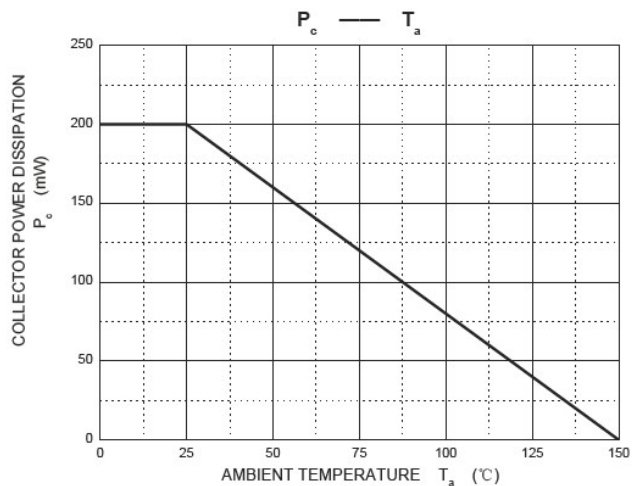
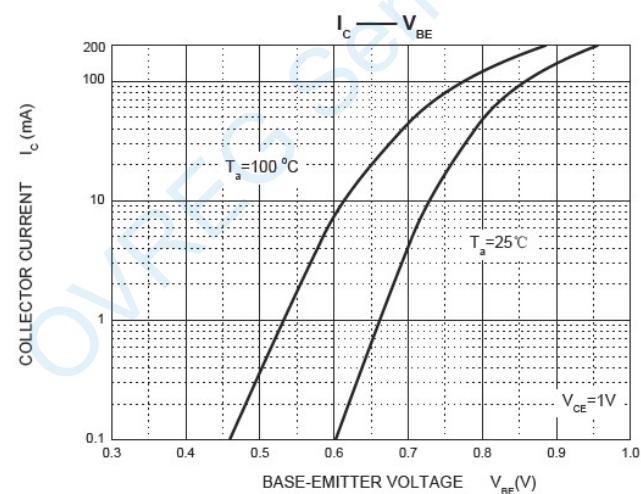
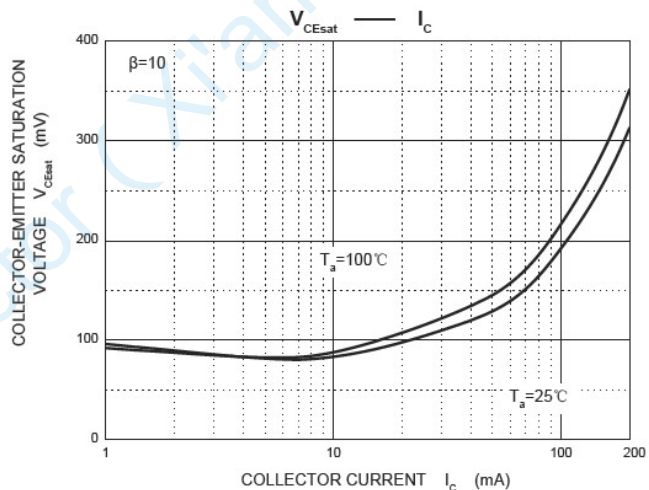
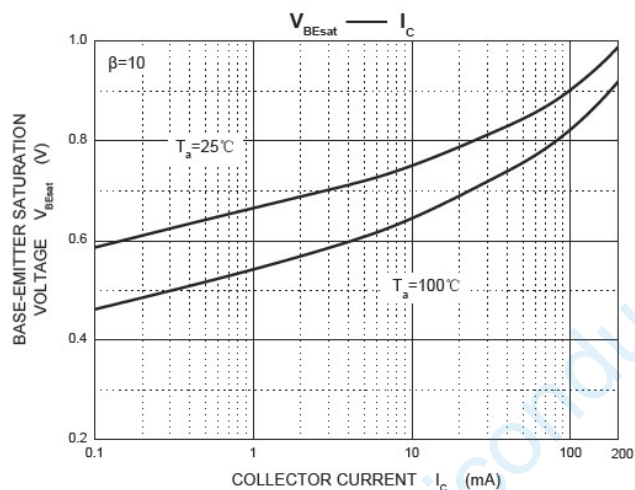
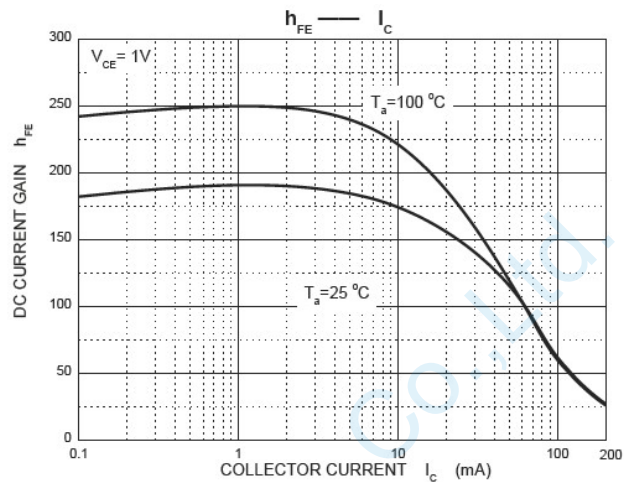
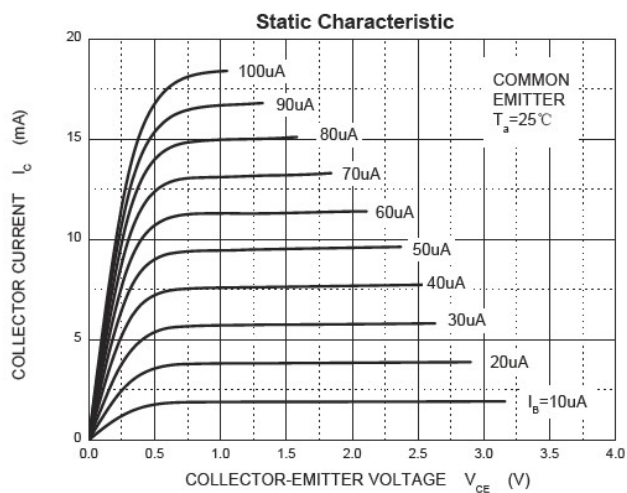
Electrical Characteristics @ 25°C Unless Otherwise Specified

Symbol	Parameter	Test Conditions	Min	Max	Units
V_{CEO}	Collector-Emitter Breakdown Voltage	$I_C=10mA, I_B=0$	40		V
V_{CBO}	Collector-Base Breakdown Voltage	$I_C=10\mu A, I_E=0$	60		V
V_{EBO}	Emitter-Base Breakdown Voltage	$I_E=10\mu A, I_C=0$	6		V
I_{CBO}	Collector-Base Cutoff Current	$V_{CB}=60V, I_E=0$		100	nA
I_{CEX}	Collector- Emitter Cutoff Current	$V_{CE}=30V, V_{EB}=3.0V$		50	nA
I_{EBO}	Collector Cutoff Current	$V_{EB}=5V, I_C=0$		100	nA
$h_{FE(1)}$	DC Current Gain	$I_C=10mA, V_{CE}=10V$	100	300	
$h_{FE(2)}$	DC Current Gain	$I_C=100mA, V_{CE}=10V$	30		
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage	$I_C=50mA, I_B=5mA$		0.3	V
$V_{BE(sat)}$	Base-Emitter Saturation Voltage	$I_C=50mA, I_B=5mA$		0.95	V
f_T	Current Gain-Bandwidth Product	$I_C=10mA, V_{CE}=20V, f=100MHz$	300		MHz

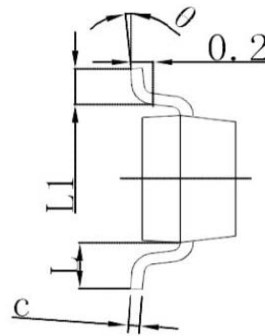
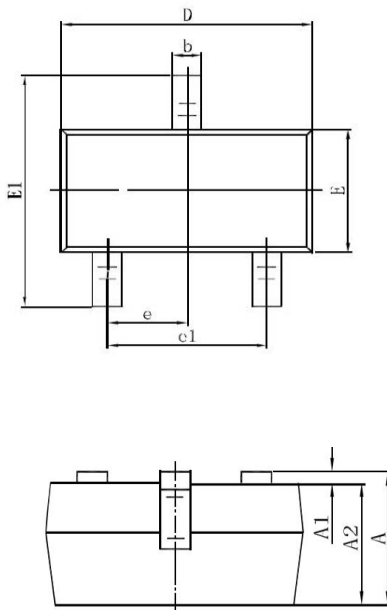
CLASSIFICATION OF $h_{FE(1)}$

RANK	L	H
RANGE	100-200	200-300

Electronics Characteristics ($T_a=25^\circ\text{C}$, unless otherwise noted)

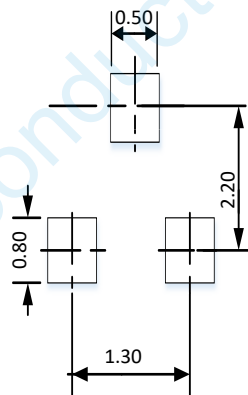


Package information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.200	0.400	0.008	0.016
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

Recommend PCB Layout



Notes: This Pcb Layout Is For Reference Purposes Only

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ	MOQ/internal box	MOQ/carton
OVS3904ST3	GREEN	T/R	7 inch	3k/reel	10reel= 30k/box	4boxes=120k/carton