40V NPN SMALL SIGNAL TRANSISTOR

Features

- ✧ High hFE 300
- ✧ NPN switch transistor
- ✧ Low Cob

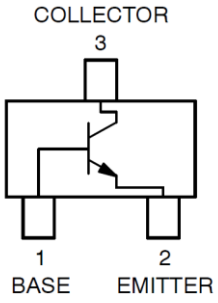
V_{CBO}	75V
I_C	600mA
f_T	300M (Min.)

Applications

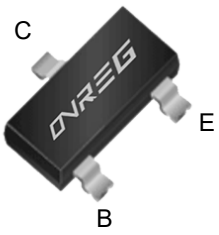
- ✧ Switching Applications

Mechanical Data

- ✧ UL Flame Rating : UL94V-0
- ✧ Reel Size : 7 inch
- ✧ RoHS/WEEE Compliant



Circuit Diagram



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Absolute Maximum Rating (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector to Base Voltage	V_{CBO}	75	V
Collector to Emitter Voltage	V_{CEO}	40	V
Emitter to Base Voltage	V_{EBO}	6	V
Collector Current DC	I_C	600	mA
Collector Power Dissipation	P_D	300	mW
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

Electronics Characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbols	Test Condition	Limits		Unit
			Min	Max	
Collector-base breakdown voltage	$V_{(BR)CBO}$	I_C=10uA, I_E=0	75		V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	40		V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	I_E=10uA, I_C=0	6		V
Collector cut-off current	I_{CEX}	V_{CE}=30V, $V_{EB(off)}$=3V		10	nA
Collector cut-off current	I_{CBO}	V_{CB}=60V, I_E=0		10	nA
Emitter cut-off current	I_{EBO}	V_{EB}=3V, I_C=0		100	nA
DC current gain	$h_{FE(1)}$*	V_{CE}=10V, I_C=150mA	100	300	
	$h_{FE(2)}$*	V_{CE}=10V, I_C=0.1mA	40		
	$h_{FE(3)}$*	V_{CE}=10V, I_C=500mA	42		
Collector-emitter saturation voltage	$V_{CE(sat)1}$*	I_C=500mA, I_B=50mA		1.00	V
Collector-emitter saturation voltage	$V_{CE(sat)2}$*	I_C=150mA, I_B=15mA		0.30	V
Base -emitter saturation voltage	$V_{BE(sat)1}$*	I_C=500mA, I_B=50mA		2.00	V
Base -emitter saturation voltage	$V_{BE(sat)2}$*	I_C=150mA, I_B=15mA		1.20	V
Transition frequency	f_T	V_{CE}=20V, I_C=20mA,f=100MHz	300		MHz
Delay time	td	V_{CC}=30V, $V_{BE(off)}$=-0.5V, I_C=150mA, I_{B1}=15mA		10	nS
Rise time	tr			25	nS
Storage time	ts	V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA		225	nS
Fall time	tf			60	nS

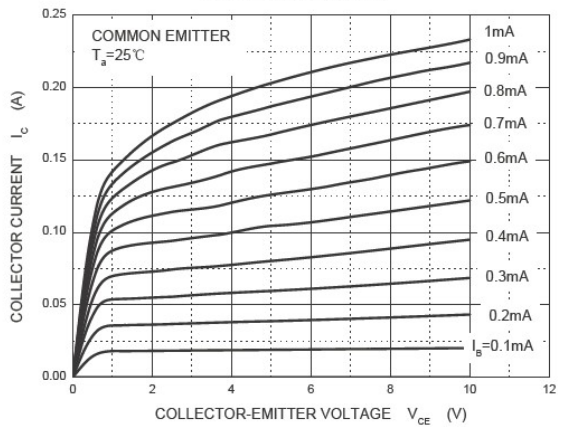
*Pulse test: pulse width≤300us, duty cycle≤2.0%.

CLASSIFICATION OF $h_{FE(1)}$

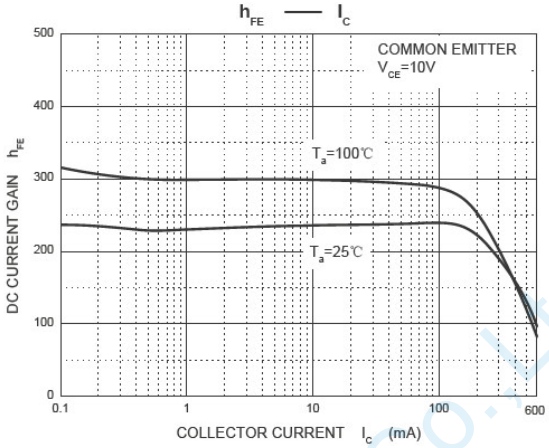
HFE	100-300	
RANK	L	H
RANGE	100-200	200-300

Electronics Characteristics (Ta=25°C, unless otherwise noted)

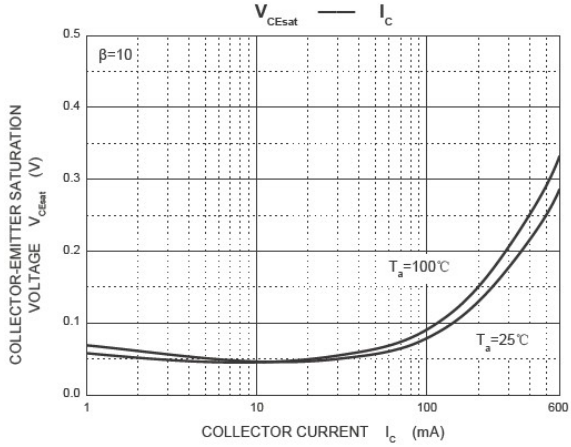
Static Characteristic



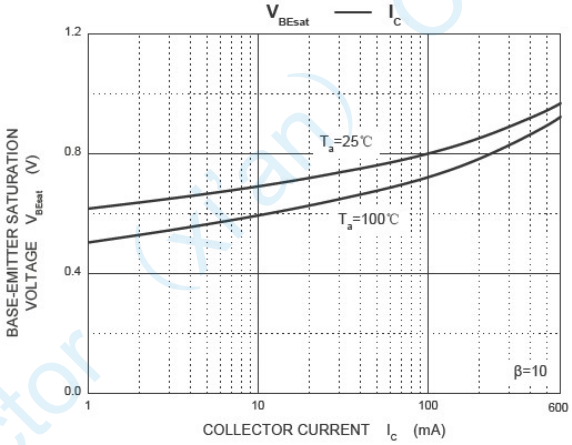
h_{FE} — I_C



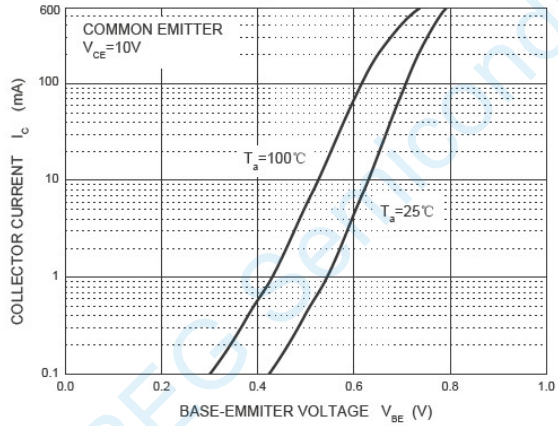
V_{CEsat} — I_C



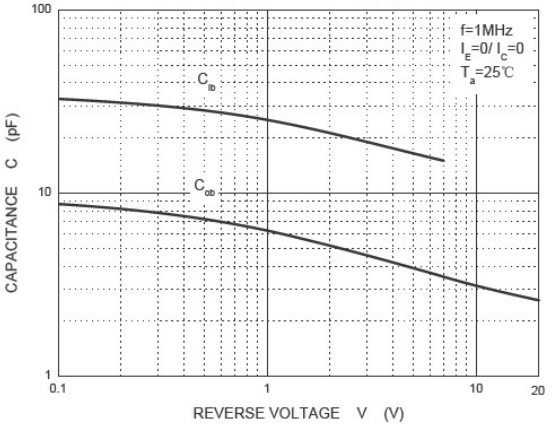
V_{BEsat} — I_C



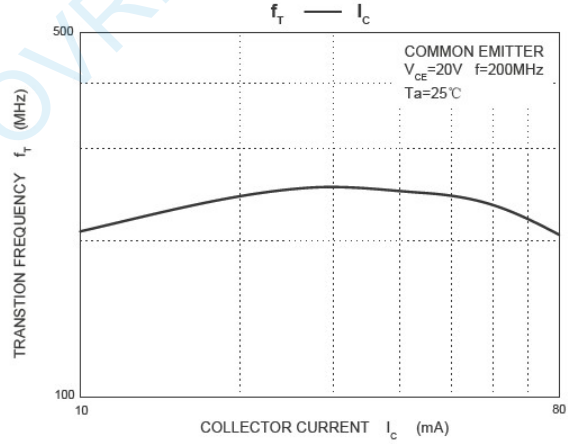
I_C — V_{BE}



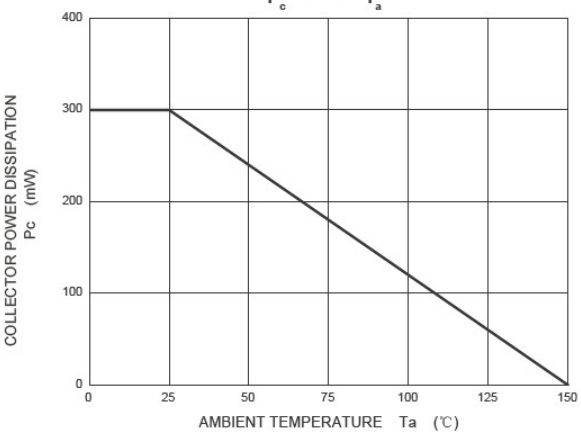
C_{ob} / C_{ib} — V_{CB} / V_{EB}



f_T — I_C

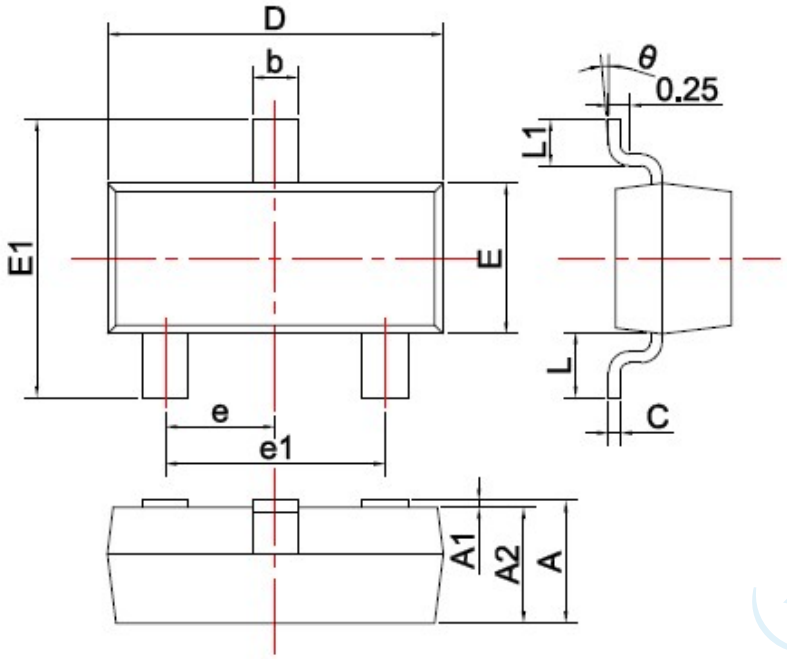


P_c — T_a



Package Information

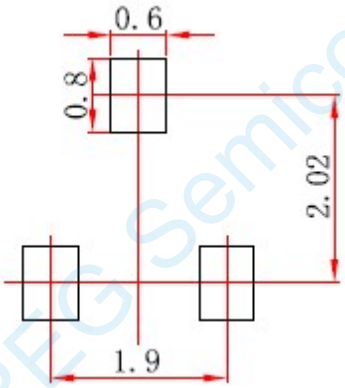
SOT-23



SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	0.900	1.150
A1	0.000	0.100
A2	0.900	1.050
b	0.300	0.500
c	0.080	0.150
D	2.800	3.000
E	1.200	1.400
E1	2.250	2.550
e	0.950TYP	
e1	1.800	2.000
L	0.550REF	
L1	0.300	0.500
θ	0°	8°

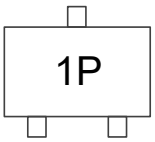
Unit: mm

Recommend PCB Layout



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

Marking



Ordering Information

Part number	Material	Type	Reel size	MOQ
OVS2222T	GREEN	T/R	7 inch	3k/reel