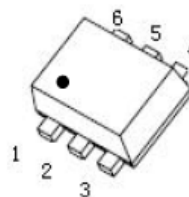


Plastic-Encapsulate Transistors

DUAL TRANSISTOR (NPN+PNP)

FEATURES

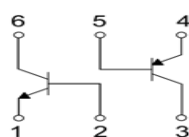
- Epitaxial Die Construction
- MARKING: Z1



SOT-563

MAXIMUM RATINGS TR1 (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	80	V
V _{CEO}	Collector-Emitter Voltage	65	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current –Continuous	0.1	A
P _C	Collector Power Dissipation	200	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C



CHARACTERISTICS of TR1 (NPN Transistor) (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =10μA, I _E =0	80			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	65			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =1μA, I _C =0	6			V
Collector cut-off current	I _{CBO}	V _{CB} =30V, I _E =0			15	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			15	nA
DC current gain	h _{FE}	V _{CE} =5V, I _C =2mA	200		450	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =10mA, I _B =0.5mA			0.25	V
	V _{CE(sat)}	I _C =100mA, I _B =5mA			0.6	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =10mA, I _B =0.5mA		0.7		V
	V _{BE(sat)}	I _C =100mA, I _B =5mA		0.9		V
Base-emitter voltage	V _{BE(on)}	V _{CE} =5V, I _C =2mA	0.58		0.7	V
	V _{BE(on)}	V _{CE} =5V, I _C =10mA			0.72	V
Collector output capacitance	C _{ob}	V _{CB} =10V, I _E =0, f=1MHz			6.0	pF
Transition frequency	f _T	V _{CE} =5V, I _C =10mA, f=100MHz	100			MHz
Noise figure	NF	V _{CE} =5V, I _C =0.2mA, f=1kHz, R _g =2KΩ, Δf=200Hz			10	dB

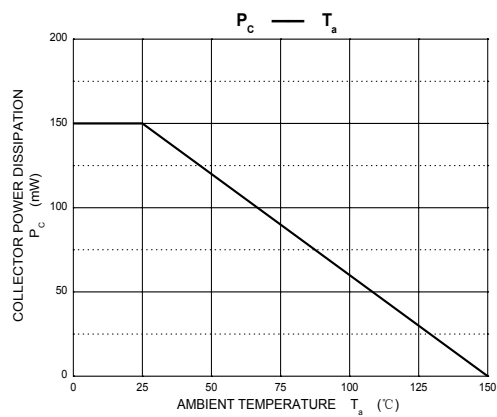
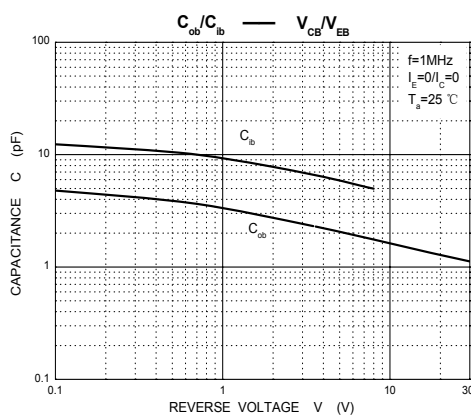
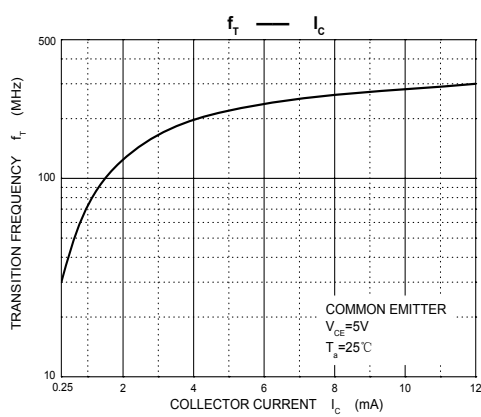
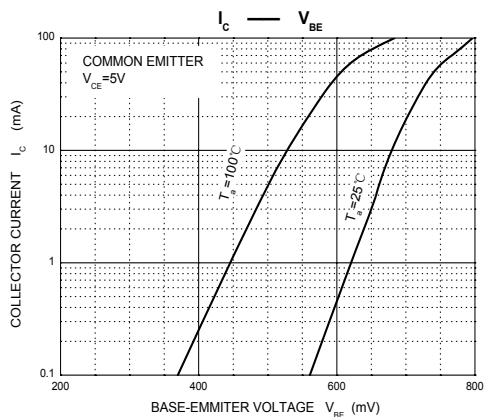
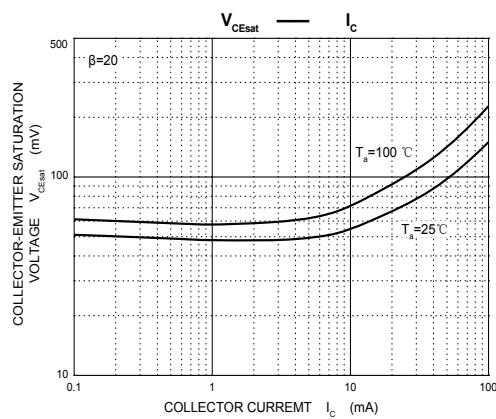
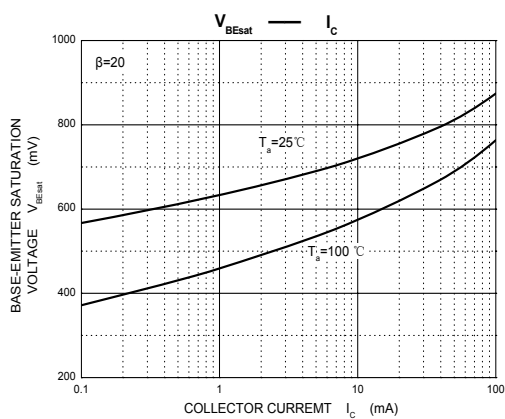
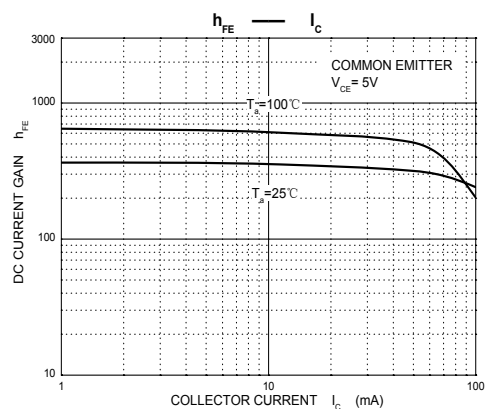
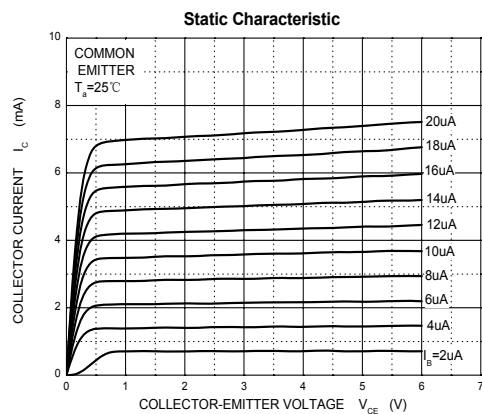
MAXIMUM RATINGS TR2 (T_a=25°C unless otherwise noted)

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	-80	V
V _{CEO}	Collector-Emitter Voltage	-65	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current –Continuous	-0.1	A
P _{C*}	Collector Power Dissipation	200	mW
T _J	Junction Temperature	150	°C
T _{stg}	Storage Temperature	-55-150	°C

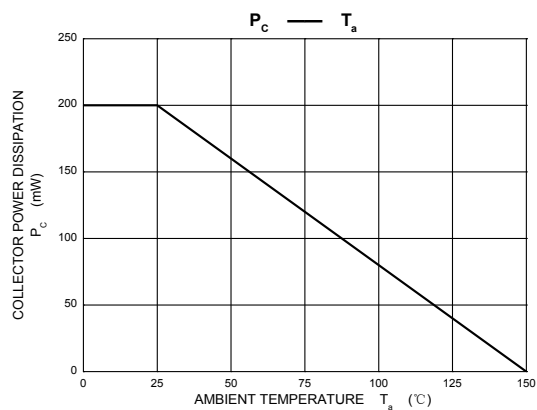
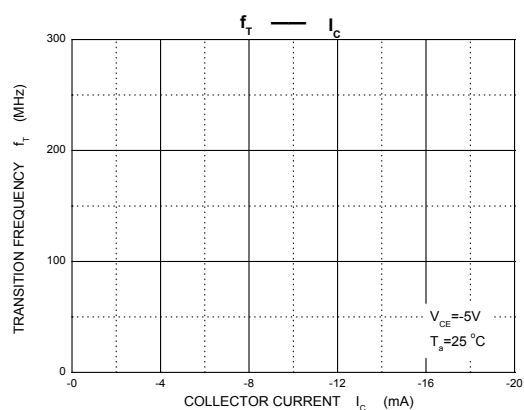
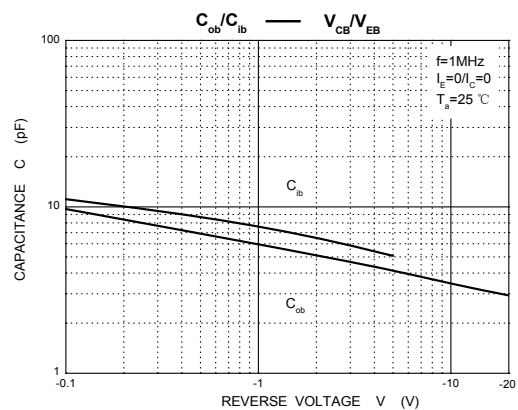
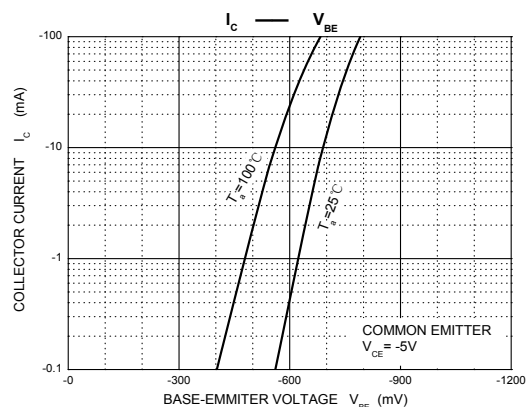
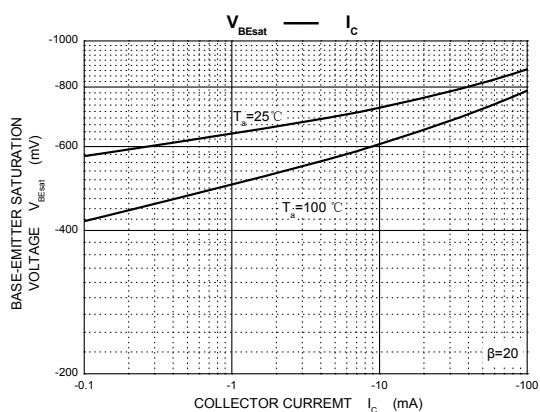
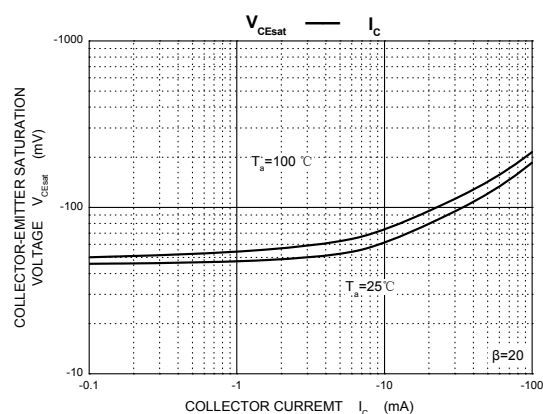
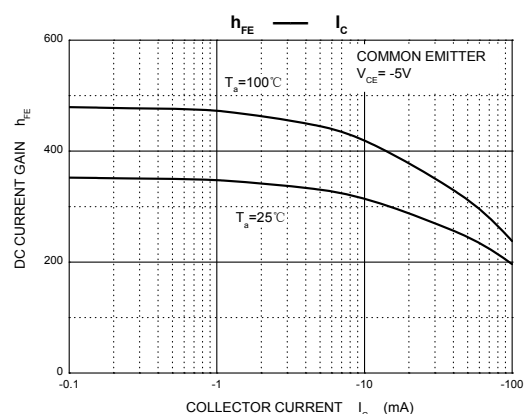
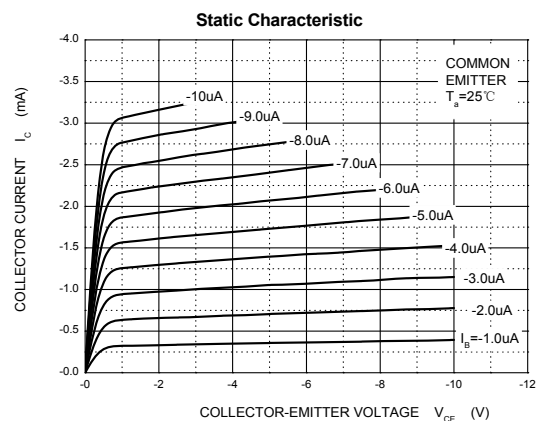
CHARACTERISTICS of TR2 (PNP Transistor) (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	V _{(BR)CBO}	I _C =-10μA, I _E =0	-80			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =-10mA, I _B =0	-65			V
Emitter-base breakdown voltage	V _{(BR)EBO}	I _E =-1μA, I _C =0	-5			V
Collector cut-off current	I _{CBO}	V _{CB} =-30V, I _E =0			-15	nA
Emitter cut-off current	I _{EBO}	V _{EB} =-5V, I _C =0			-15	nA
DC current gain	h _{FE1}	V _{CE} =-5V, I _C =-2mA	220		475	
Collector-emitter saturation voltage	V _{CE(sat)}	I _C =-10mA, I _B =-0.5mA			-0.3	V
	V _{CE(sat)}	I _C =-100mA, I _B =-5mA			-0.65	V
Base-emitter saturation voltage	V _{BE(sat)}	I _C =-10mA, I _B =-0.5mA		-0.7		V
	V _{BE(sat)}	I _C =-100mA, I _B =-5mA			-0.95	V
Base-emitter voltage	V _{BE(on)}	V _{CE} =-5V, I _C =-2mA	-0.6		-0.75	V
	V _{BE(on)}	V _{CE} =-5V, I _C =-10mA			-0.82	V
Collector output capacitance	C _{ob}	V _{CB} =-10V, I _E =0, f=1MHz			4.5	pF
Transition frequency	f _T	V _{CE} =-5V, I _C =-10mA, f=100MHz	100			MHz
Noise figure	NF	V _{CE} =-5V, I _C =-0.2mA, f=1kHz, R _g =2KΩ, Δf=200Hz			10	dB

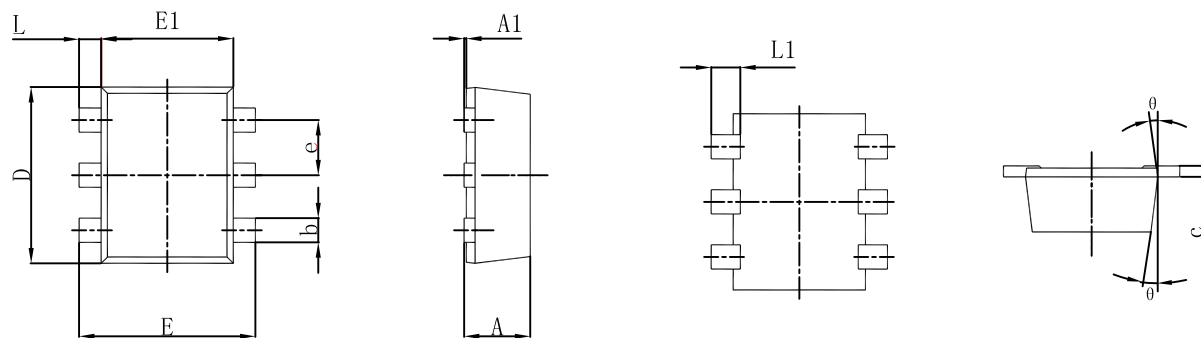
Typical Characteristics



Typical Characteristics

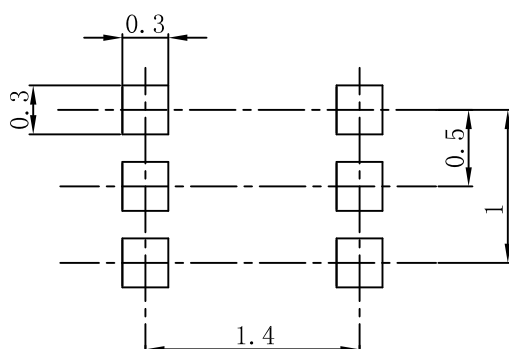


SOT-563 Package Outline Dimensions



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min.	Max.	Min.	Max.
A	0.525	0.600	0.021	0.024
A1	0.000	0.050	0.000	0.002
e	0.450	0.550	0.018	0.022
c	0.090	0.160	0.004	0.006
D	1.500	1.700	0.059	0.067
b	0.170	0.270	0.007	0.011
E1	1.100	1.300	0.043	0.051
E	1.500	1.700	0.059	0.067
L	0.100	0.300	0.004	0.012
L1	0.200	0.400	0.008	0.016
θ	7° REF.		7° REF.	

SOT-563 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.