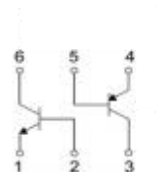
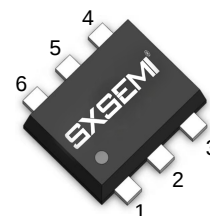


SOT-563



MAKING: KAW

FEATURES

- Epitaxial Die Construction
- Two isolated NPN/PNP(BC847W+BC857W) Transistors in one package

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

Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	50	V
V _{CEO}	Collector-Emitter Voltage	45	V
V _{EBO}	Emitter-Base Voltage	6	V
I _C	Collector Current –Continuous	0.1	A
P _C	Collector Power Dissipation	150	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-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	50			V
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C =10mA, I _B =0	45			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 ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

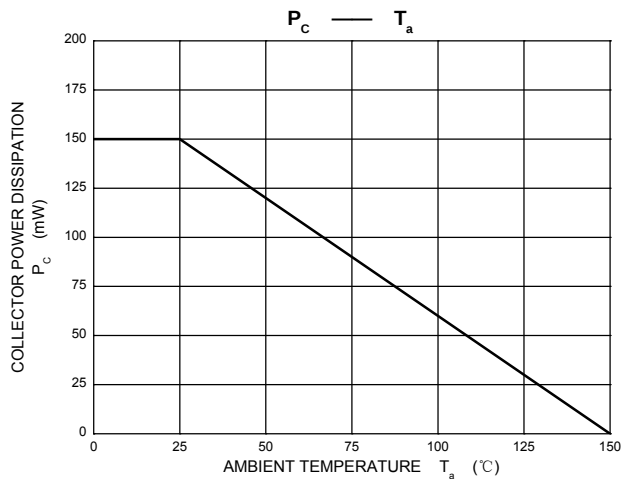
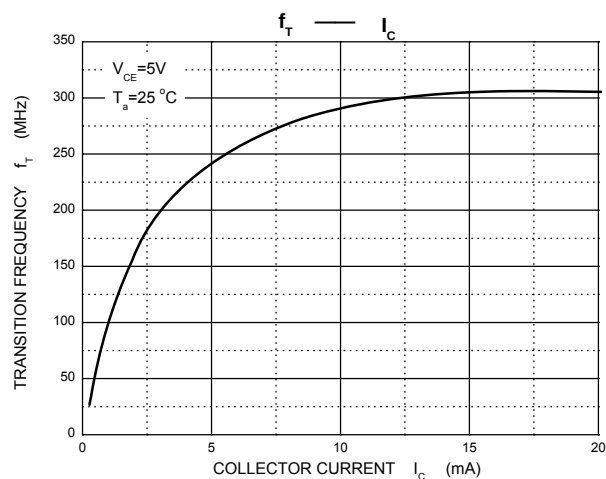
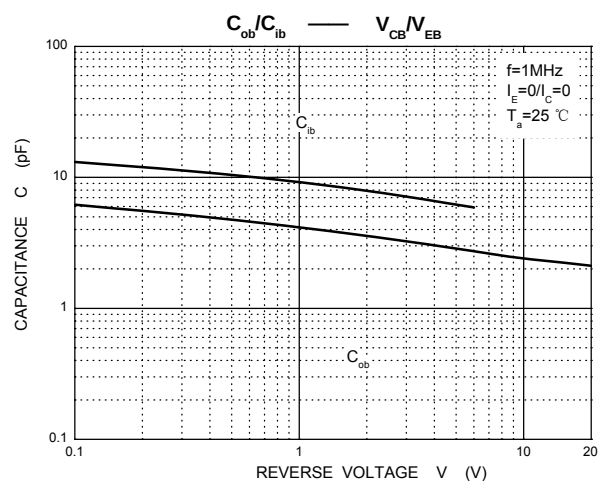
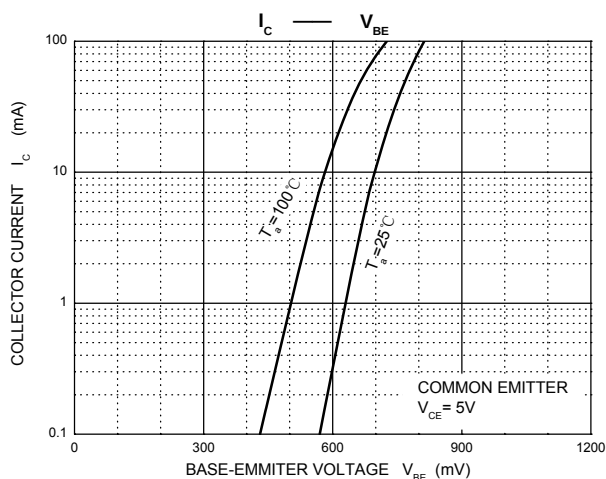
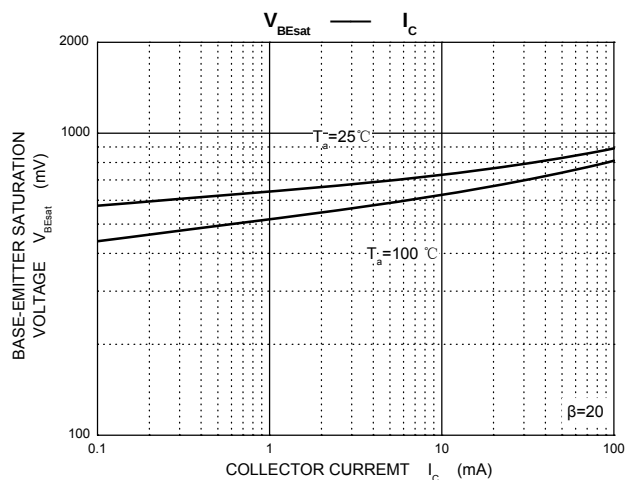
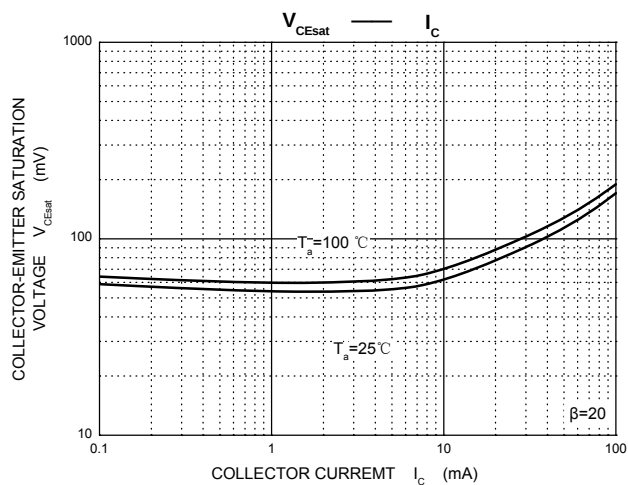
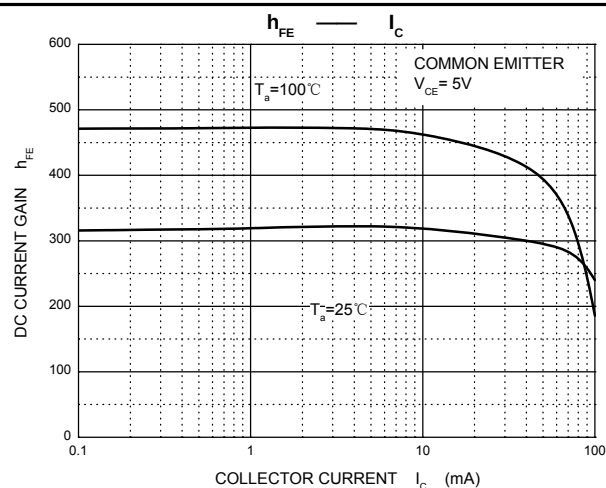
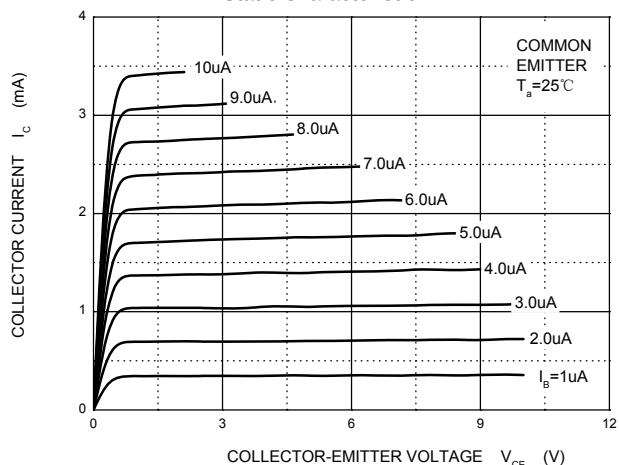
Symbol	Parameter	Value	Units
V_{CBO}	Collector-Base Voltage	-50	V
V_{CEO}	Collector-Emitter Voltage	-45	V
V_{EBO}	Emitter-Base Voltage	-5	V
I_C	Collector Current –Continuous	-0.1	A
P_C	Collector Power Dissipation	150	mW
T_J, T_{stg}	Operation Junction and Storage Temperature Range	-55~+150	$^{\circ}\text{C}$

CHARACTERISTICS of TR2 (PNP Transistor) ($T_a=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Collector-base breakdown voltage	$V_{(BR)CBO}$	$I_C=-10\mu\text{A}, I_E=0$	-50			V
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-45			V
Emitter-base breakdown voltage	$V_{(BR)EBO}$	$I_E=-1\mu\text{A}, I_C=0$	-5			V
Collector cut-off current	I_{CBO}	$V_{CB}=-30\text{V}, I_E=0$			-15	nA
Emitter cut-off current	I_{EBO}	$V_{EB}=-5\text{V}, I_C=0$			-15	nA
DC current gain	h_{FE1}	$V_{CE}=-5\text{V}, I_C=-2\text{mA}$	220		475	
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C=-10\text{mA}, I_B=-0.5\text{mA}$			-0.3	V
	$V_{CE(sat)}$	$I_C=-100\text{mA}, I_B=-5\text{mA}$			-0.65	V
Base-emitter saturation voltage	$V_{BE(sat)}$	$I_C=-10\text{mA}, I_B=-0.5\text{mA}$		-0.7		V
	$V_{BE(sat)}$	$I_C=-100\text{mA}, I_B=-5\text{mA}$			-0.95	V
Base-emitter voltage	$V_{BE(on)}$	$V_{CE}=-5\text{V}, I_C=-2\text{mA}$	-0.6		-0.75	V
	$V_{BE(on)}$	$V_{CE}=-5\text{V}, I_C=-10\text{mA}$			-0.82	V
Collector output capacitance	C_{ob}	$V_{CB}=-10\text{V}, I_E=0, f=1\text{MHz}$			4.5	pF
Transition frequency	f_T	$V_{CE}=-5\text{V}, I_C=-10\text{mA}, f=100\text{MHz}$	100			MHz
Noise figure	NF	$V_{CE}=-5\text{V}, I_C=-0.2\text{mA}, f=1\text{kHz}, R_g=2\text{K}\Omega, \Delta f=200\text{Hz}$			10	dB

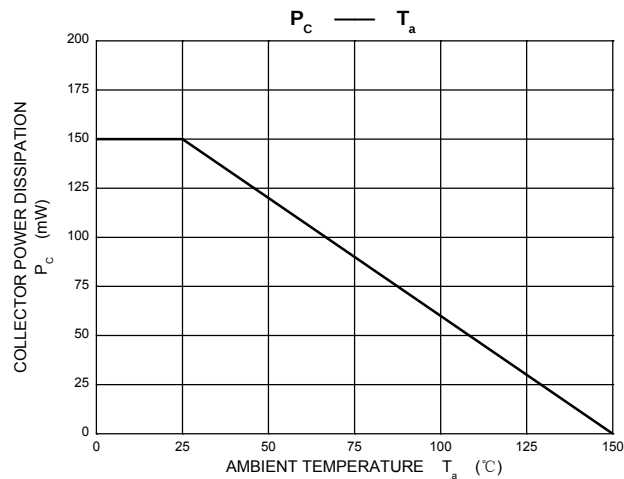
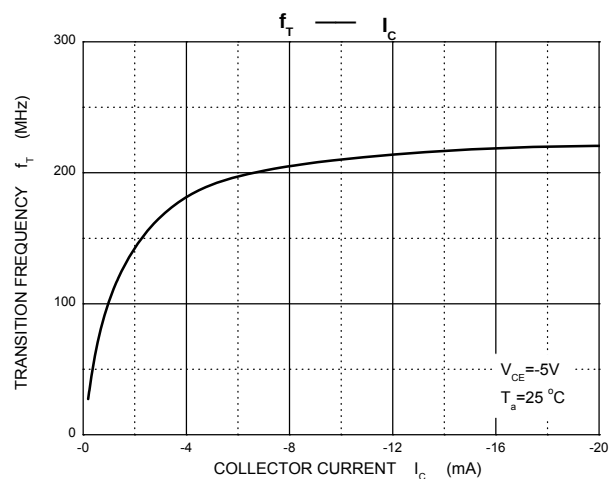
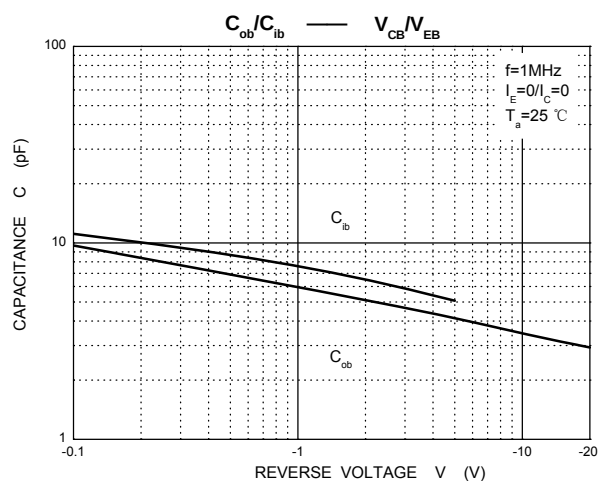
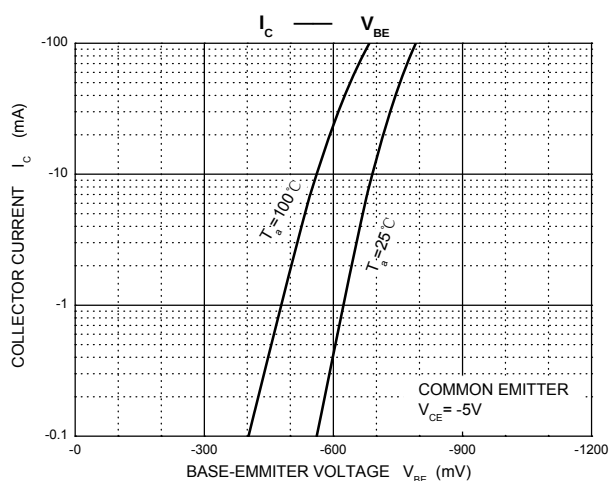
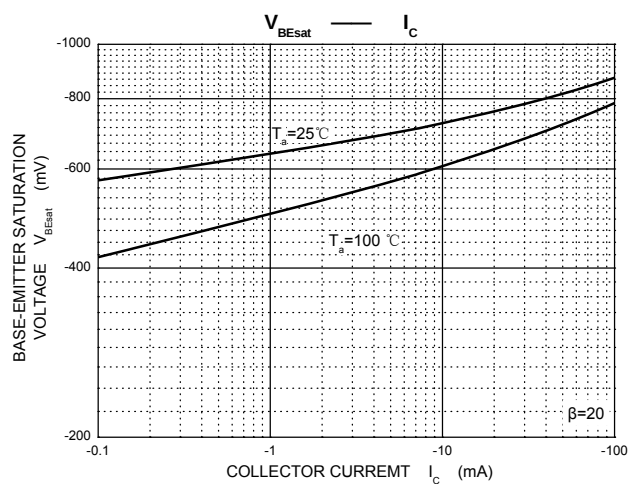
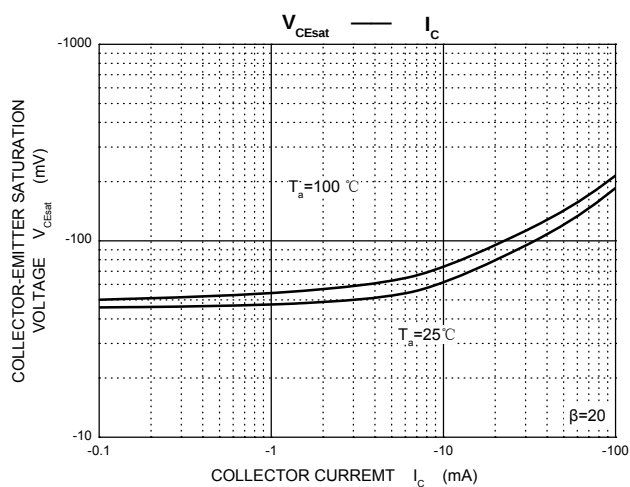
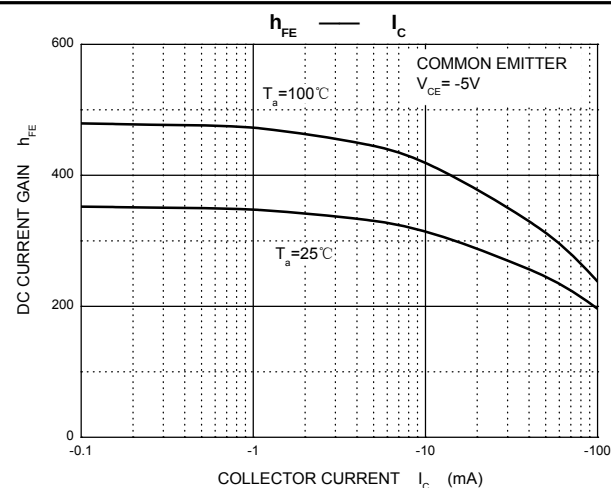
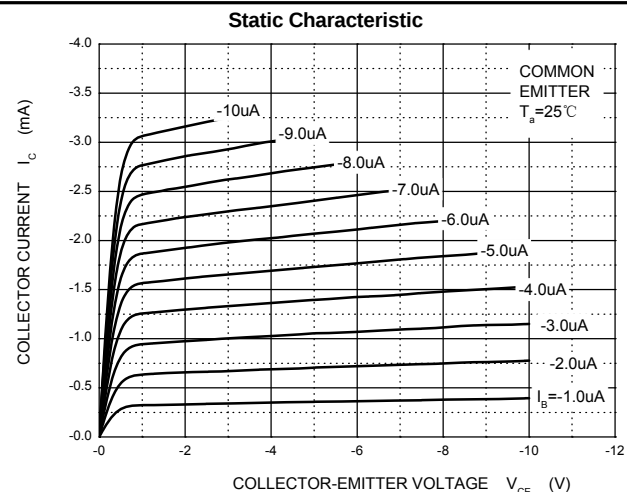
Typical Characteristics

Static Characteristic

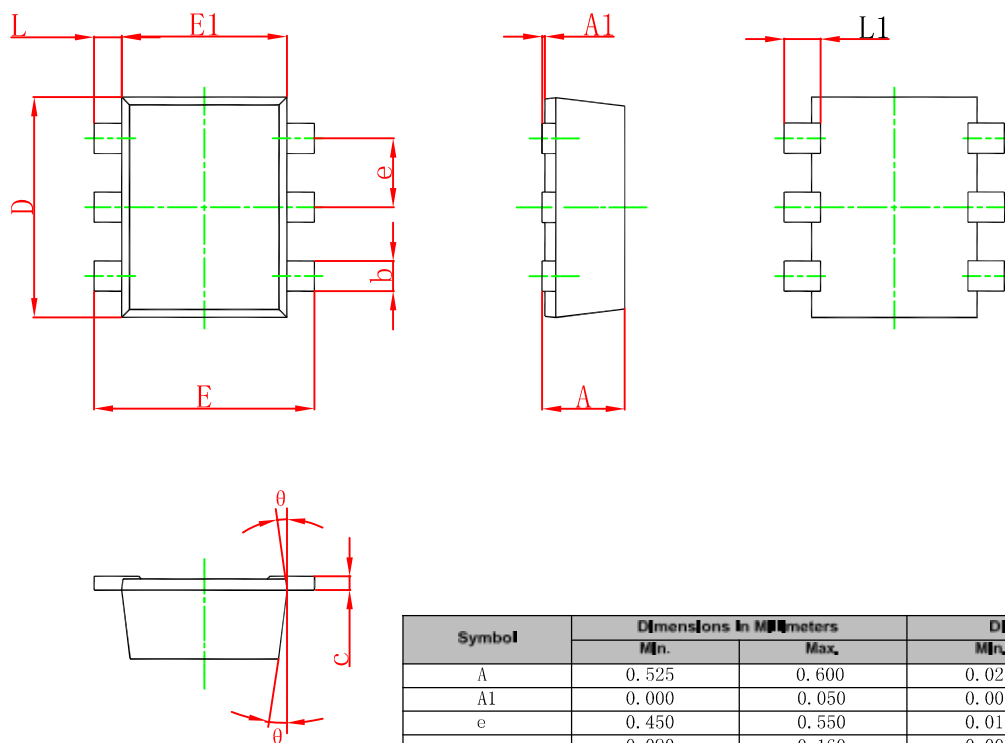


Typical Characteristics

DUAL TRANSISTOR (NPN+PNP)
BC847BVN/TR2

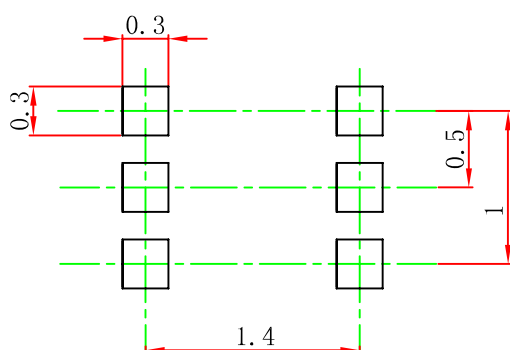


SOT-563 Package Outline Dimensions



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	10° REF.		10° REF.	

SOT-563 Suggested Pad Layout



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