

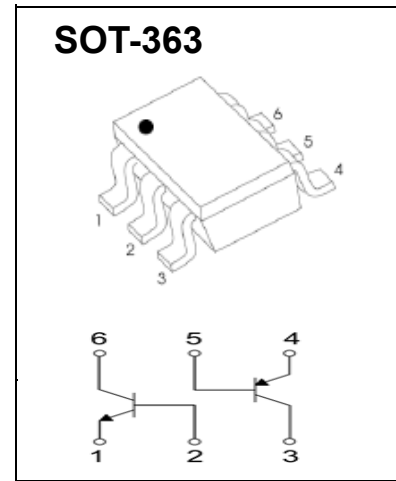


DUAL TRANSISTOR (NPN+PNP)

FEATURES

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

MAKING : 7P



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

Symbol	Parameter	Value	Units
V _{CB0}	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	200	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			100	nA
Emitter cut-off current	I _{EBO}	V _{EB} =5V, I _C =0			100	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)**

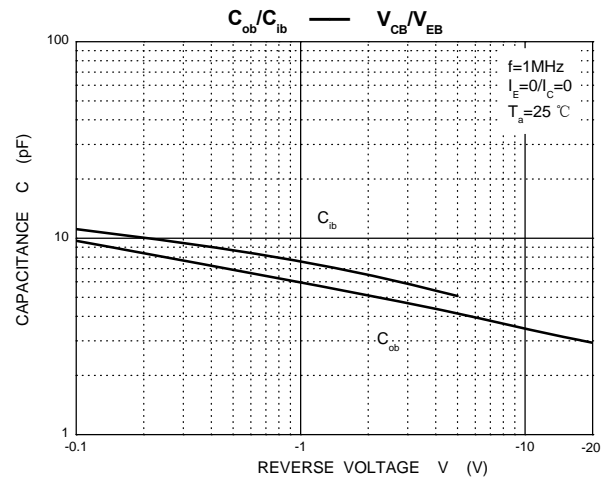
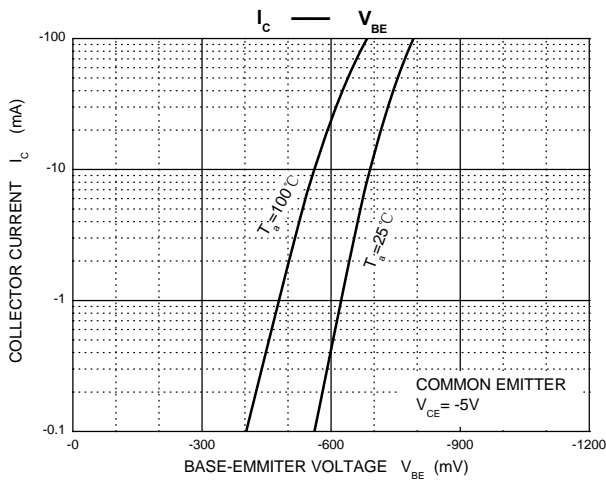
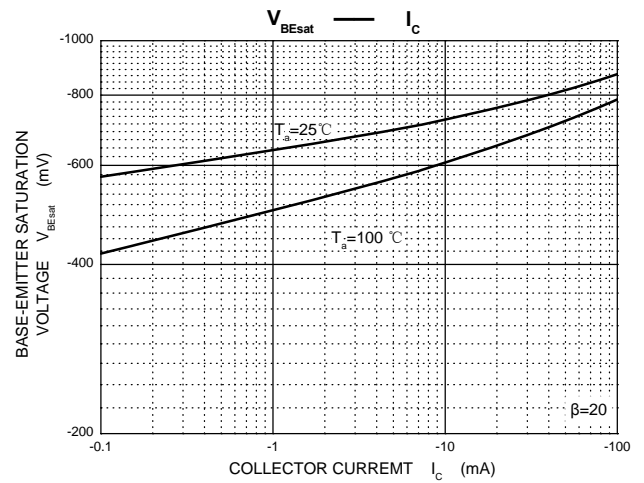
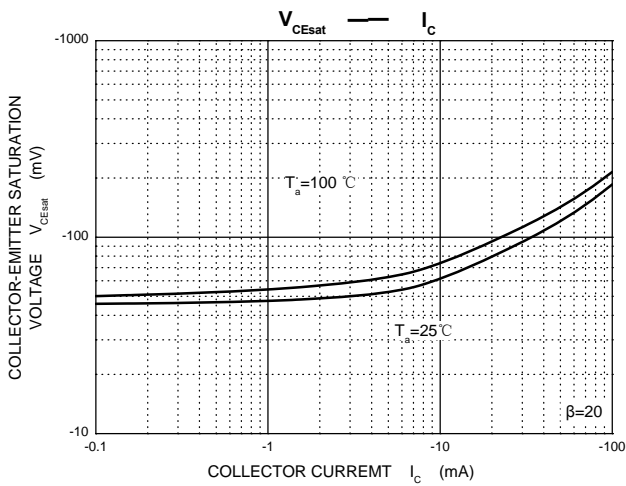
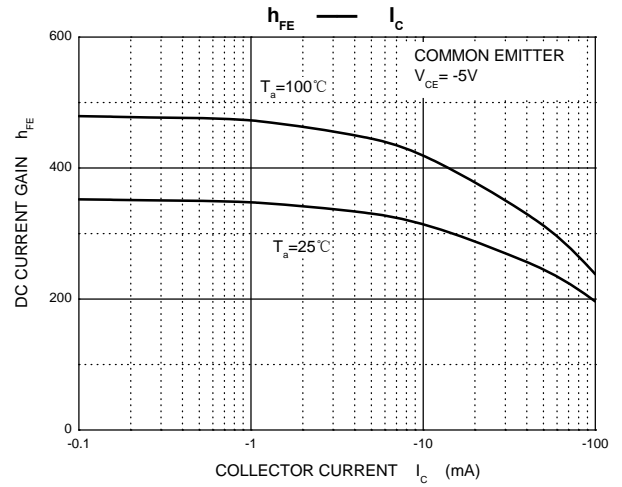
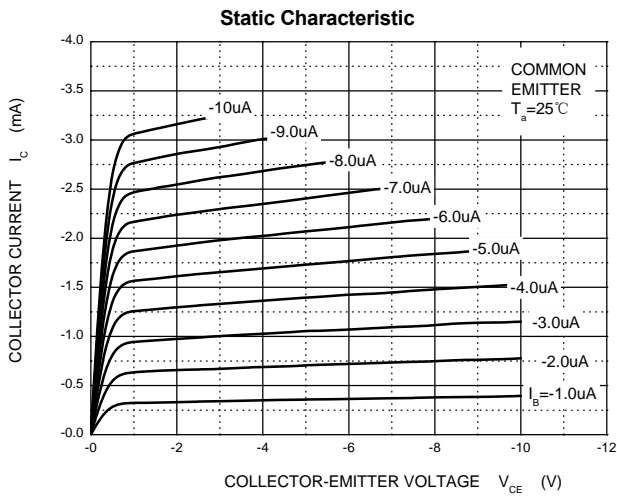
Symbol	Parameter	Value	Units
V _{CBO}	Collector-Base Voltage	-50	V
V _{CEO}	Collector-Emitter Voltage	-45	V
V _{EBO}	Emitter-Base Voltage	-5	V
I _C	Collector Current –Continuous	-0.1	A
P _{C*}	Collector Power Dissipation	200	mW
T _J , T _{stg}	Operation Junction and Storage Temperature Range	-55~+150	°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	-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	-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

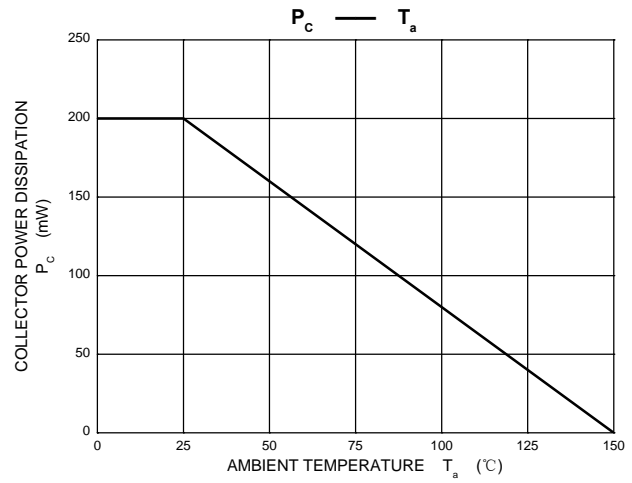
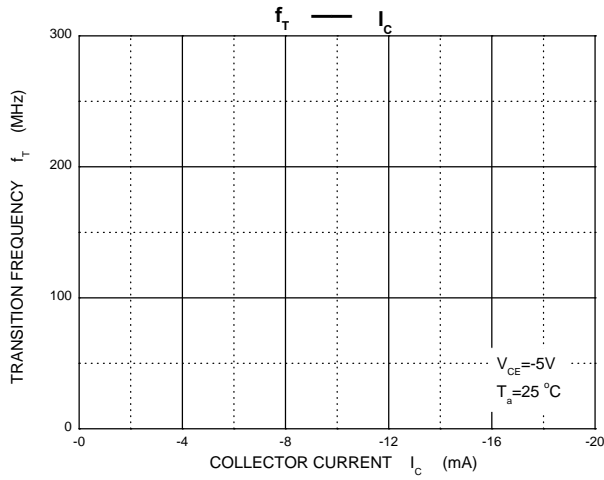


Typical Characteristics



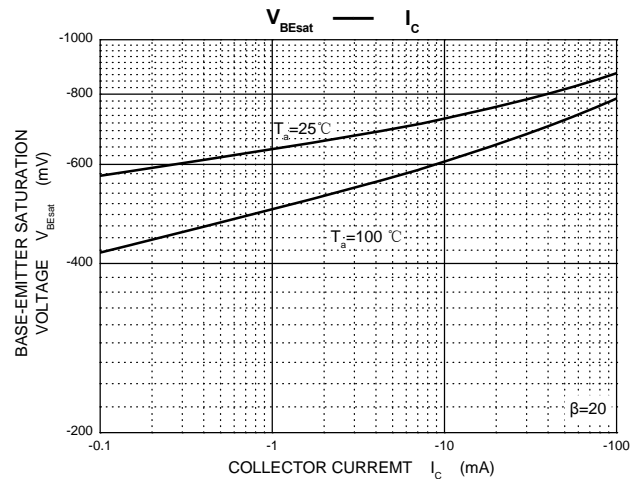
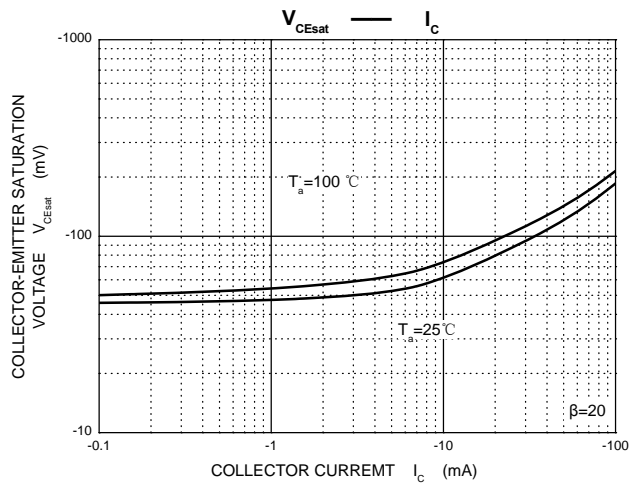
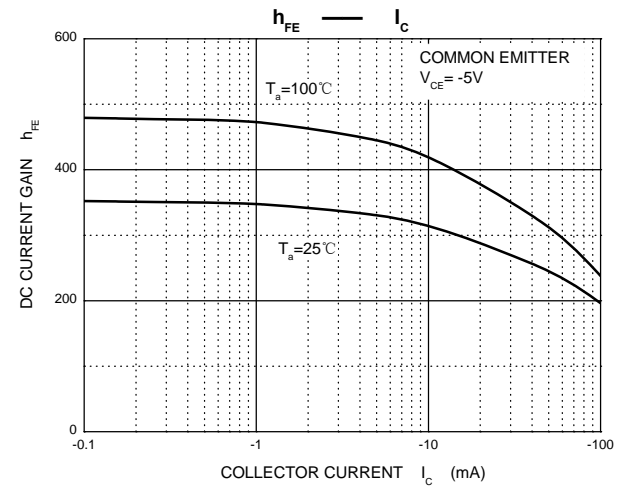
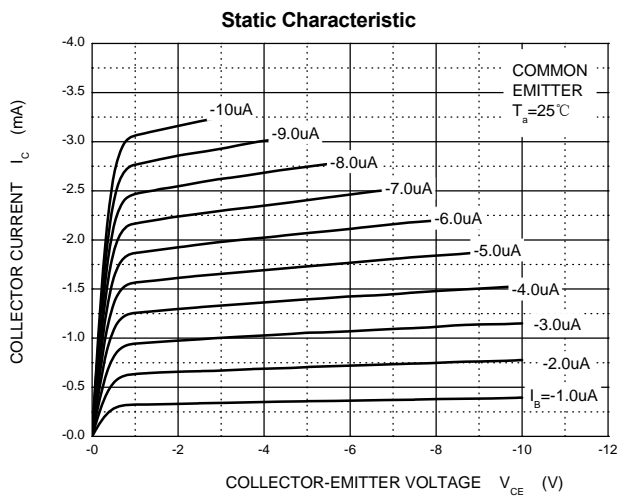


Typical Characteristics



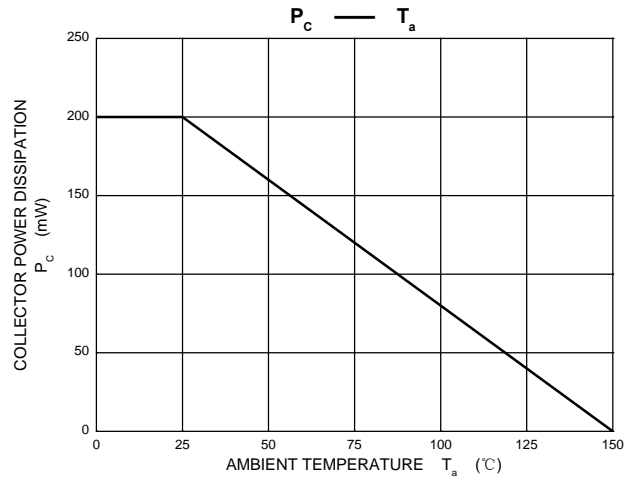
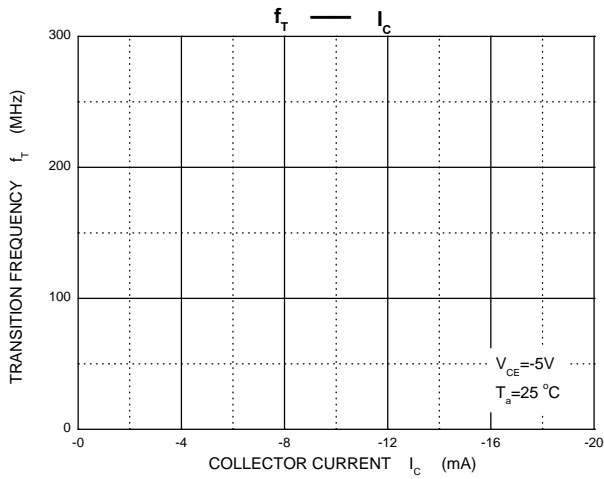
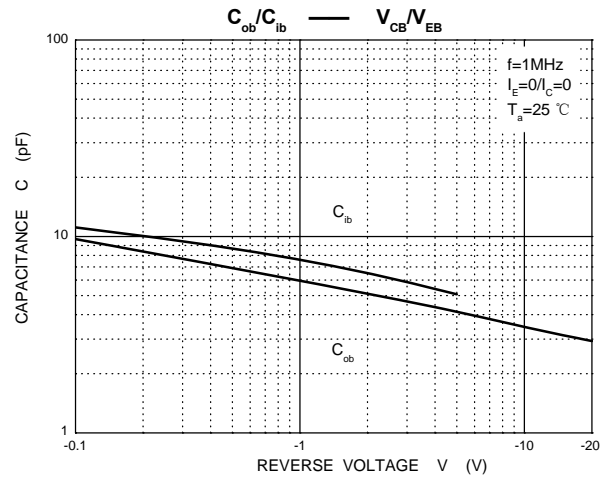
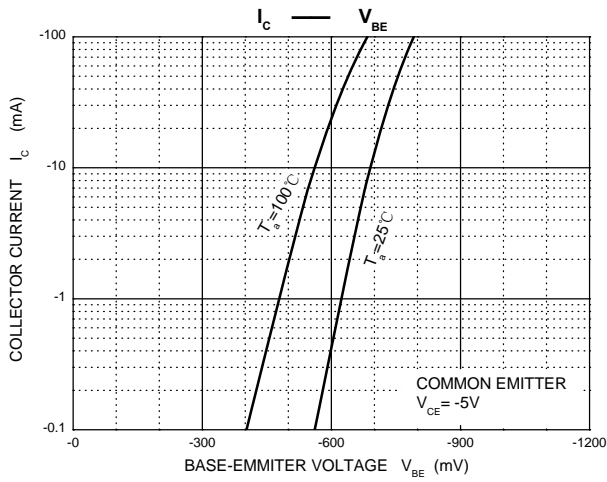
Typical Characteristics

BC847PN/TR2

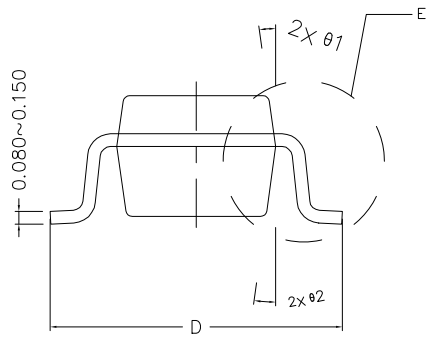




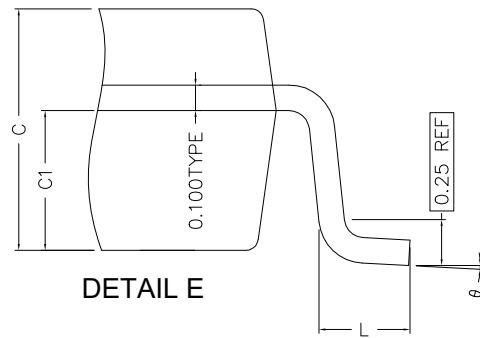
Typical Characteristics



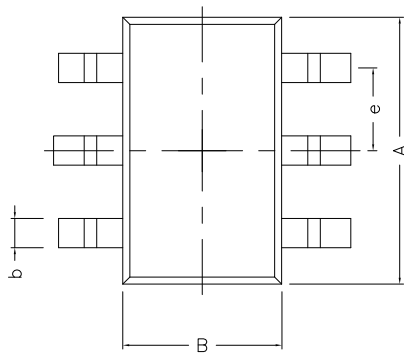
SOT-363 Package Outline Dimensions



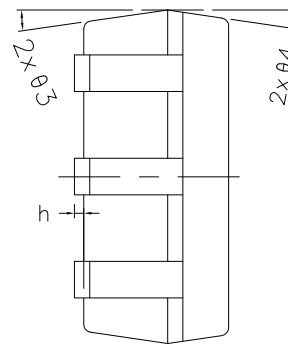
SIDE VIEW



DETAIL E



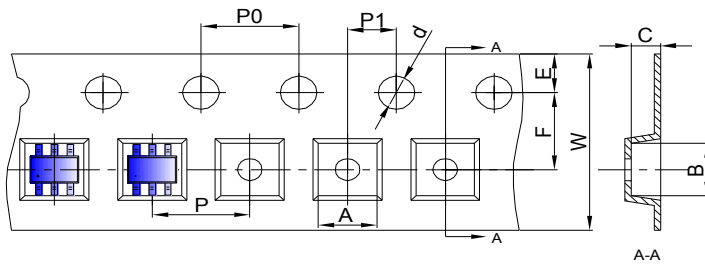
TOP VIEW



SIDE VIEW

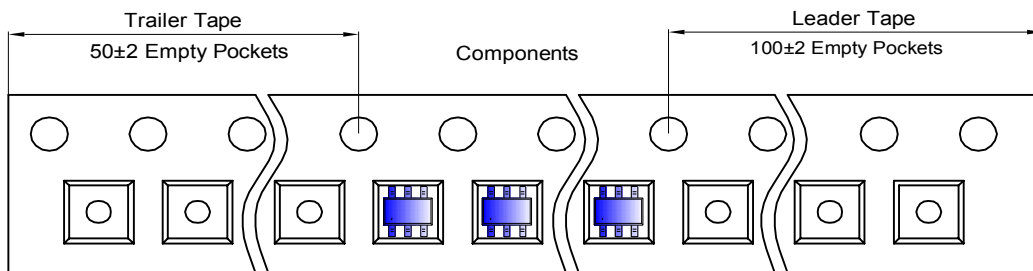
COMMON DIMENSIONS (UNITS OF MEASURE IS mm)			
	MIN	NORMAL	MAX
A	2.000	2.100	2.200
B	1.150	1.250	1.350
C	0.900	0.950	1.000
C1	0.500	0.550	0.600
D	2.100	2.300	2.500
L	0.220	0.360	0.500
b	0.200	0.250	0.400
h	0.020	0.050	0.100
e	0.650 TYPE		
θ ₁	8° TYPE		
θ ₂	8° TYPE		
θ ₃	8° TYPE		
θ ₄	8° TYPE		
θ	0~8° TYPE		

SOT-363 Embossed Carrier Tape

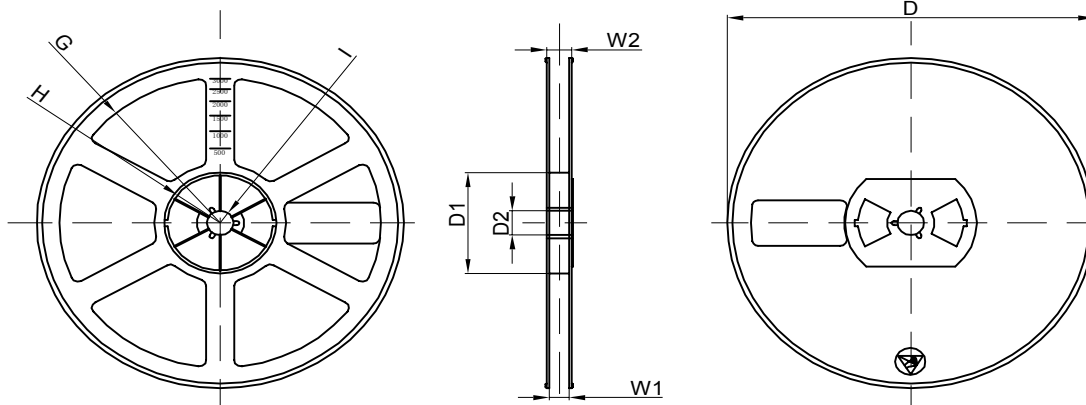


Dimensions are in millimeter											
Pkg type	A	B	C	d	E	F	P0	P	P1	W	
SOT-363	2.25	2.55	1.20	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00	

SOT-363 Tape Leader and Trailer



SOT-363 Reel



Dimensions are in millimeter								
Reel Option	D	D1	D2	G	H	I	W1	W2
7" Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	192x182x182	180,000 pcs	192x182x182	