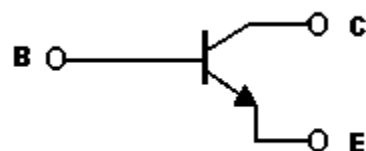
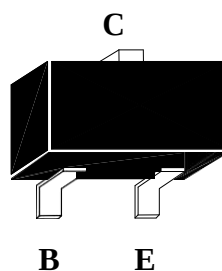


NPN High Voltage Planar Transistor

Features:

- High breakdown voltage. ($BV_{CEO}=500V$)
- Low collector-emitter saturation voltage V_{CESAT} .
- High collector current capability I_C and I_{CM} .
- High collector current gain H_{FE} at high collector current I_C .
- Low collector output capacitance. (Typ. 5pF at $V_{CB}=20V$)
- Pb-free lead plating and halogen-free package.

SOT-23



Ordering Information

Device	Package	Shipping
KTNA45	SOT-23 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	500	V
Collector-Emitter Voltage	V _{CES}	500	
Collector-Emitter Voltage	V _{CEO}	500	
Emitter-Base Voltage	V _{EBO}	7	
Collector Current	I _C	150	mA
Peak Collector Current , single pulse, pulse width tp<1ms	I _{CM}	500	
Peak Base Current, single pulse, pulse width tp<1ms	I _{BM}	200	
Power Dissipation (Note)	P _d	300	mW
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Note : Device mounted on a FR-4 PCB, single sided copper, tin plated and standard footprint.

Thermal Characteristics

Parameter	Symbol	Limit	Unit
Thermal Resistance, Junction-to-Ambient, in free air (Note)	R _{th,j-a}	417	°C/W
Thermal Resistance, Junction-to-Solder point	R _{th,j-sp}	70	

Note : Device mounted on a FR-4 PCB, single sided copper, tin plated and standard footprint.

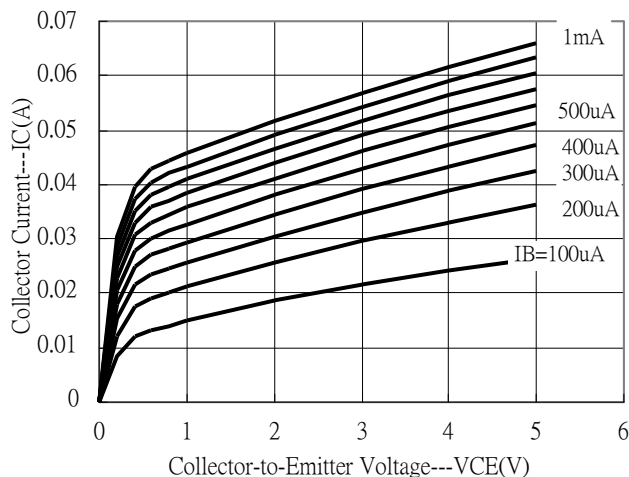
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
*BV _{CB0}	500	-	-	V	I _C =50μA
*BV _{CES}	500	-	-		I _C =50μA
*BV _{CEO}	500	-	-		I _C =10mA
BV _{EBO}	7	-	-		I _E =50μA
I _{CB0}	-	-	100	nA	V _{CB} =500V
I _{CES}	-	-	100		V _{CE} =500V
I _{EBO}	-	-	100		V _{EB} =5V
*V _{CE(sat)} 1	-	-	90	mV	I _C =20mA, I _B =2mA
*V _{CE(sat)} 2	-	-	150		I _C =50mA, I _B =6mA
*V _{BE(sat)}	-	-	0.9	V	I _C =50mA, I _B =5mA
*V _{BE(on)}	-	-	0.9		V _{CE} =10V, I _C =50mA
*h _{FE} 1	120	-	-	-	V _{CE} =10V, I _C =1mA
*h _{FE} 2	120	-	300	-	V _{CE} =10V, I _C =30mA
*h _{FE} 3	120	-	-	-	V _{CE} =10V, I _C =50mA
*h _{FE} 4	30	-	-	-	V _{CE} =10V, I _C =100mA
f _T	50	-	-	MHz	V _{CE} =20V, I _C =10mA, f=100MHz
Cob	-	5	8	pF	V _{CB} =20V, I _E =0A, f=1MHz
ton	-	110	-	ns	V _{CE} =100V, I _C =50mA, I _{B1} =5mA, I _{B2} =
toff	-	1500	-		

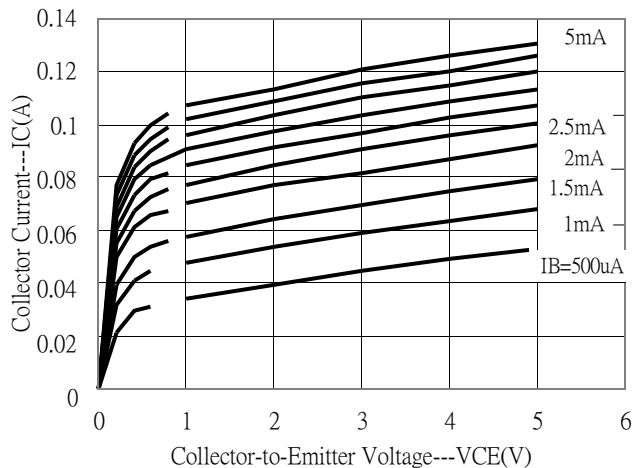
*Pulse Test: Pulse Width ≤300μs, Duty Cycle ≤2%

Typical Characteristics

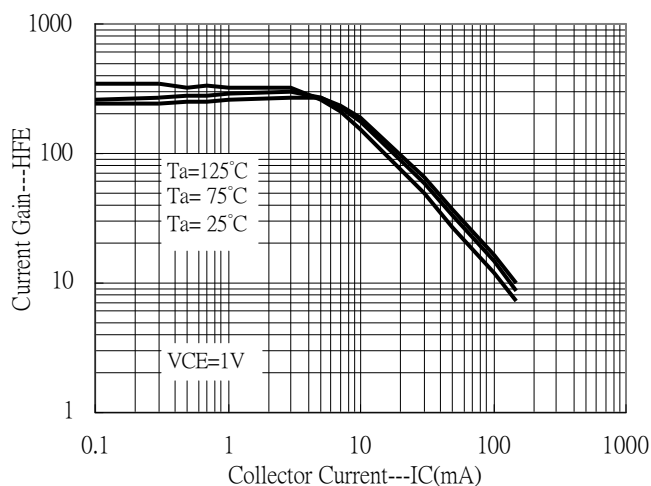
Emitter Grounded Output Characteristics



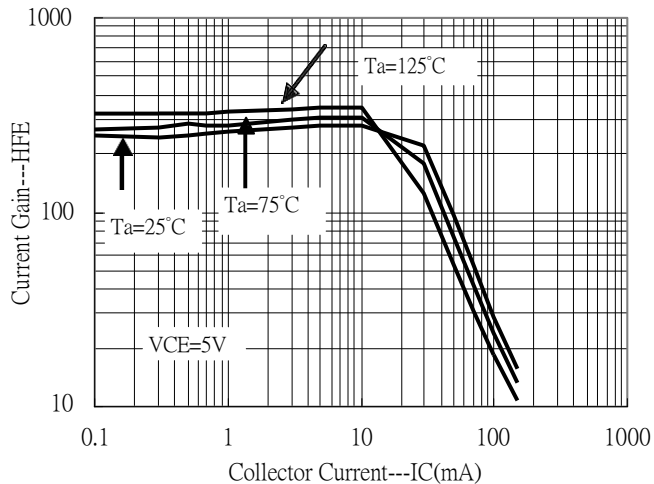
Emitter Grounded Output Characteristics



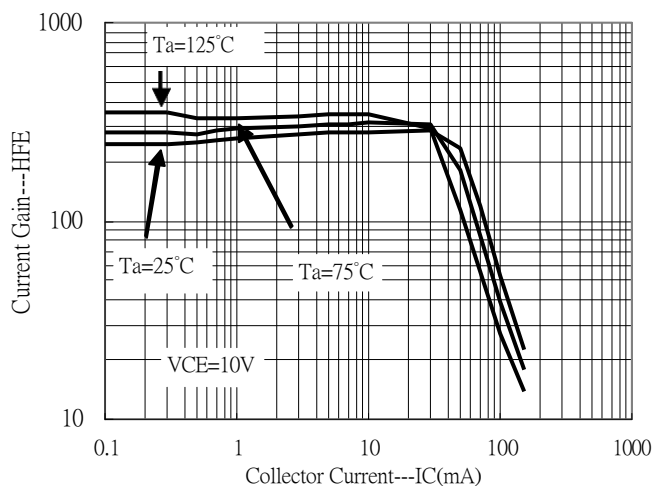
Current Gain vs Collector Current



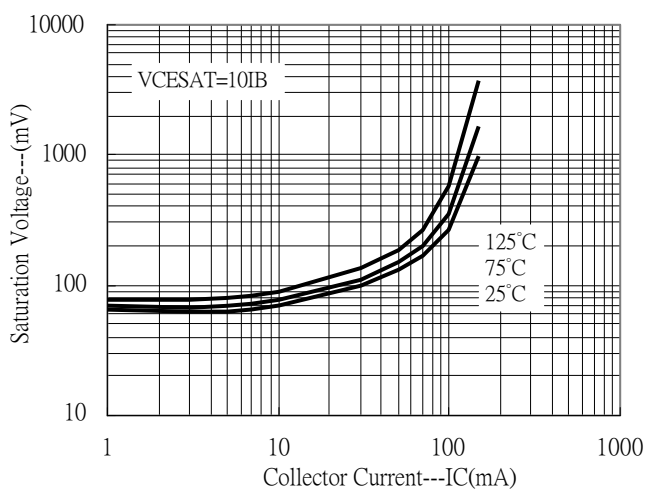
Current Gain vs Collector Current



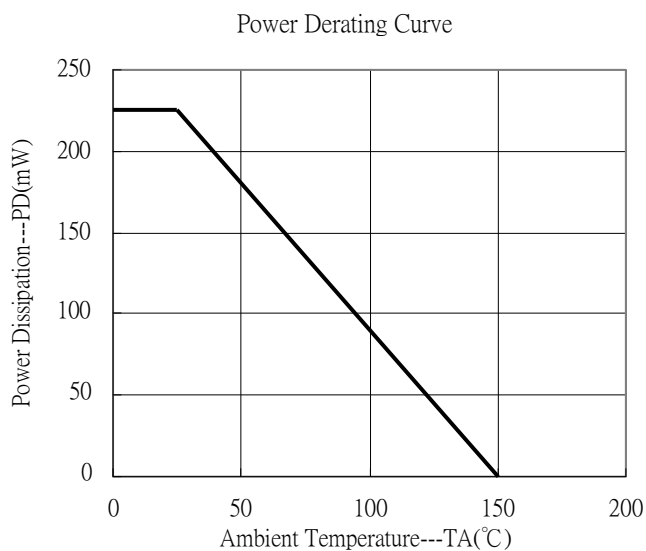
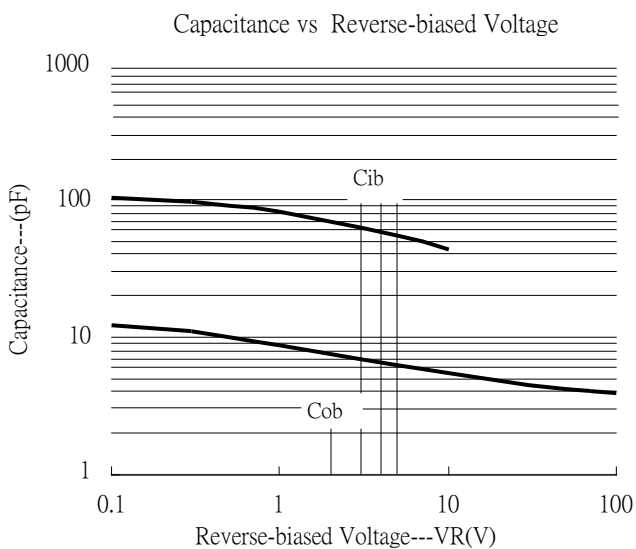
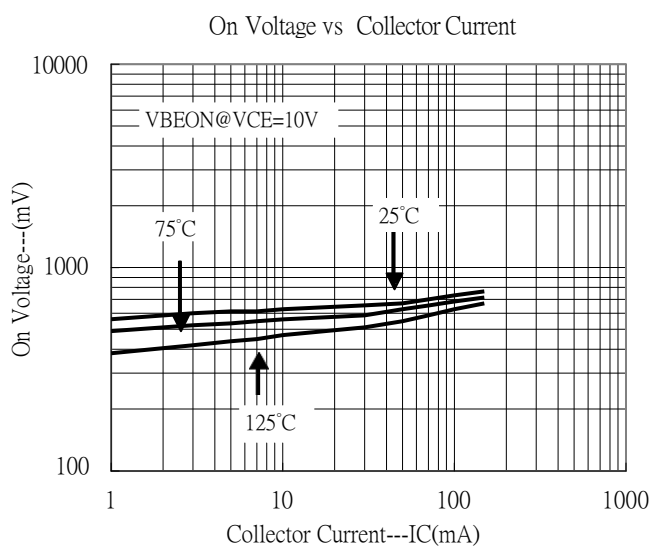
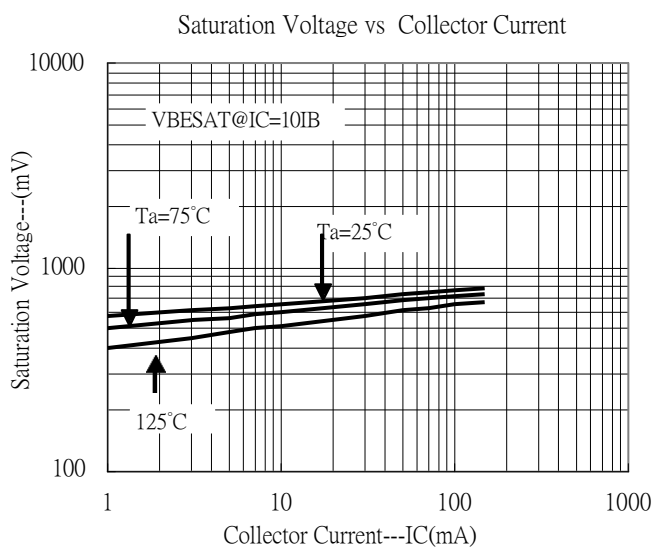
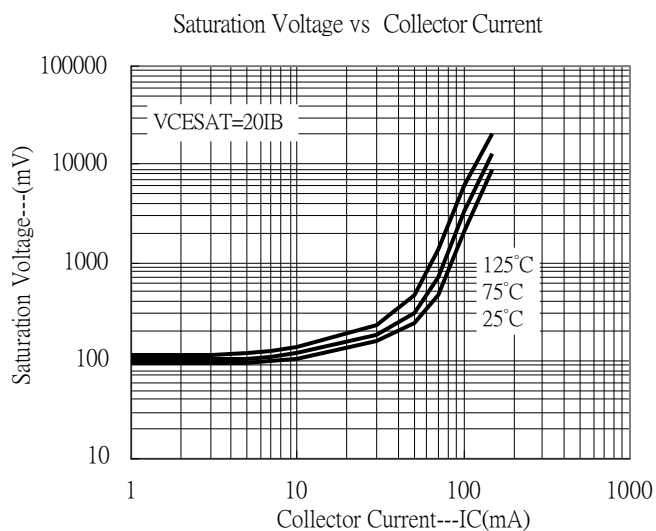
Current Gain vs Collector Current



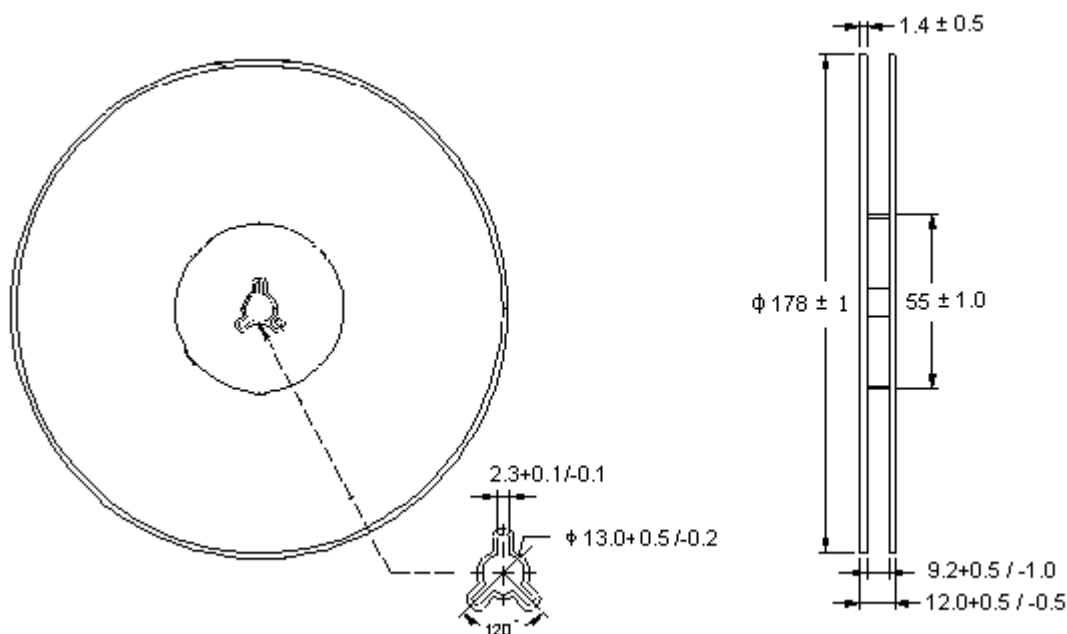
Saturation Voltage vs Collector Current



Typical Characteristics(Cont.)

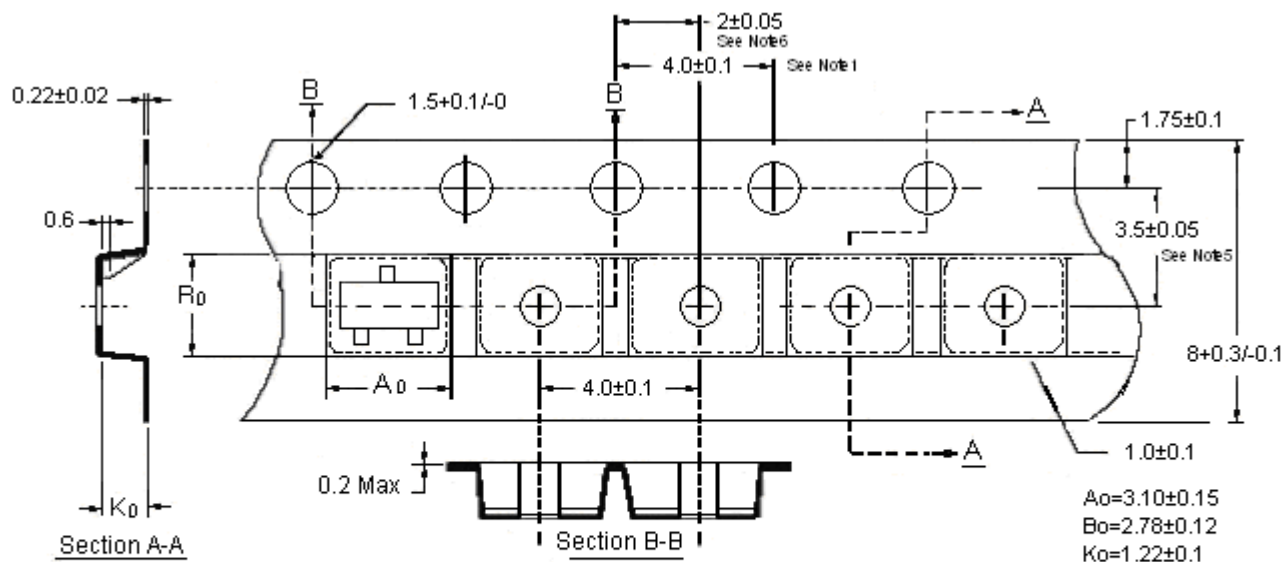


Reel Dimension



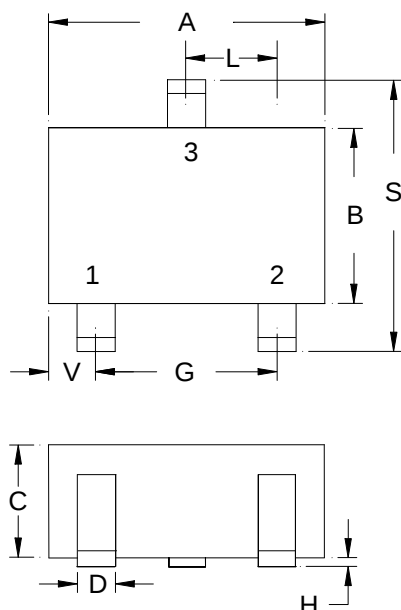
Unit: millimeter

Carrier Tape Dimension



Unit : millimeter

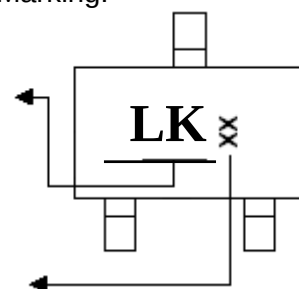
SOT-23 Dimension



Date Code: Year+Month
 Year: Last digit of christian year
 7→2017, 8→2018, ...etc.
 Month: 1→1, 2→2, . . . 9→
 9, A→10, B→11, C→12

Marking:

Product Code



3-Lead SOT-23 Plastic
 Surface Mounted Package
 Package Code: N3

Style : Pin 1.Base 2.Emitter 3.Collector

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					