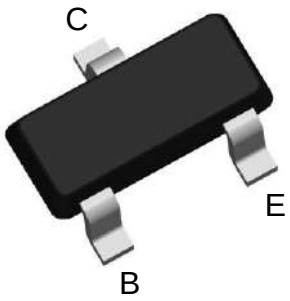
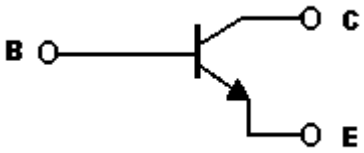
General Purpose NPN Epitaxial Planar Transistor

Features:

- High breakdown voltage, $BV_{CEO} \geq 100V$
- Large continuous collector current capability
- Low collector saturation voltage
- Pb-free lead plating and halogen-free package

SOT-23





B：Base
C：Collector
E：Emitter

Ordering Information

Device	Package	Shipping
KWC2880	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_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	7	V
Collector Current	I_C	2	A
Peak Collector Current	I_{CM}	5	A
Base Current	I_B	0.4	A
Power Dissipation	P_D	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Operating Junction and Storage Temperature Range	Tj ; Tstg	-55~+150	°C

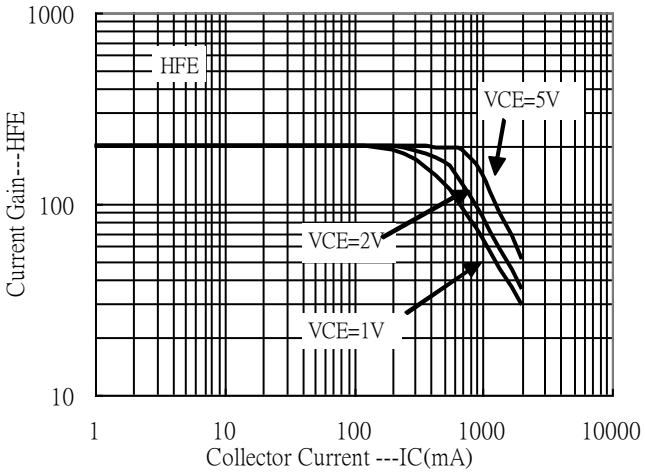
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	180	-	-	V	I_C=50μA
BV_{CEO}	100	-	-	V	I_C=1mA
BV_{EBO}	7	-	-	V	I_E=50μA
I_{CBO}	-	-	100	nA	V_{CB}=180V
I_{EBO}	-	-	100	nA	V_{EB}=6V
*$V_{CE(sat)}$	-	0.11	0.2	V	I_C=500mA, I_B=50mA
*$V_{CE(sat)}$	-	0.22	0.4	V	I_C=1A, I_B=50mA
*$V_{CE(sat)}$	-	0.44	1	V	I_C=2A, I_B=100mA
*$V_{BE(sat)}$	-	0.85	1.2	V	I_C=500mA, I_B=50mA
*$V_{BE(on)}$	-	0.77	0.9	V	V_{CE}=5V, I_C=500mA
*h_{FE} 1	120	-	-	-	V_{CE}=5V, I_C=50mA
*h_{FE} 2	150	-	250	-	V_{CE}=5V, I_C=100mA
*h_{FE} 3	80	-	-	-	V_{CE}=5V, I_C=1A
f_T	50	-	-	MHz	V_{CE}=10V, I_C=50mA, f=100MHz
Cob	-	18	40	pF	V_{CB}=10V, I_E=0A,f=1MHz

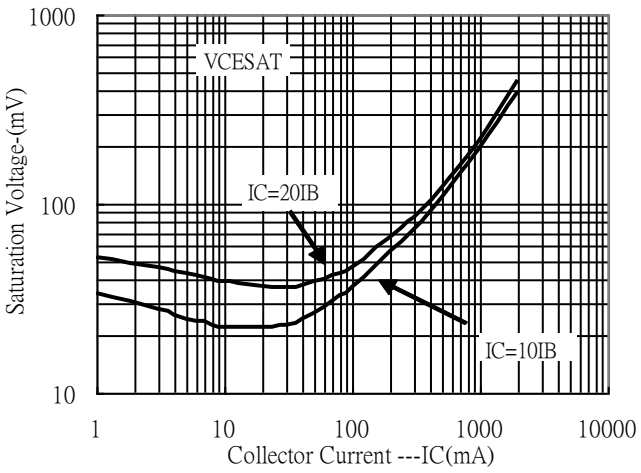
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Typical Characteristics

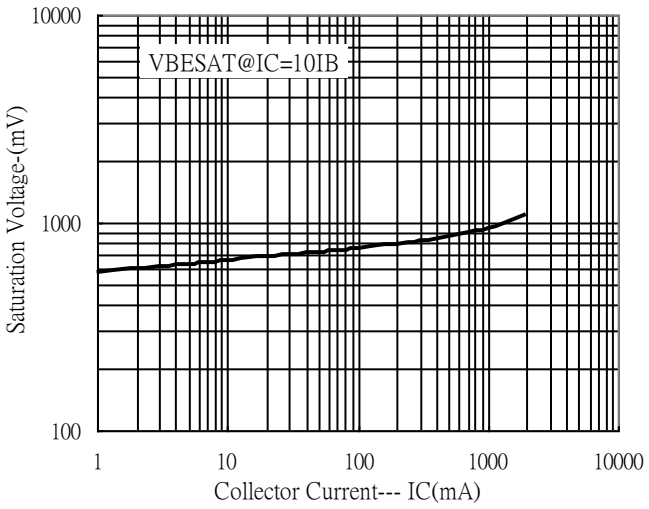
Current Gain vs Collector Current



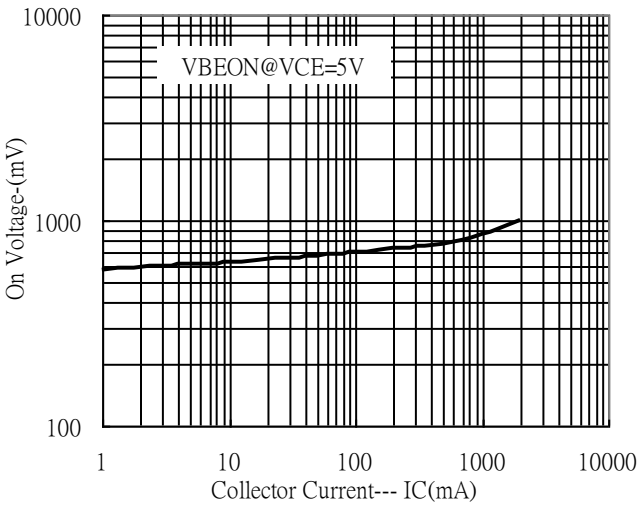
Saturation Voltage vs Collector Current



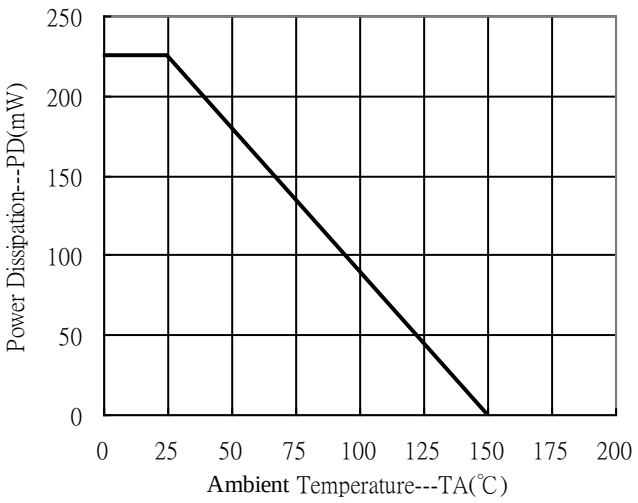
Saturation Voltage vs Collector Current



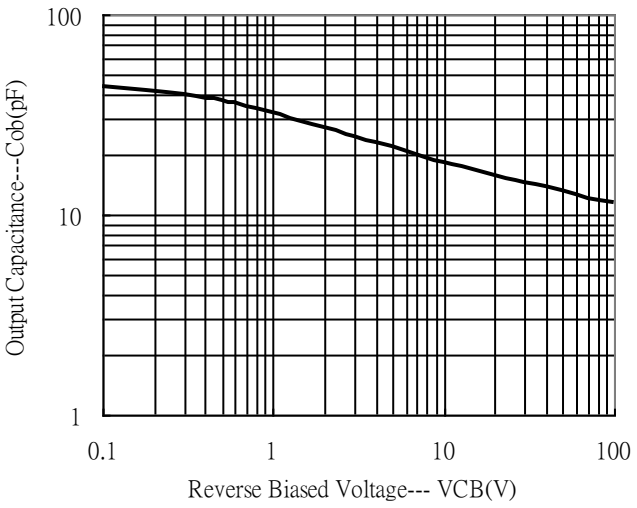
On Voltage vs Collector Current



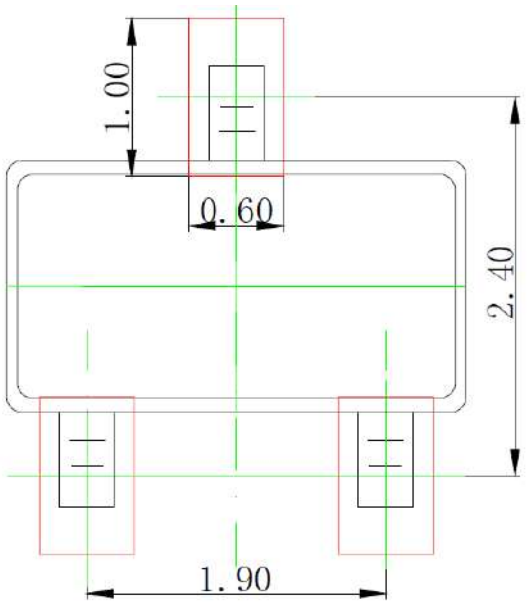
Power Derating Curve



Output Capatiance vs Reverse Biased Voltage

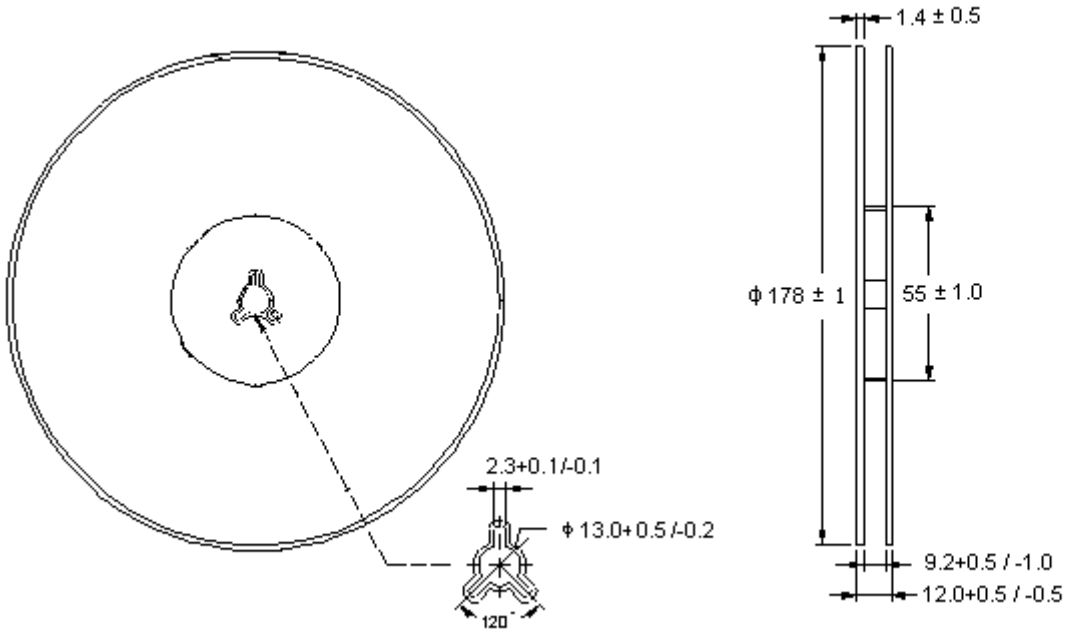


Recommended Soldering Footprint



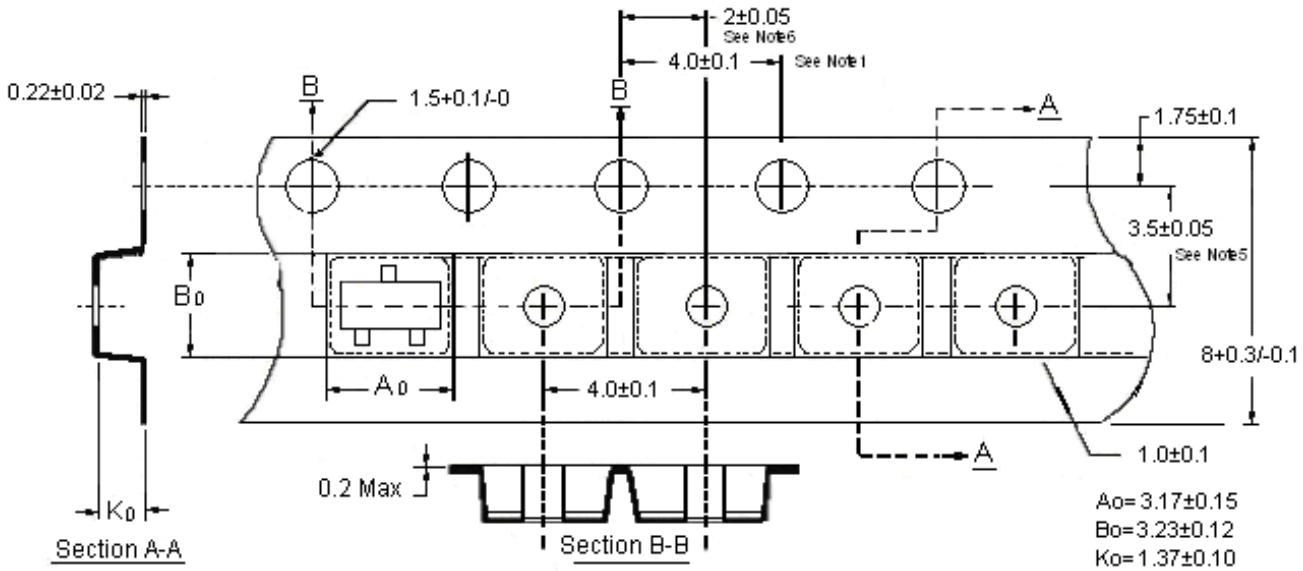
Uint:mm

Reel Dimension



Unit: millimeter

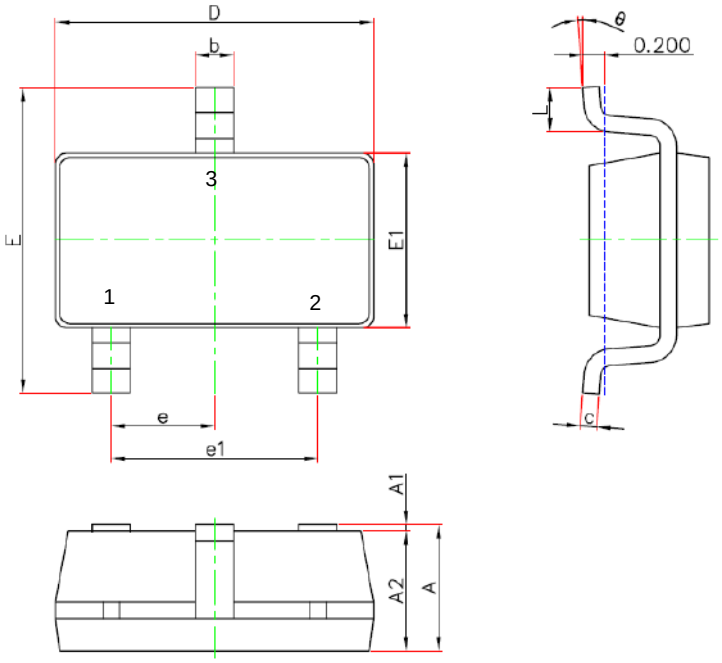
Carrier Tape Dimension



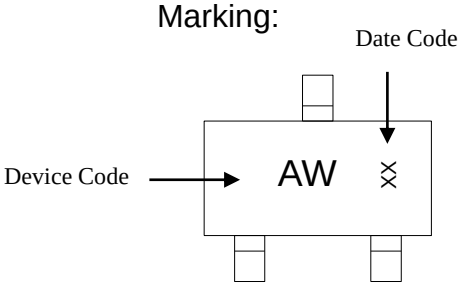
Notes:
1. 10 sprocket hole pitch cumulative tolerance ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material : conductive Black Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOT-23 Dimension



Marking:



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

Date Code: Year+Month
Year: 3→2003, 4→2004
Month: 1→1, 2→2, • • •
9→9, A→10, B→11, C→12

3-Lead SOT-23 Plastic
Surface Mounted Package

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.041	0.049	1.05	1.25	E1	0.059	0.067	1.50	1.70
A1	0.000	0.004	0.00	0.10	E	0.104	0.116	2.65	2.95
A2	0.041	0.045	1.05	1.15	e	0.037 BSC		0.95 BSC	
b	0.012	0.020	0.30	0.50	e1	0.071	0.079	1.80	2.00
c	0.004	0.008	0.10	0.20	L	0.012	0.024	0.30	0.60
D	0.111	0.119	2.82	3.02	θ	0 °	8 °	0 °	8 °