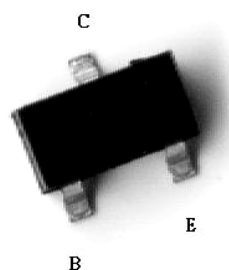


General Purpose NPN Epitaxial Planar Transistor

Description :

The KWD1768-3 is designed for use in driver and output stages of AF amplifier and general purpose application.

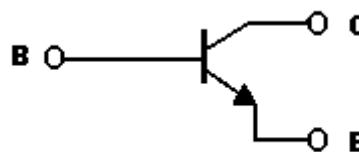
SOT-323



Features:

- Low collector saturation voltage
- High breakdown voltage, $V_{CEO}=80V$ (min.)
- High collector current, $I_{C(max)}=1A$ (DC)
- Pb-free package

BV_{CEO}	80V
I_C	1A



B : Base
C : Collector
E : Emitter

Ordering Information

Device	Package	Shipping
KWD1768-3	SOT-323 (Pb-free 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}	80	V
Emitter-Base Voltage	V _{EBO}	7	V
Collector Current (DC)	I _C	1	A
Collector Current (Pulse)	I _{CP}	2 (Note)	A
Power Dissipation	P _D	200	mW
Thermal Resistance, Junction to Ambient	R _{θJA}	625	°C/W
Operating Junction Temperature Range	T _j	-55~+150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Note : Pulse test, P_w ≤ 10ms, Duty ≤ 2%.

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	180	-	-	V	I _C =50μA
BV _{CEO}	80	-	-	V	I _C =1mA
BV _{EBO}	7	-	-	V	I _E =50μA
I _{CBO}	-	-	100	nA	V _{CB} =180V, I _E =0
I _{EBO}	-	-	100	nA	V _{EB} =7V, I _C =0
*V _{CE(SAT)} 1	-	0.15	0.3	V	I _C =500mA, I _B =20mA
*V _{CE(SAT)} 2	-	0.3	0.5	V	I _C =1A, I _B =50mA
*V _{BE(SAT)}	-	0.96	1.2	V	I _C =1A, I _B =50mA
*V _{BE(ON)}	0.6	0.66	0.7	V	V _{CE} =2V, I _C =50mA
*h _{FE} 1	180	-	560	-	V _{CE} =2V, I _C =100mA
*h _{FE} 2	60	-	-	-	V _{CE} =2V, I _C =500mA
*h _{FE} 3	20	-	-	-	V _{CE} =2V, I _C =1A
f _T	-	250	-	MHz	V _{CE} =10V, I _C =50mA, f=100MHz
C _{ob}	-	6	15	pF	V _{CB} =10V, I _E =0A, f=1MHz

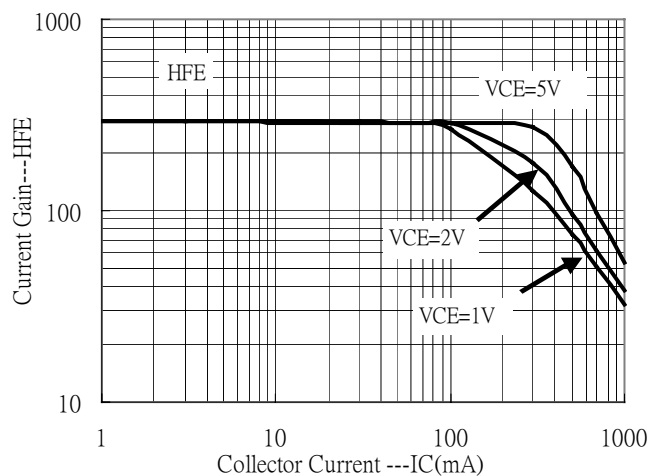
*Pulse Test: Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Classification Of h_{FE} 1

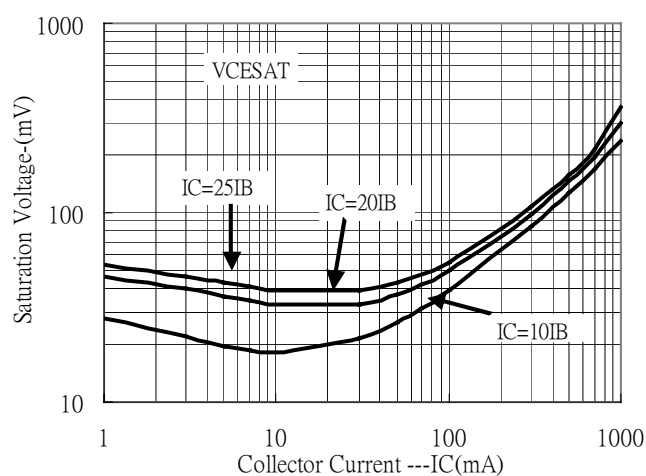
Rank	R	S
Range	180~390	270~560

Typical Characteristics

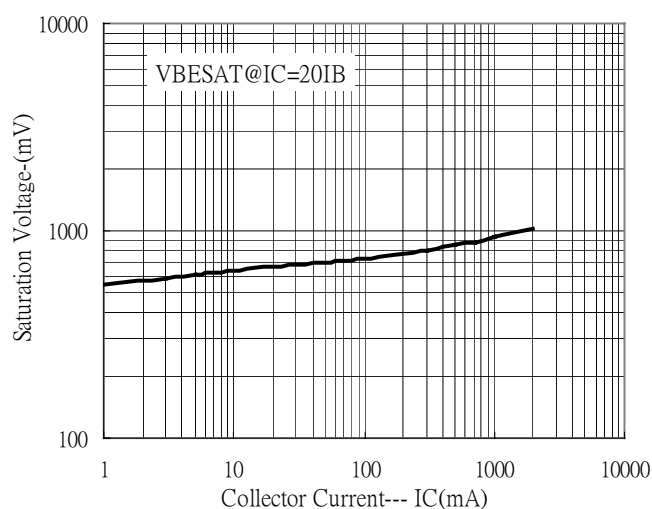
Current Gain vs Collector Current



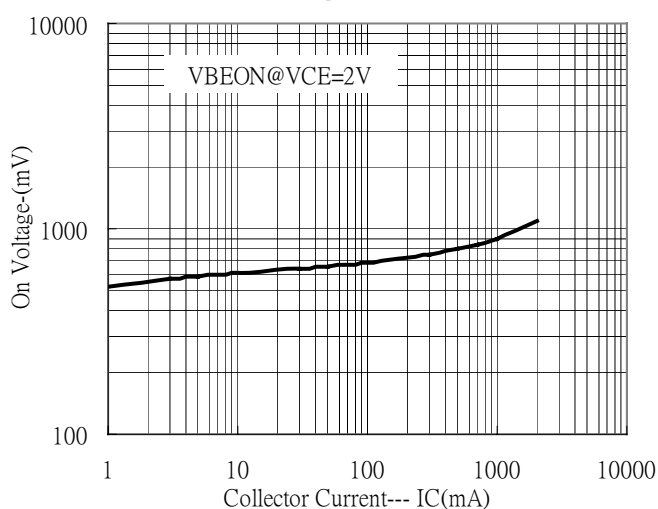
Saturation Voltage vs Collector Current



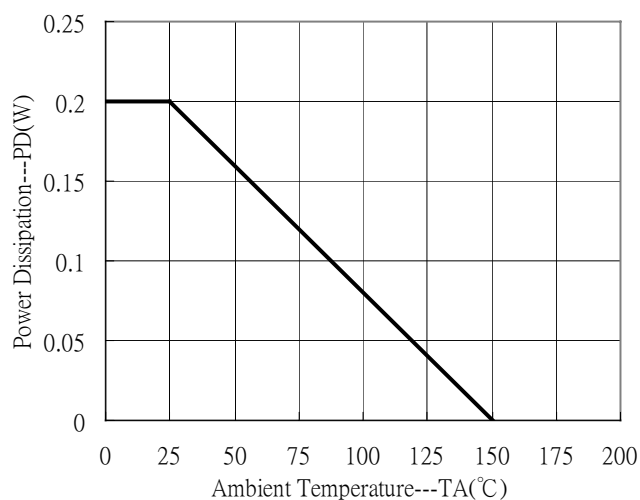
Saturation Voltage vs Collector Current



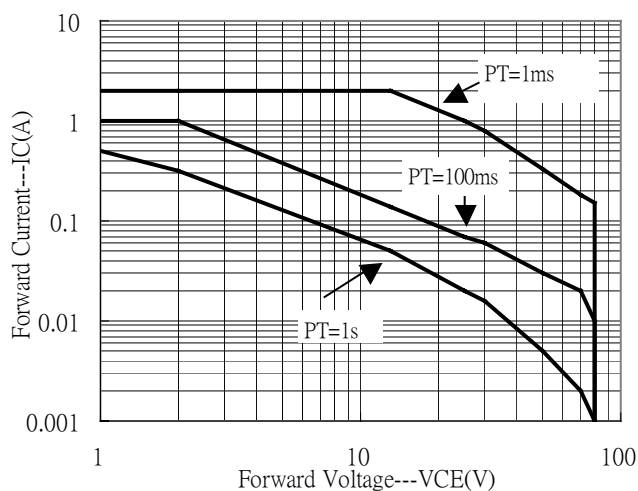
On Voltage vs Collector Current



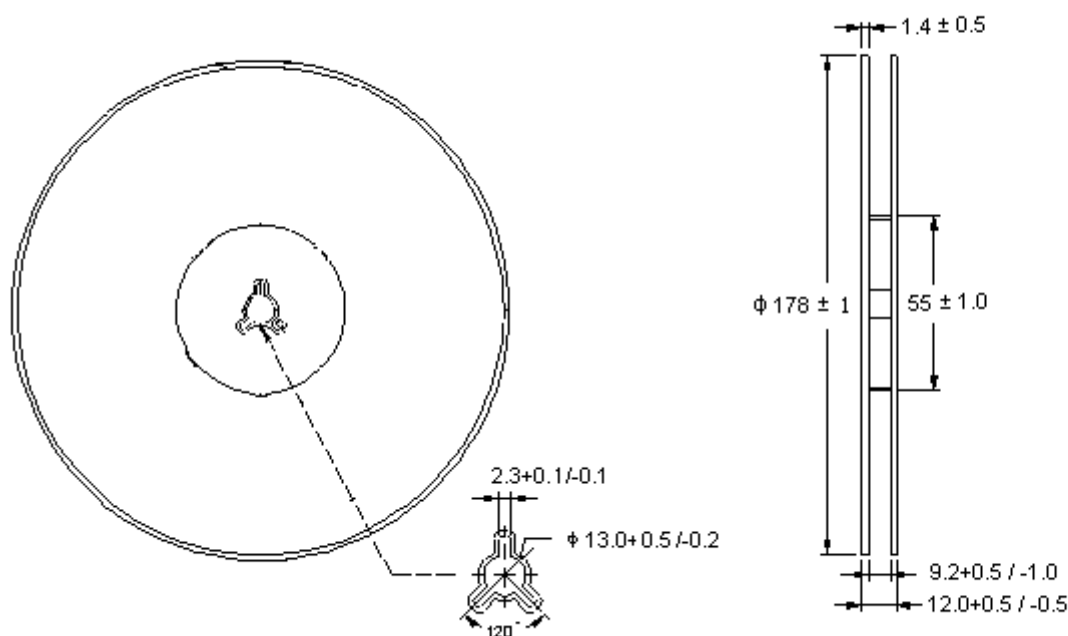
Power Derating Curve



Safe Operating Area

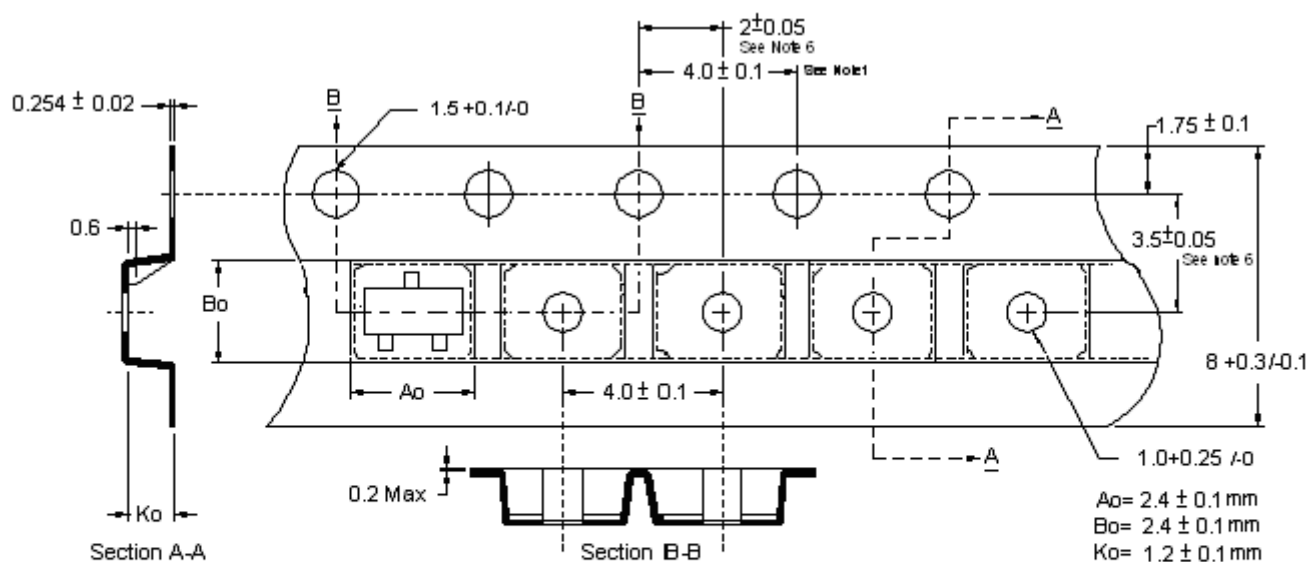


Reel Dimension



Unit: millimeter

Carrier Tape Dimension

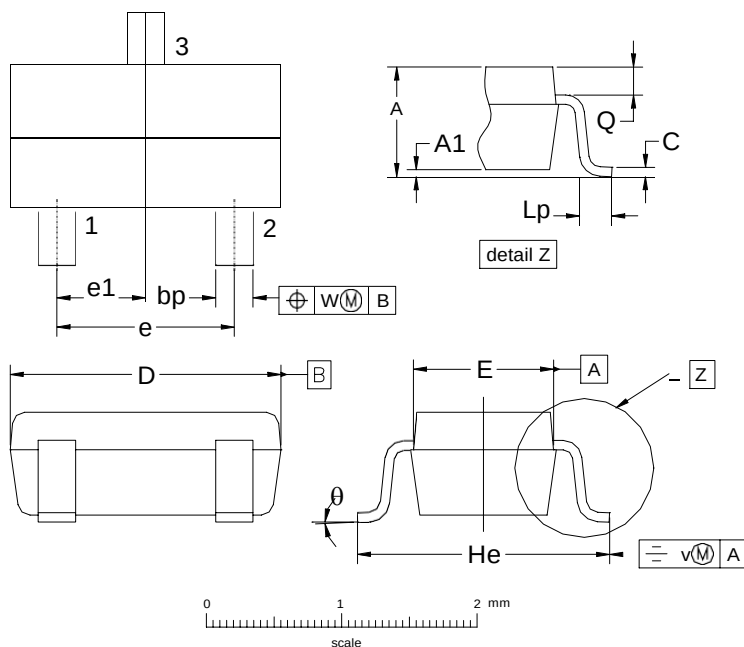


Notes:

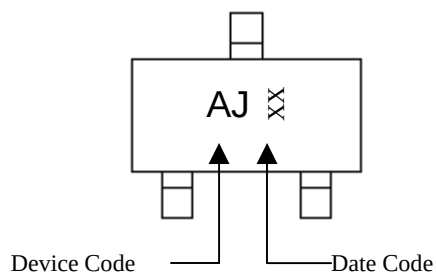
1. 10 sprocket hole pitch cumulative tolerance ± 0.2 .
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. A_0 & B_0 measured on a plane 0.3mm above the bottom of the pocket.
5. K_0 measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

Unit : millimeter

SOT-323 Dimension



Marking:



3-Lead SOT-323 Plastic
Surface Mounted Package

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

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0315	0.0433	0.80	1.10	e1	0.0256*		0.65*	
A1	0.0000	0.0039	0.00	0.10	He	0.0846	0.0965	2.15	2.45
bp	0.0078	0.0157	0.20	0.40	Lp	0.0105	0.0181	0.26	0.46
C	0.0031	0.0059	0.08	0.15	Q	0.0051	0.0091	0.13	0.23
D	0.0709	0.0866	1.80	2.20	v	0.0079	-	0.2	-
E	0.0453	0.0531	1.15	1.35	w	0.0079	-	0.2	-
e	0.0472	0.0551	1.20	1.40	θ	0°	8°	0°	8°