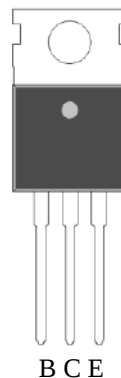


PNP Epitaxial Planar Transistor

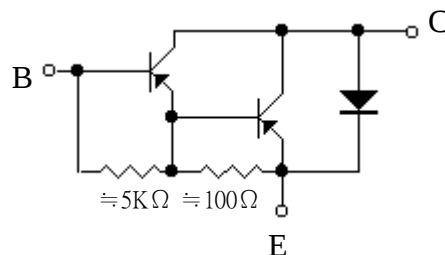
Features:

- High BV_{CEO}
- High DC current gain
- High current capability
- Monolithic construction with built-in base-emitter shunt resistors
- RoHS compliant package

TO-220



KWA1210



B : Base

C : Collector

E : Emitter

Description

The KWA1210 is a PNP Darlington transistor, designed for use in general purpose amplifier and low speed switching application.

Ordering Information

Device	Package	Shipping
KWA1210	TO-220 (RoHS compliant package)	50 pcs/tube, 20 tubes/box, 4 boxes / carton

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CB0}	-120	V
Collector-Emitter Voltage	V _{CEO}	-120	V
Emitter-Base Voltage	V _{EB0}	-5	V
Collector Current (DC)	I _C	-10	A
Collector Current (Pulse)	I _{CP}	-15 (Note)	A
Power Dissipation	P _d (Ta=25°C)	2	W
	P _d (Tc=25°C)	80	W
Thermal Resistance, Junction to Ambient	R _{θJA}	62.5	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	1.56	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

Note : Single Pulse P_w ≤ 350μs, Duty ≤ 2%.

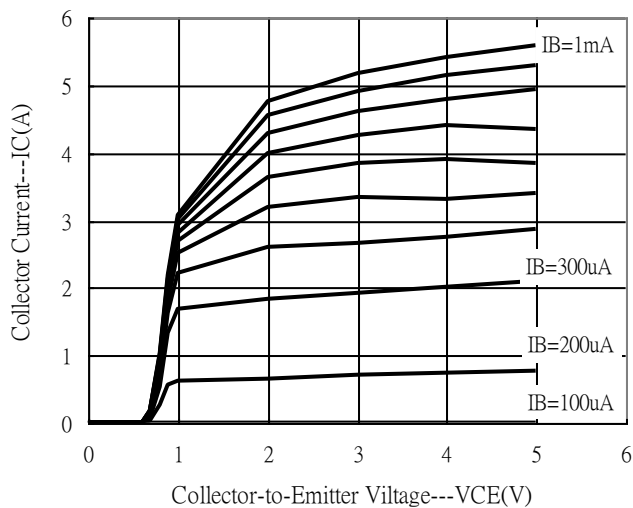
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CEO}	-120	-	-	V	I _C =-1mA, I _B =0
BV _{CBO}	-120	-	-	V	I _C =-100μA, I _E =0
I _{CBO}	-	-	-200	μA	V _{CB} =-120V, I _E =0
I _{CEO}	-	-	-200	μA	V _{CE} =-120V, I _B =0
I _{EBO}	-	-	-2	mA	V _{EB} =-5V, I _C =0
*V _{CE(sat)} 1	-	-	-2	V	I _C =-3A, I _B =-6mA
*V _{CE(sat)} 2	-	-	-2	V	I _C =-8A, I _B =-80mA
*V _{BE(sat)}	-	-	-2.5	V	I _C =-8A, I _B =-80mA
*V _{BE(on)}			-2.8	V	V _{CE} =-4V, I _C =-8A
*h _{FE1}	1	-	20	K	V _{CE} =-4V, I _C =-3A
*h _{FE2}	200	-	-	-	V _{CE} =-4V, I _C =-8A
Cob	-		300	pF	V _{CB} =-10V, I _E =0A, f=1MHz

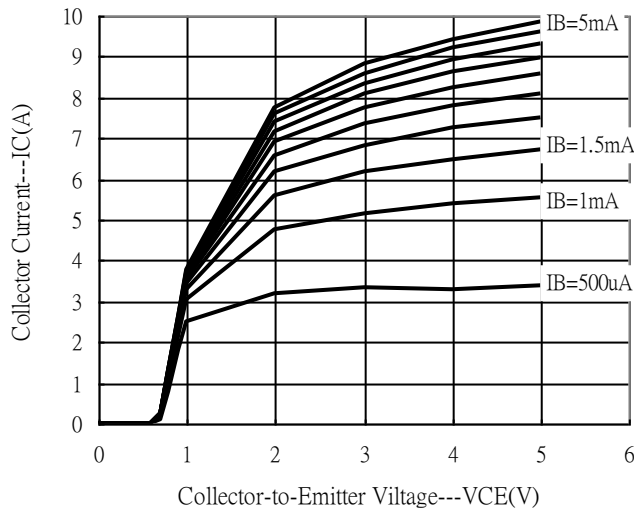
*Pulse Test : Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Typical Characteristics

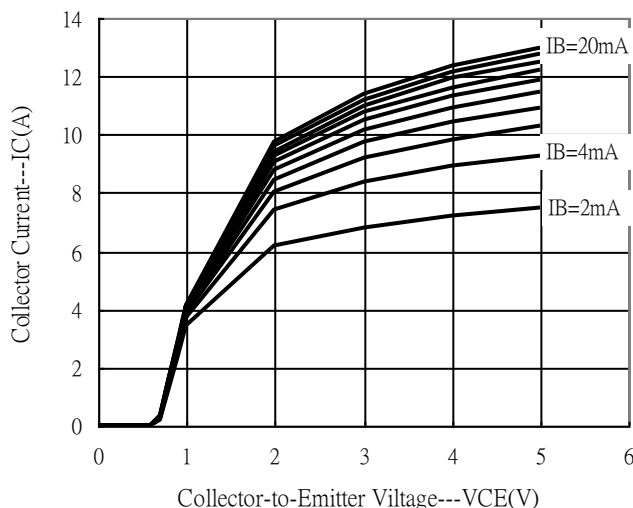
Emitter Grounded Output Characteristics



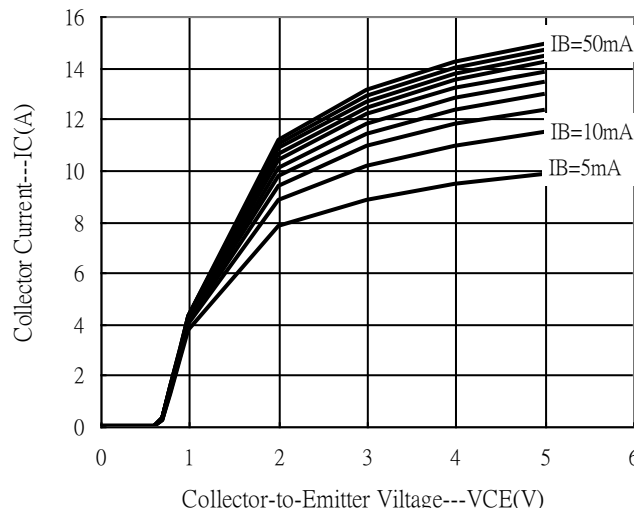
Emitter Grounded Output Characteristics



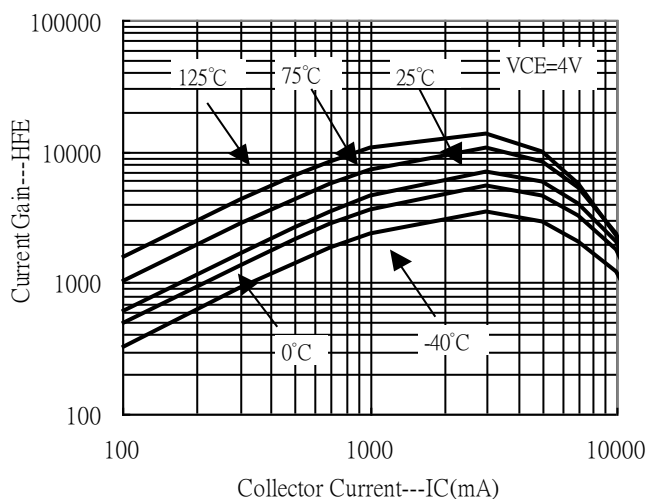
Emitter Grounded Output Characteristics



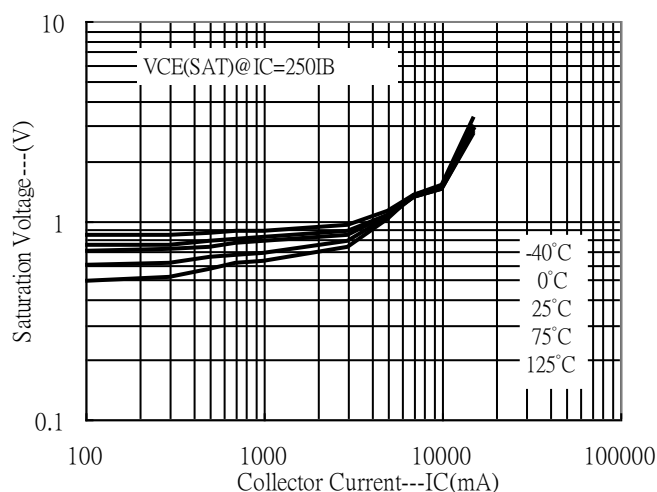
Emitter Grounded Output Characteristics



Current Gain vs. Collector Current

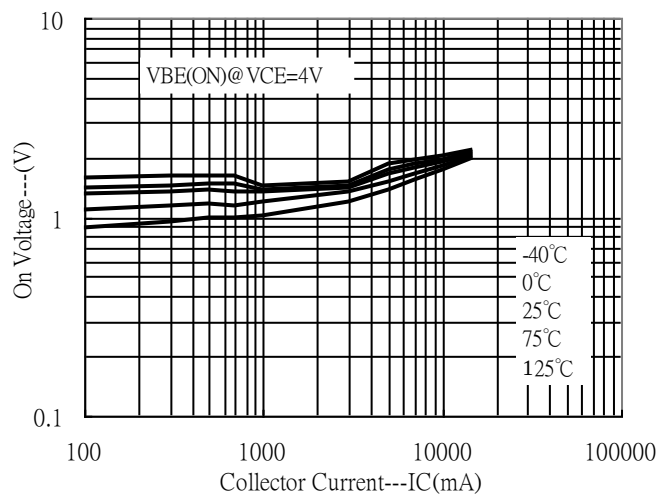


Saturation Voltage vs. Collector Current

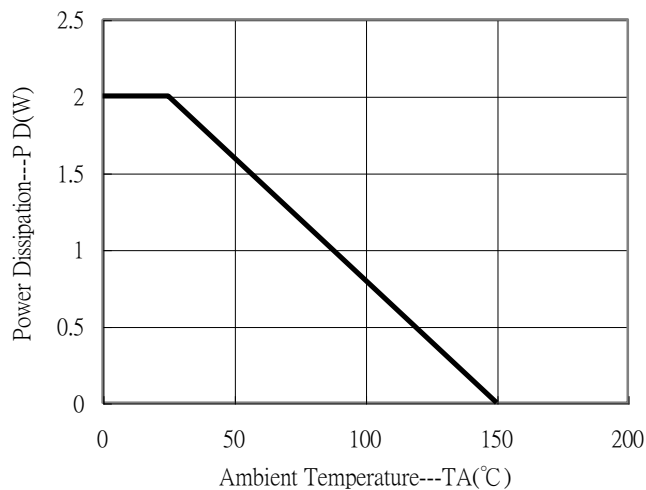


Typical Characteristics (Cont.)

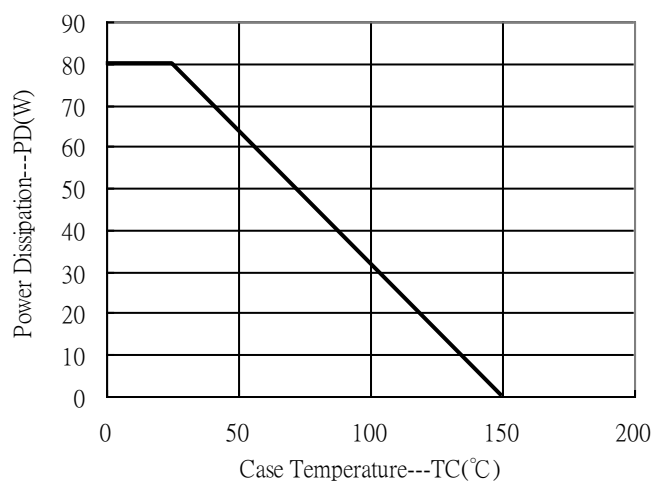
On Voltage vs Collector Current



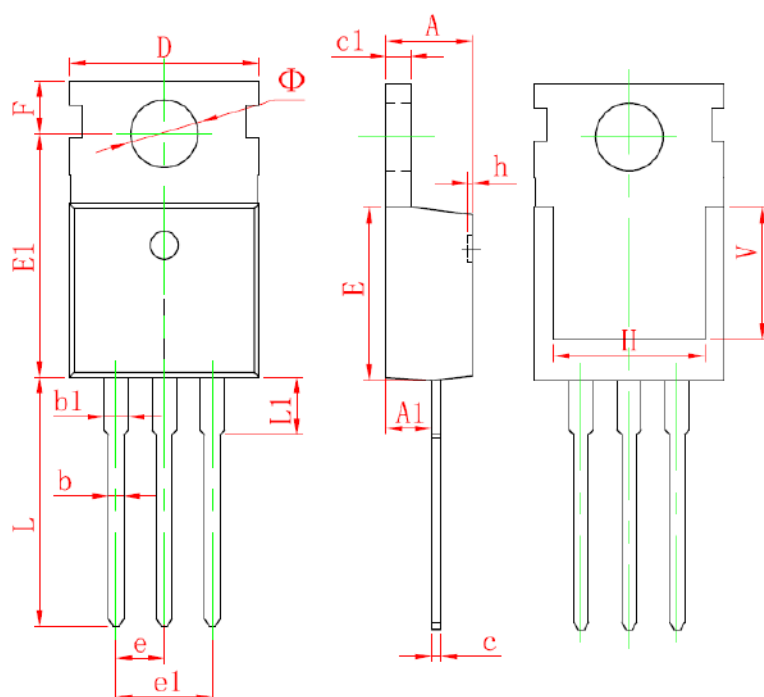
Power Derating Curve



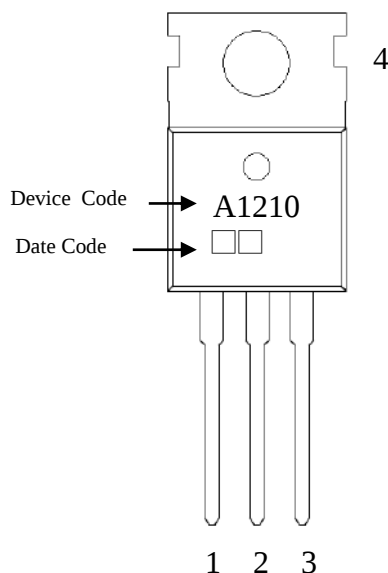
Power Derating Curve



TO-220 Dimension



Marking:



3-Lead TO-220 Plastic Package

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

*: Typical

DIM	Millimeters		Inches		DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	4.400	4.600	0.173	0.181	e	2.540*		0.100*	
A1	2.250	2.550	0.089	0.100	e1	4.980	5.180	0.196	0.204
b	0.710	0.910	0.028	0.036	F	2.650	2.950	0.104	0.116
b1	1.170	1.370	0.046	0.054	H	7.900	8.100	0.311	0.319
c	0.330	0.650	0.013	0.026	h	0.000	0.300	0.000	0.012
c1	1.200	1.400	0.047	0.055	L	12.900	13.400	0.508	0.528
D	9.910	10.250	0.390	0.404	L1	2.850	3.250	0.112	0.128
E	8.950	9.750	0.352	0.384	V	7.500	REF	0.295	REF
E1	12.650	12.950	0.498	0.510	Φ	3.400	3.800	0.134	0.150