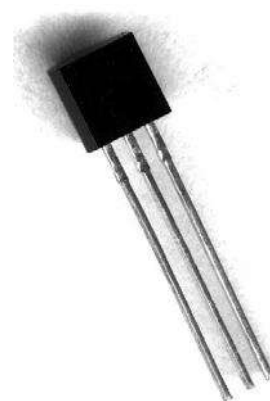


General Purpose NPN Epitaxial Planar Transistor

Description :

- The KWNA14 is a darlington amplifier transistor
- Pb-free lead plating and halogen-free package

TO-92



Ordering Information

Device	Package	Shipping
KWNA14-TB	TO-92 (Pb-free lead plating and halogen-free package)	2000 pcs / Tape & Box
KWNA14-BK	TO-92 (Pb-free lead plating and halogen-free package)	1000 pcs/ bag, 10 bags/box, 10boxes/carton

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CBO}	100	V
Collector-Emitter Voltage	V _{CES}	60	V
Emitter-Base Voltage	V _{EBO}	12	V
Collector Current	I _C	0.5	A
Power Dissipation	P _d	625	mW
Operating Junction Temperature Range	T _j	-55~+150	°C
Storage Temperature Range	T _{stg}	-55~+150	°C

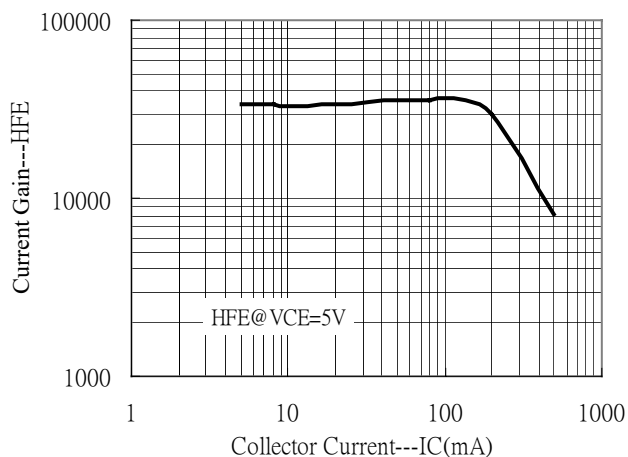
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	100	-	-	V	I _C =100μA
BV _{CES}	60	-	-	V	I _C =100μA, V _{BE} =0V
BV _{EBO}	12	-	-	V	I _E =10μA
I _{CBO}	-	-	50	nA	V _{CE} =80V
I _{EBO}	-	-	50	nA	V _{EB} =10V
*V _{CE(sat)}	-	-	1.2	V	I _C =100mA, I _B =0.1mA
*V _{BE(on)}	-	-	2.0	V	V _{CE} =5V, I _C =100mA
*h _{FE1}	10K	-	-		V _{CE} =5V, I _C =10mA
*h _{FE2}	20K	-	-		V _{CE} =5V, I _C =100mA
f _T	125	-	-	MHz	V _{CE} =5V, I _C =10mA, f=100MHz
C _{ob}	-	-	7	pF	V _{CB} =10V, f=100MHz

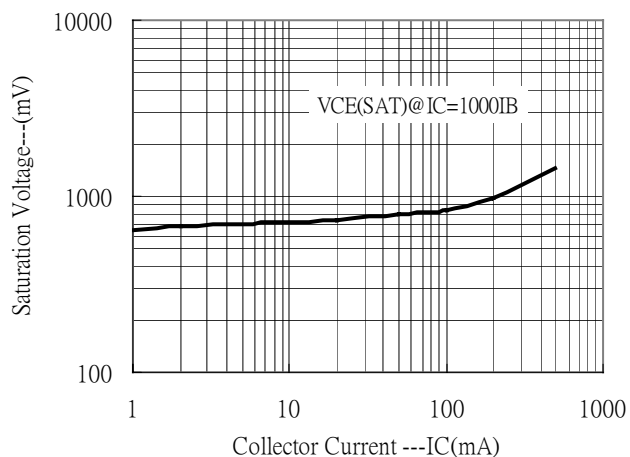
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Typical Characteristics

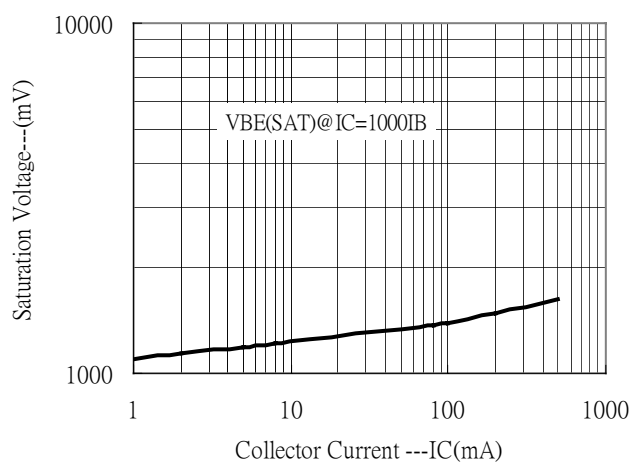
Current Gain vs Collector Current



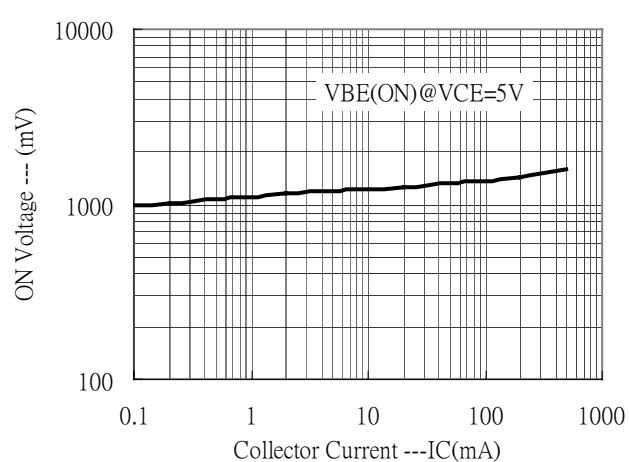
Saturation Voltage vs Collector Current



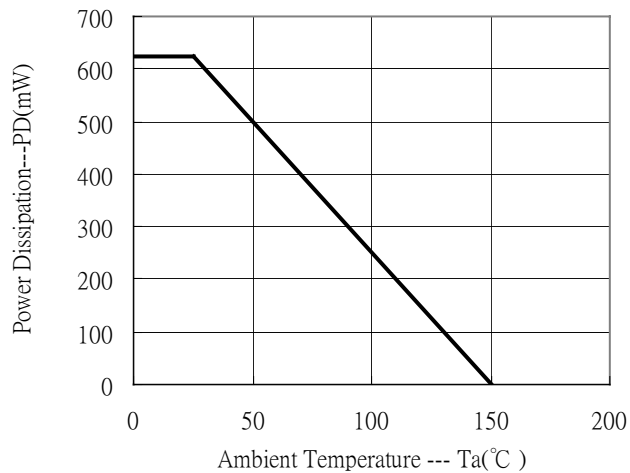
Saturation Voltage vs Collector Current



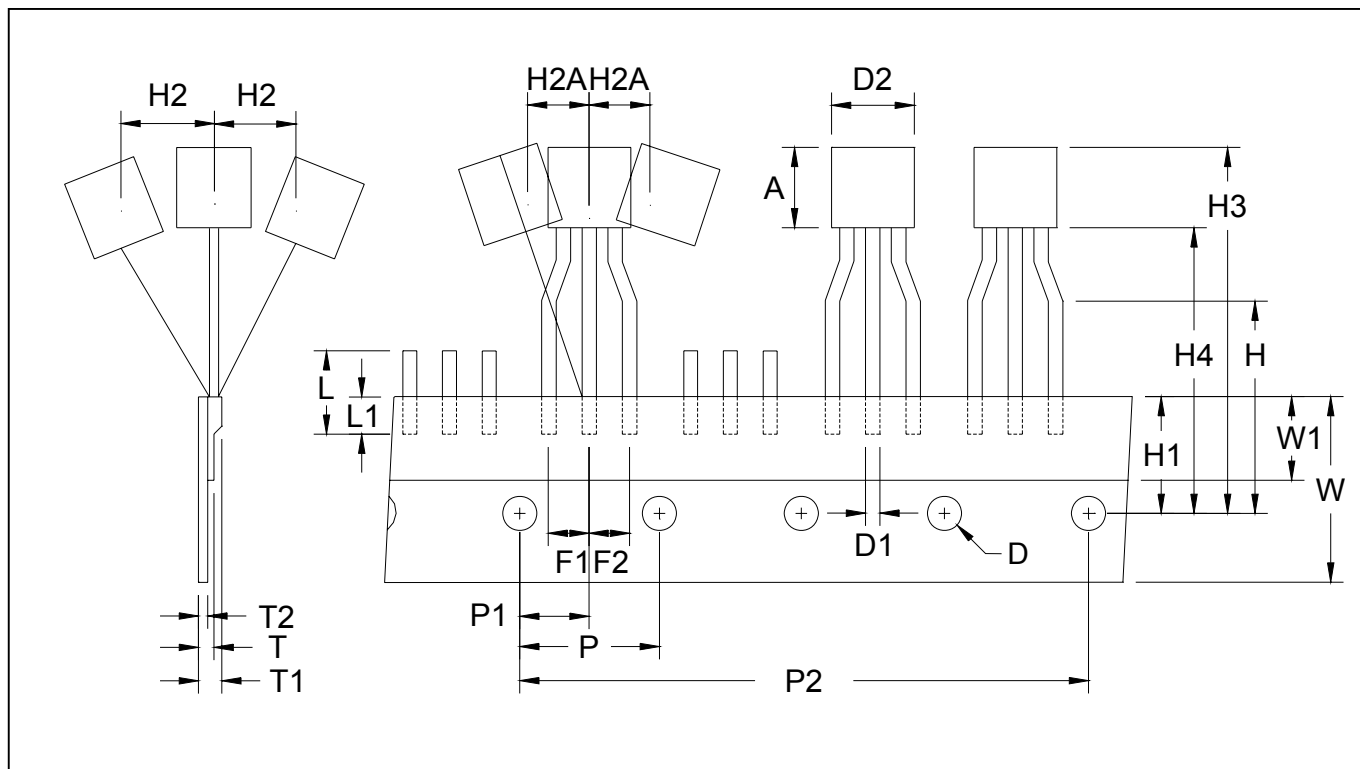
ON Voltage vs Collector Current



Power Derating Curve

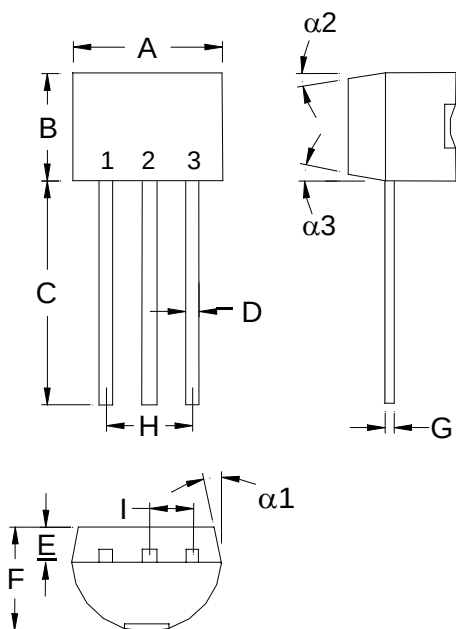


TO-92 Taping Outline

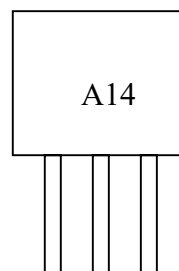


DIM	Item	Millimeters	
		Min.	Max.
A	Component body height	4.33	4.83
D	Tape Feed Diameter	3.80	4.20
D1	Lead Diameter	0.36	0.53
D2	Component Body Diameter	4.33	4.83
F1,F2	Component Lead Pitch	2.40	2.90
F1,F2	F1-F2	-	±0.3
H	Height Of Seating Plane	15.50	16.50
H1	Feed Hole Location	8.50	9.50
H2	Front To Rear Deflection	-	1
H2A	Deflection Left Or Right	-	1
H3	Component Height	-	27
H4	Feed Hole To Bottom Of Component	-	21
L	Lead Length After Component Removal	-	11
L1	Lead Wire Enclosure	2.50	-
P	Feed Hole Pitch	12.50	12.90
P1	Center Of Seating Plane Location	5.95	6.75
P2	4 Feed Hole Pitch	50.30	51.30
T	Over All Tape Thickness	-	0.55
T1	Total Taped Package Thickness	-	1.42
T2	Carrier Tape Thickness	0.36	0.68
W	Tape Width	17.50	19.00
W1	Adhesive Tape Width	5.00	7.00
-	20 pcs Pitch	253	255

TO-92 Dimension



Marking:



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

3-Lead TO-92 Plastic Package

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	α1	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	α2	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	α3	-	*2°	-	*2°