

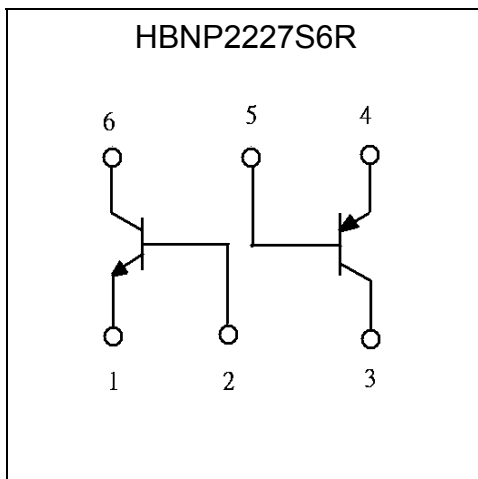
General Purpose NPN / PNP Epitaxial Planar Transistors (dual transistors)

HBNP2227S6R

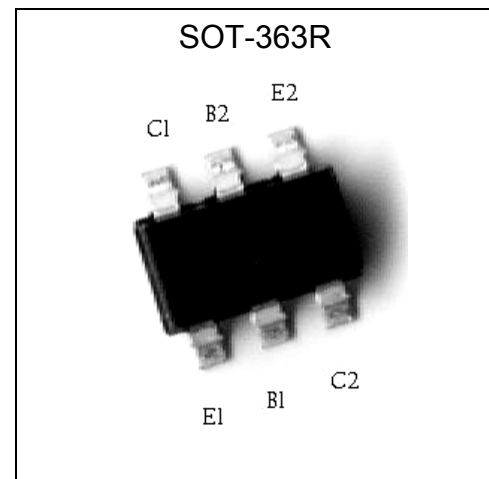
Features

- Includes a PN2222A chip and PN2907A chip in a SOT-363R package.
- Mounting possible with SOT-323 automatic mounting machines.
- Transistor elements are independent, eliminating interference.
- Mounting cost and area can be cut in half.

Equivalent Circuit



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits		Unit
		TR1 (NPN)	TR2 (PNP)	
Collector-Base Voltage	V _{CB0}	75	-60	V
Collector-Emitter Voltage	V _{CE0}	40	-60	V
Emitter-Base Voltage	V _{EB0}	6	-5	V
Collector Current	I _c	600	-600	mA
Power Dissipation	P _d	200(total) *1		mW
Junction Temperature	T _j	150		°C
Storage Temperature	T _{stg}	-55~+150		°C

Note: *1 150mW per element must not be exceeded.



Characteristics (Ta=25°C)

• TR1 (NPN)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	75	-	-	V	I _C =10μA
BV _{CEO}	40	-	-	V	I _C =10mA
BV _{EBO}	6	-	-	V	I _E =10μA
I _{CBO}	-	-	10	nA	V _{CB} =60V
I _{CEX}	-	-	10	nA	V _{CE} =60V, V _{EB} =3V
I _{EBO}	-	-	100	nA	V _{EB} =3V
*V _{CE(sat)}	-	-	0.3	V	I _C =150mA, I _B =15mA
*V _{CE(sat)}	-	-	1.0	V	I _C =500mA, I _B =50mA
*V _{BE(sat)}	-	-	1.2	V	I _C =150mA, I _B =15mA
*V _{BE(sat)}	-	-	2.0	V	I _C =500mA, I _B =50mA
h _{FE}	35	-	-	-	V _{CE} =10V, I _C =100μA
h _{FE}	50	-	-	-	V _{CE} =10V, I _C =1mA
h _{FE}	75	-	-	-	V _{CE} =10V, I _C =10mA
*h _{FE}	100	-	300	-	V _{CE} =10V, I _C =150mA
*h _{FE}	50	-	-	-	V _{CE} =1V, I _C =150mA
*h _{FE}	40	-	-	-	V _{CE} =10V, I _C =500mA
f _T	300	-	-	MHz	V _{CE} =20V, I _C =20mA, f=100MHz
C _{ob}	-	-	8	pF	V _{CB} =10V, f=1MHz

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

• TR2 (PNP)

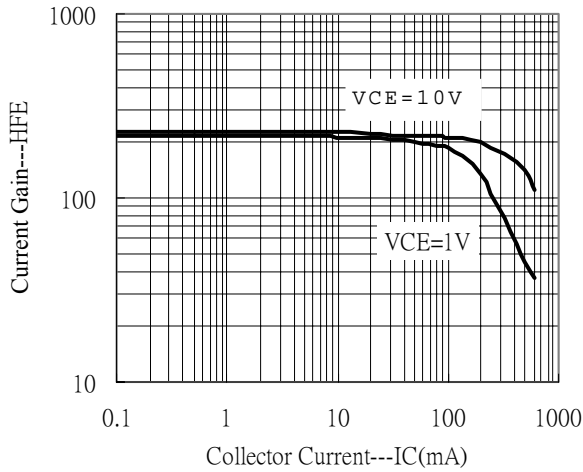
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	-60	-	-	V	I _C =-10μA
BV _{CEO}	-60	-	-	V	I _C =-10mA
BV _{EBO}	-5	-	-	V	I _E =-10μA
I _{CBO}	-	-	-10	nA	V _{CB} =-50V
I _{CEX}	-	-	-50	nA	V _{CE} =-30V, V _{EB} =-0.5V
I _{EBO}	-	-	-100	nA	V _{EB} =-3V
*V _{CE(sat)}	-	-	-0.4	V	I _C =-150mA, I _B =-15mA
*V _{CE(sat)}	-	-	-1.6	V	I _C =-500mA, I _B =-50mA
*V _{BE(sat)}	-	-	-1.3	V	I _C =-150mA, I _B =-15mA
*V _{BE(sat)}	-	-	-2.6	V	I _C =-500mA, I _B =-50mA
h _{FE}	75	-	-	-	V _{CE} =-10V, I _C =-100μA
h _{FE}	100	-	-	-	V _{CE} =-10V, I _C =-1mA
h _{FE}	100	-	-	-	V _{CE} =-10V, I _C =-10mA
*h _{FE}	100	-	300	-	V _{CE} =-10V, I _C =-150mA
*h _{FE}	50	-	-	-	V _{CE} =-10V, I _C =-500mA
f _T	200	-	-	MHz	V _{CE} =-20V, I _C =-50mA, f=100MHz
C _{ob}	-	-	8	pF	V _{CB} =-10V, f=1MHz

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

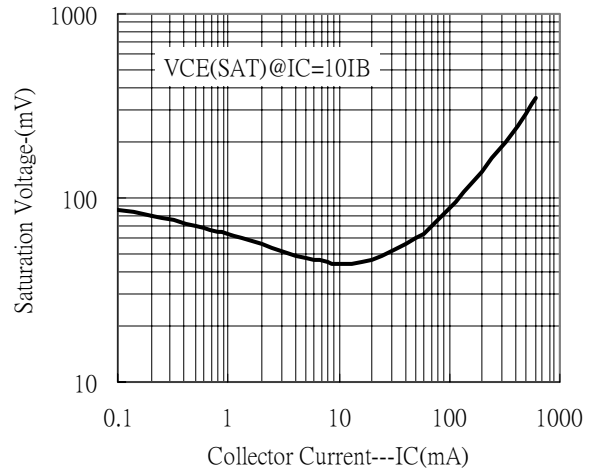
Characteristic curves

• TR1 (NPN)

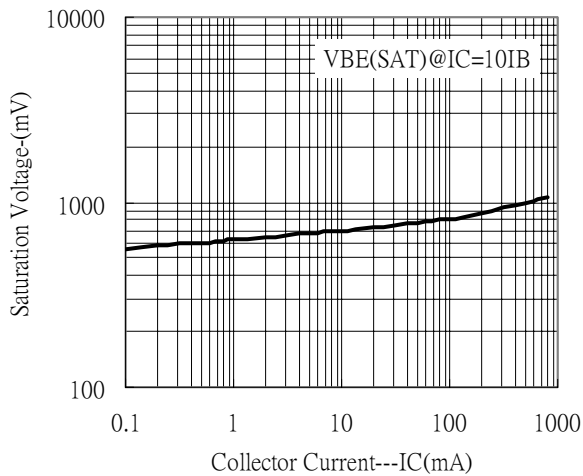
Current Gain vs Collector Current



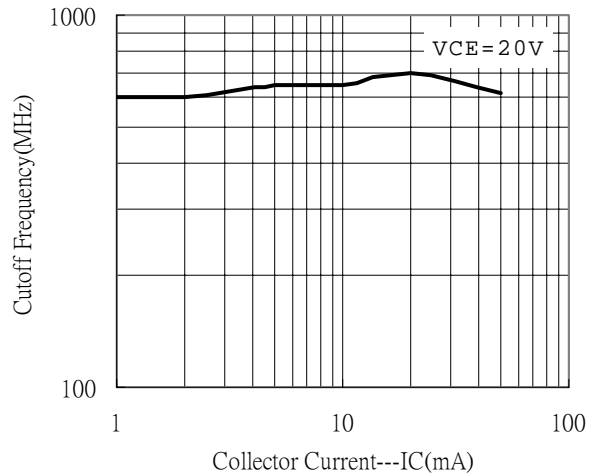
Saturation Voltage vs Collector Current



Saturation Voltage vs Collector Current



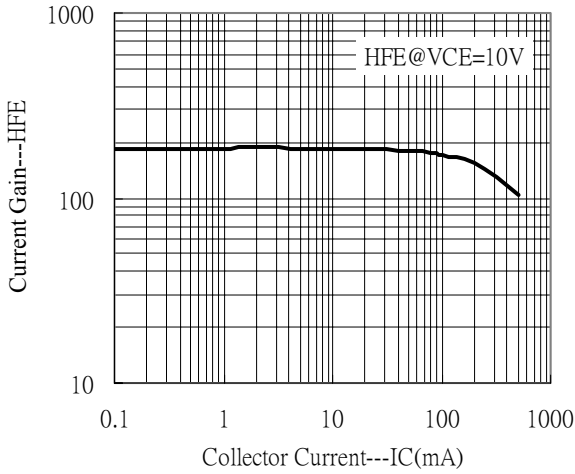
Cutoff Frequency vs Collector Current



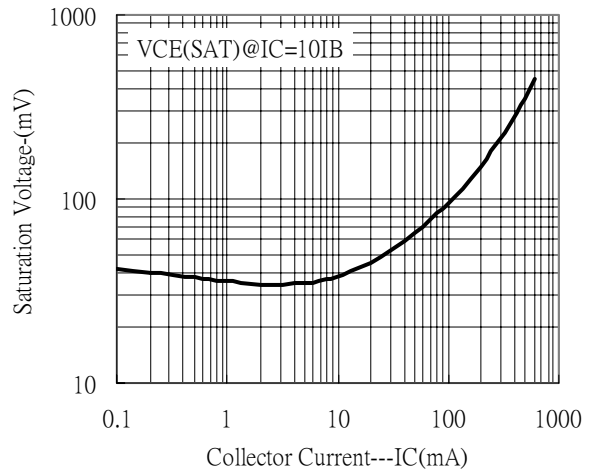


• TR2 (PNP)

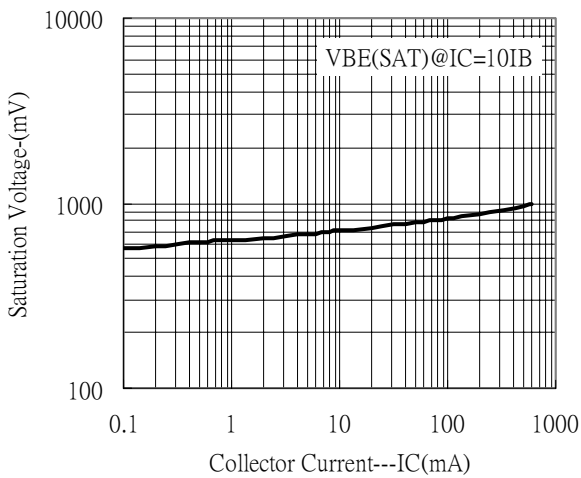
Current Gain vs Collector Current



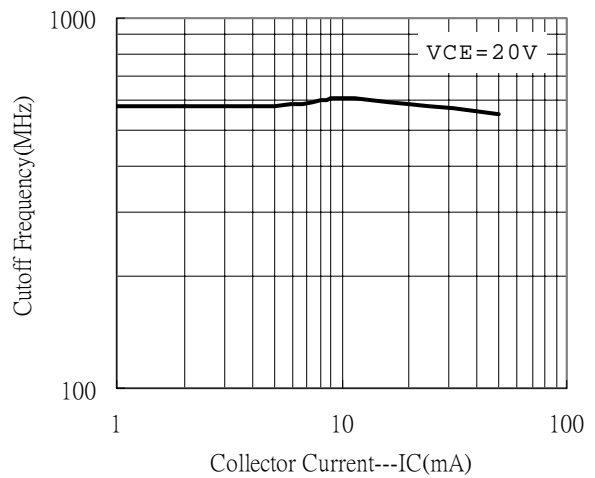
Saturation Voltage vs Collector Current



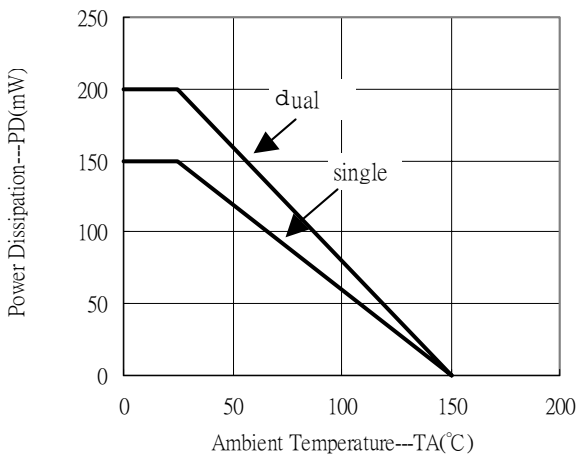
Saturation Voltage & Collector Current



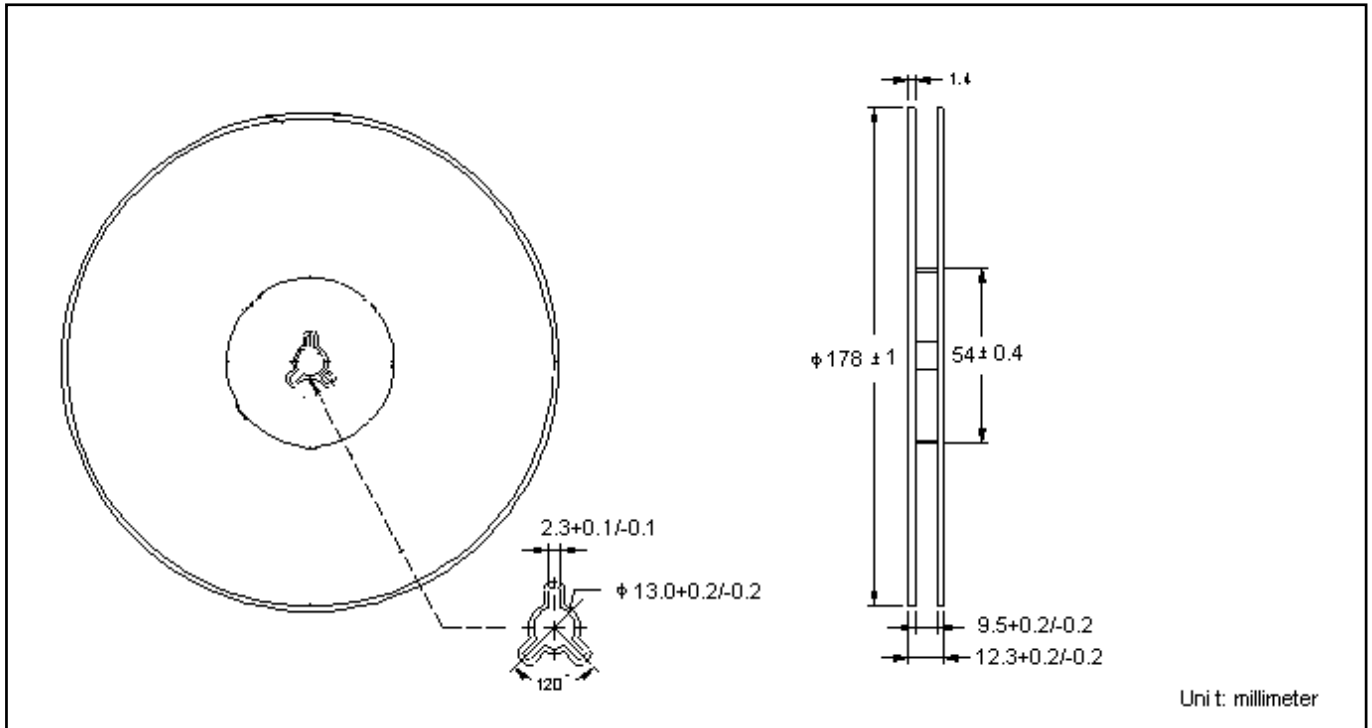
Cutoff Frequency vs Collector Current



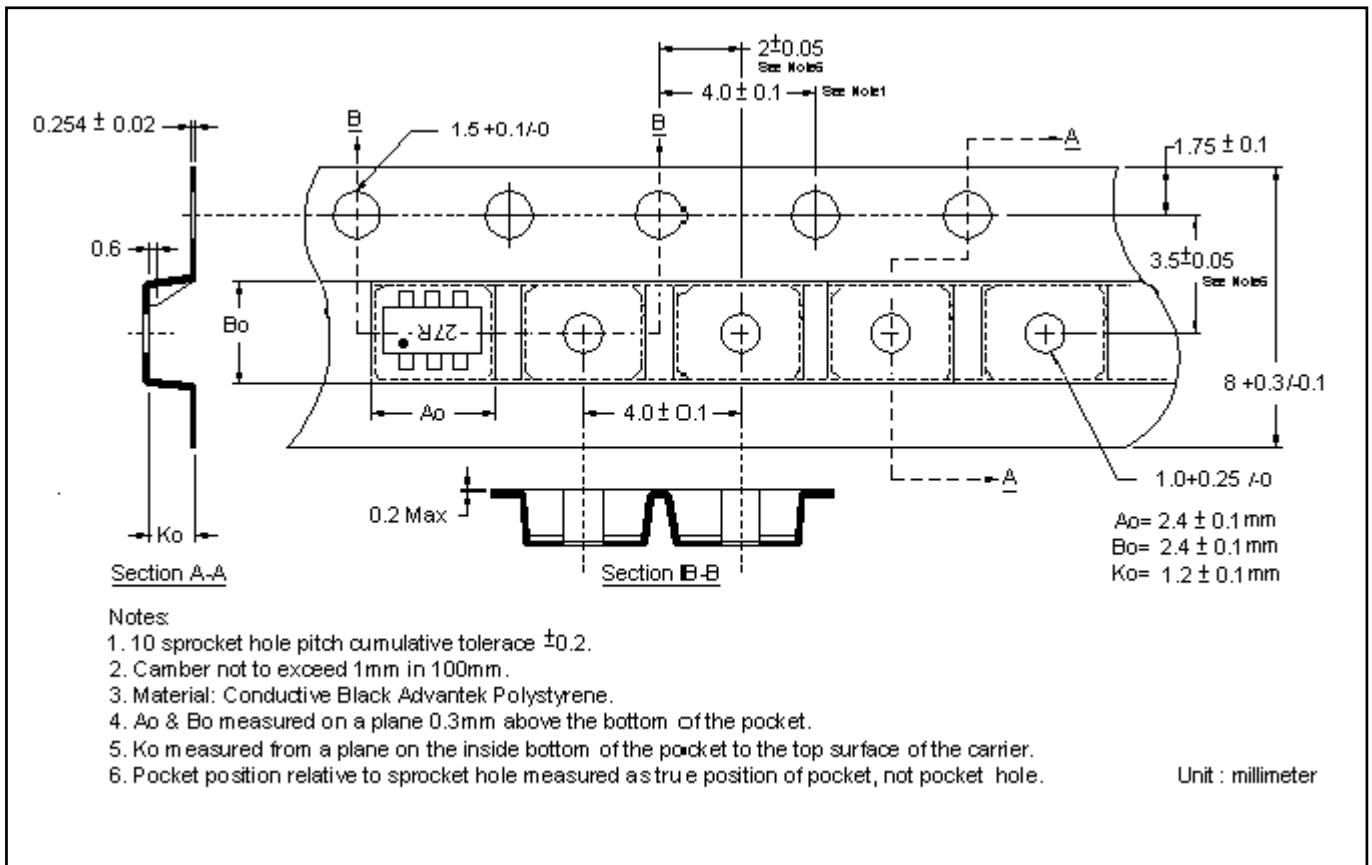
Power Derating Curves



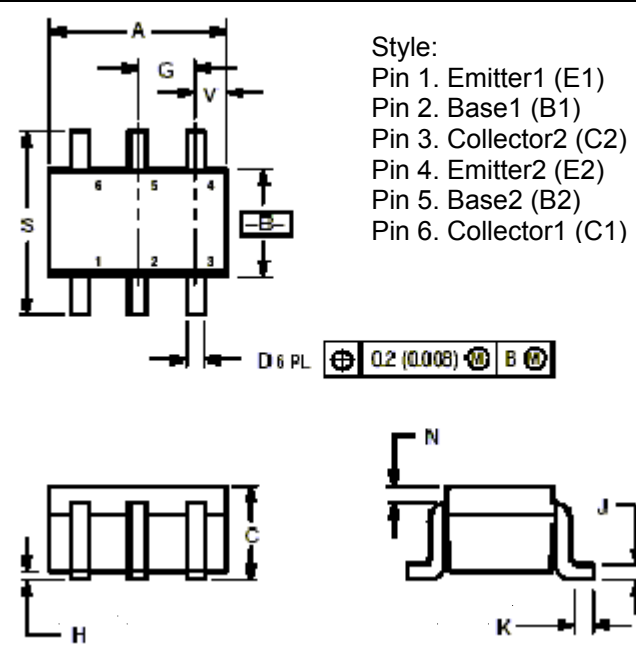
Reel Dimension



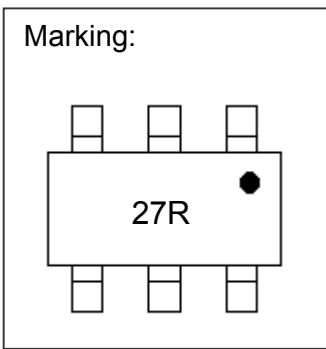
Carrier Tape Dimension



SOT-363R Dimension



Style:
 Pin 1. Emitter1 (E1)
 Pin 2. Base1 (B1)
 Pin 3. Collector2 (C2)
 Pin 4. Emitter2 (E2)
 Pin 5. Base2 (B2)
 Pin 6. Collector1 (C1)

Marking:


6-Lead SOT-363R Plastic Surface Mounted Package
 CYStek Package Code: S6R

D 6 PL \oplus 0.2 (0.008) \ominus B \oplus

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.071	0.087	1.8	2.2	J	0.004	0.010	0.1	0.25
B	0.045	0.053	1.15	1.35	K	0.004	0.012	0.1	0.30
C	0.031	0.043	0.8	1.1	N	0.008 REF		0.20 REF	
D	0.004	0.012	0.1	0.3	S	0.079	0.087	2.00	2.40
G	0.026BSC		0.65BSC		Y	0.012	0.016	0.30	0.40
H	-	0.004	-	0.1					

Notes : 1.Controlling dimension : millimeters.
 2.Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
 3.If there is any question with packing specification or packing method, please contact your local CYStek sales office.

Material :

- Lead : 42 Alloy ; solder plating
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0

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