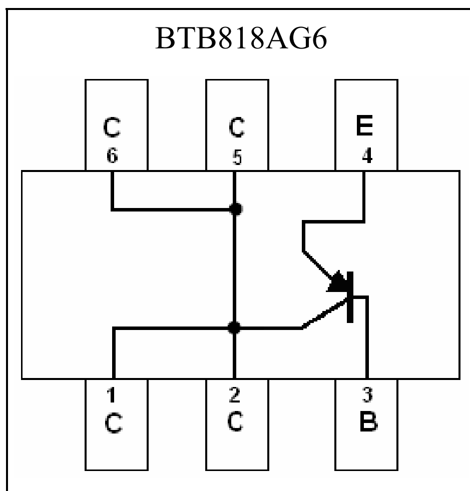
Low Vcesat PNP Epitaxial Planar Transistor

BTB818AG6

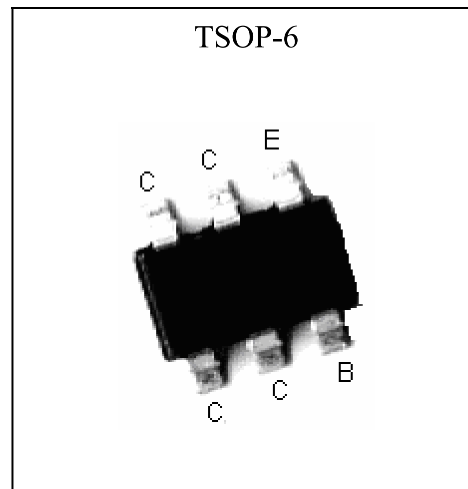
Features

- Low V_{CE}(sat), V_{CE}(sat)=-0.11V (typical), at I_C / I_B =- 500mA /- 5mA
- Pb-free lead plating and halogen-free package

Equivalent Circuit



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current(DC)	I_C	-3	A
Peak Collector Current	I_{CM}	-6 *1	A
Peak Base Current	I_{BM}	-500	mA
Power Dissipation	P_D	1.2 *2	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	104	°C/W
Operating Junction and Storage Temperature Range	Tj;Tstg	-55~+150	°C

Note :1 Single pulse, Pw=10ms

2. When mounted on 25mm×25mm×1.6 mm FR-4 PCB with high coverage of single sided 1 oz copper, in still air condition.

Characteristics (Ta=25°C)

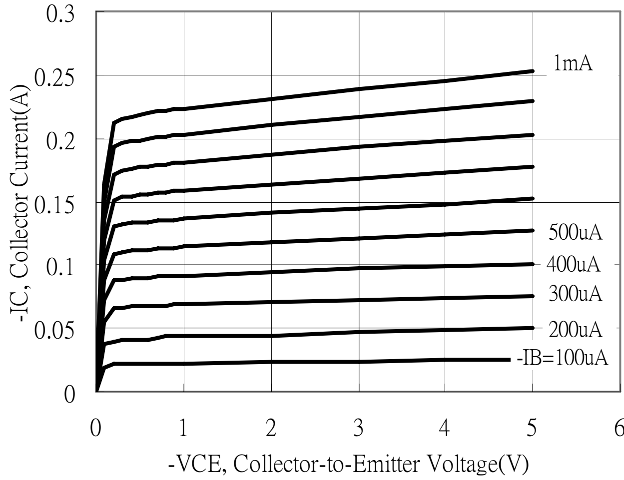
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-50	-	-	V	I_C=-50μA, I_E=0
BV_{CEO}	-30	-	-	V	I_C=-1mA, I_B=0
BV_{EBO}	-7	-	-	V	I_E=-50μA, I_C=0
I_{CBO}	-	-	-100	nA	V_{CB}=-50V, I_E=0
I_{EBO}	-	-	-100	nA	V_{EB}=-7V, I_C=0
*$V_{CE(sat)}$ 1	-	-108	-150	mV	I_C=-500mA, I_B=-5mA
*$V_{CE(sat)}$ 2	-	-175	-300	mV	I_C=-1.2A, I_B=-12mA
*$V_{CE(sat)}$ 3	-	-376	-500	mV	I_C=-2A, I_B=-20mA
*$V_{BE(sat)}$ 1	-	-0.75	-1.1	V	I_C=-500mA, I_B=-5mA
*$V_{BE(sat)}$ 2	-	-0.82	-1.1	V	I_C=-1.2A, I_B=-12mA
*$V_{BE(sat)}$ 3	-	-0.89	-1.2	V	I_C=-2A, I_B=-20mA
*$V_{BE(on)}$	-	-0.73	-1.1	V	V_{CE}=-2V, I_C=-500mA
*h_{FE} 1	100	-	-	-	V_{CE}=-1V, I_C=-500mA
*h_{FE} 2	100	-	-	-	V_{CE}=-3V, I_C=-2.5A
f_T	-	150	-	MHz	V_{CE}=-5V, I_C=-10mA, f=100MHz
Cob	-	12	-	pF	V_{CB}=-10V, f=1MHz

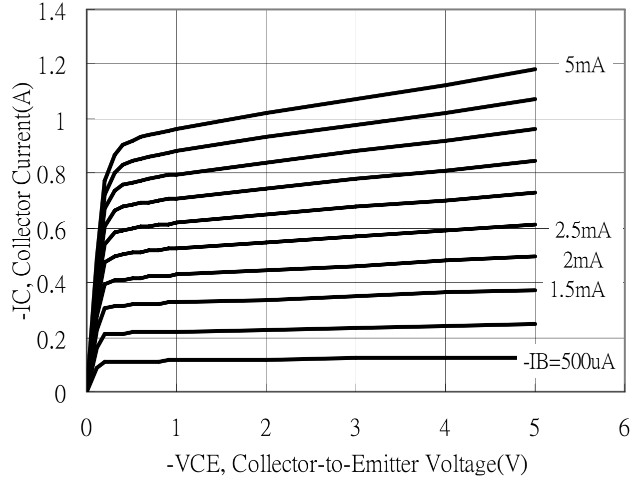
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

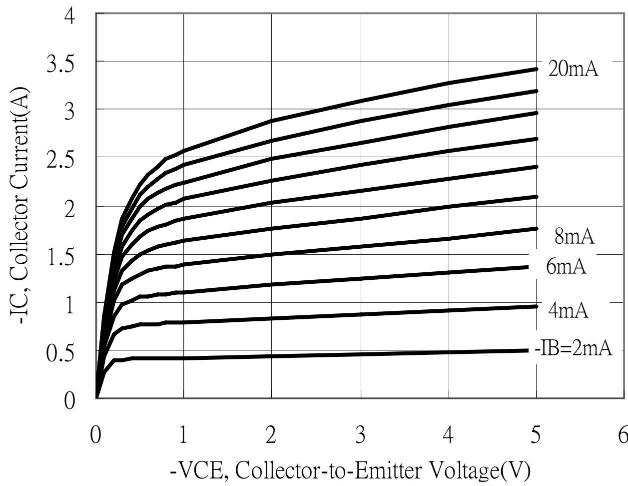
Ordering Information

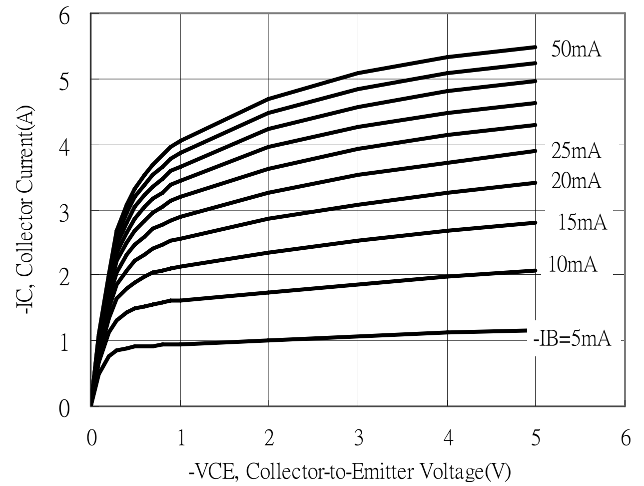
Device	Package	Shipping
BTB818AG6-0-T1-G	TSOP-6 (Pb-free lead plating and halogen-free package)	3000 pcs / Tape & Reel

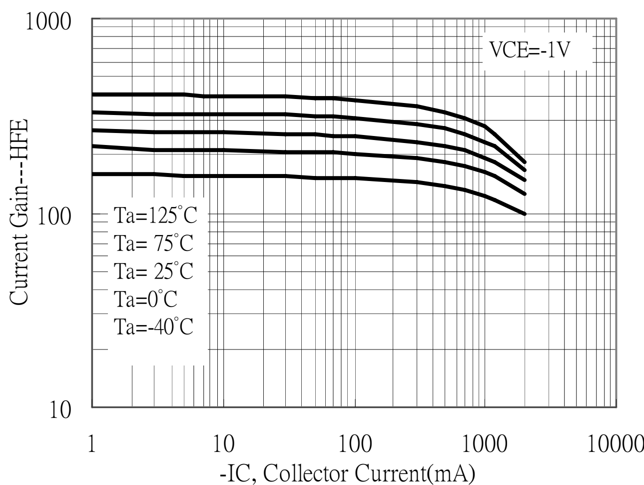
Typical Characteristics

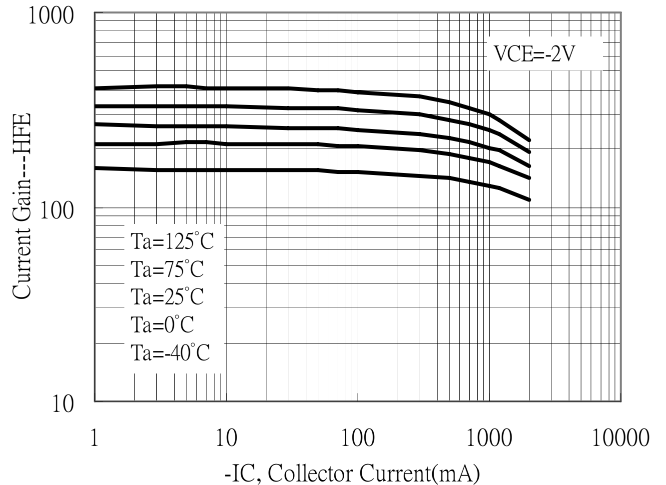




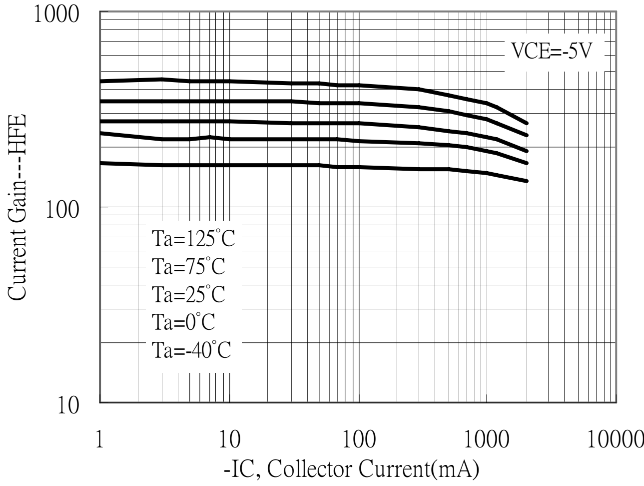


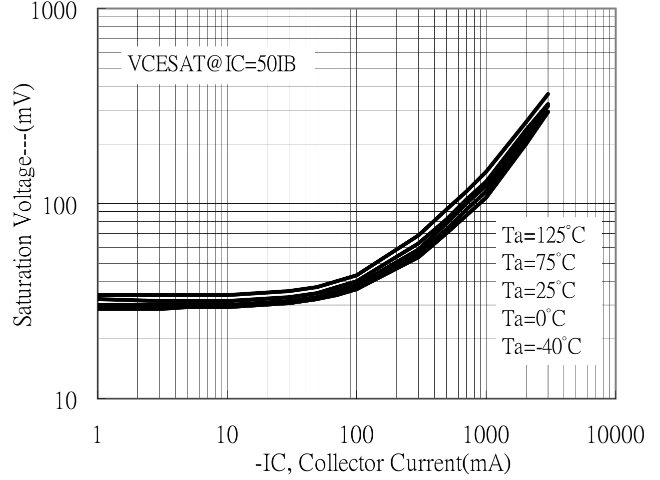


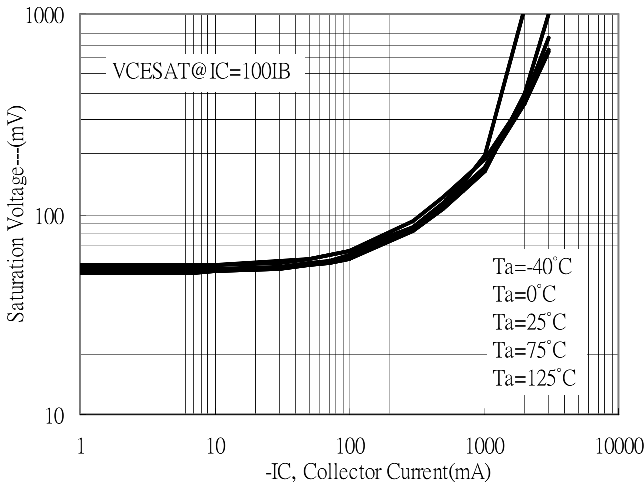


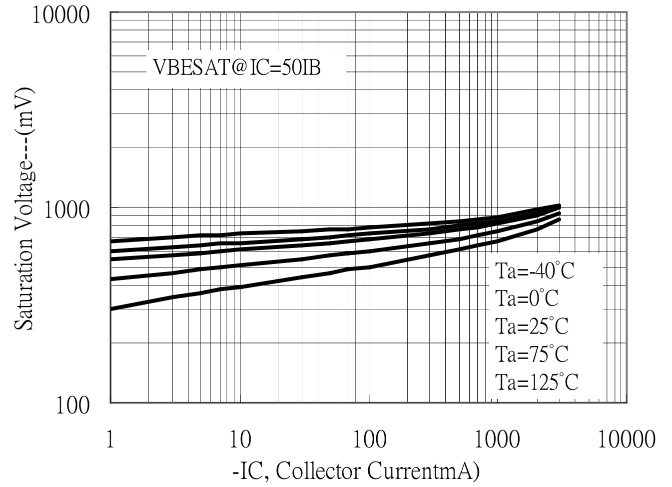


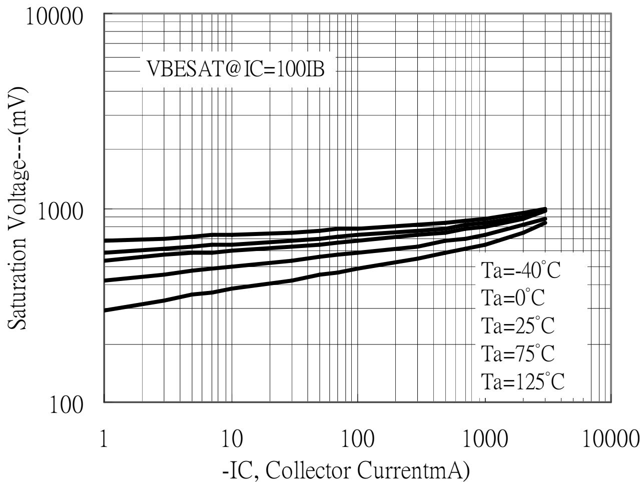
Typical Characteristics(Cont.)

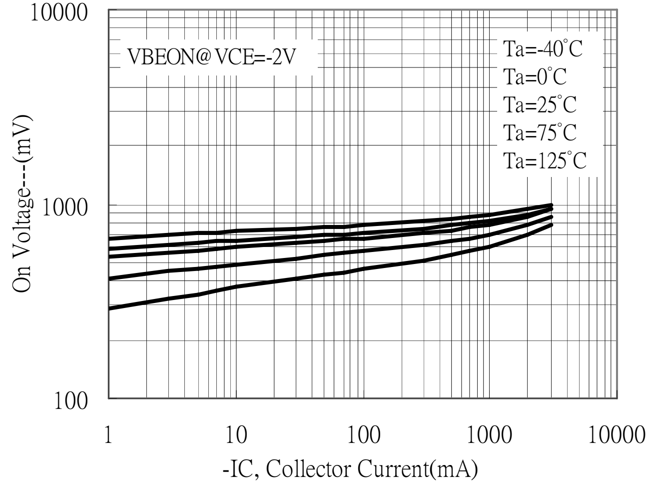




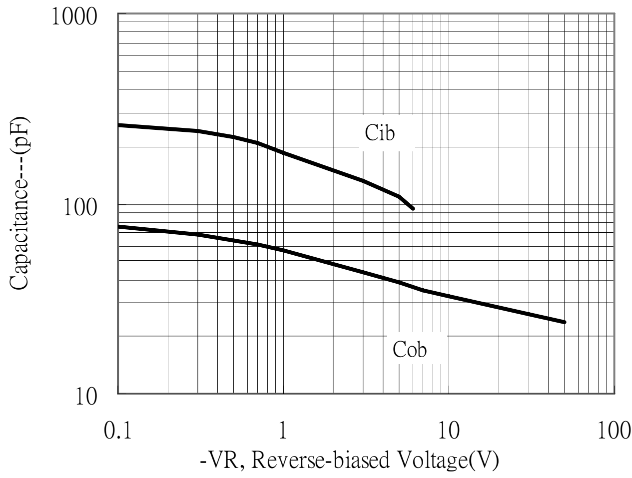


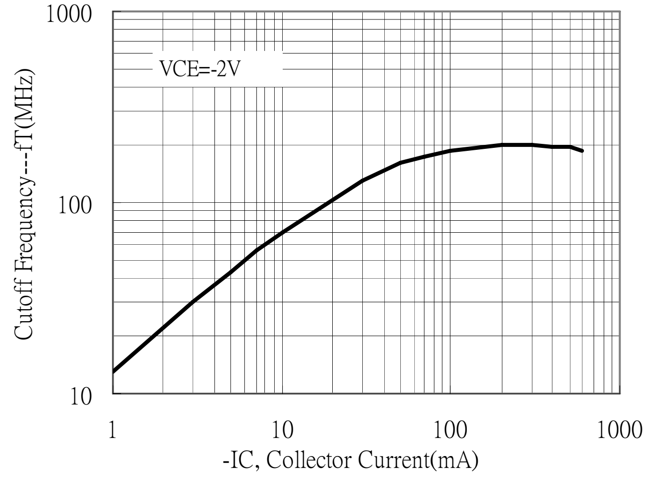


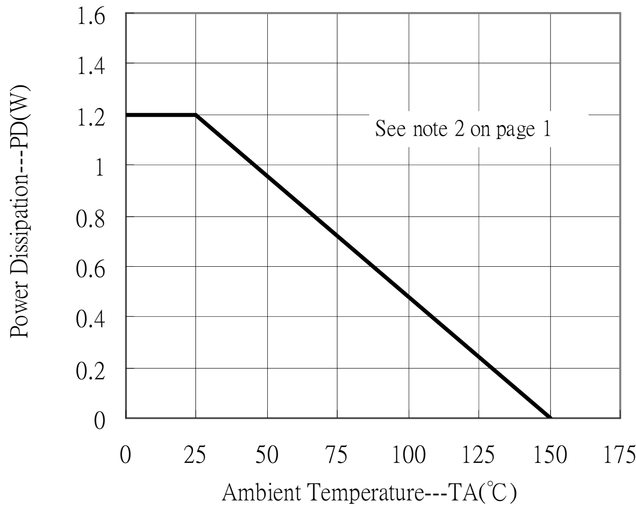




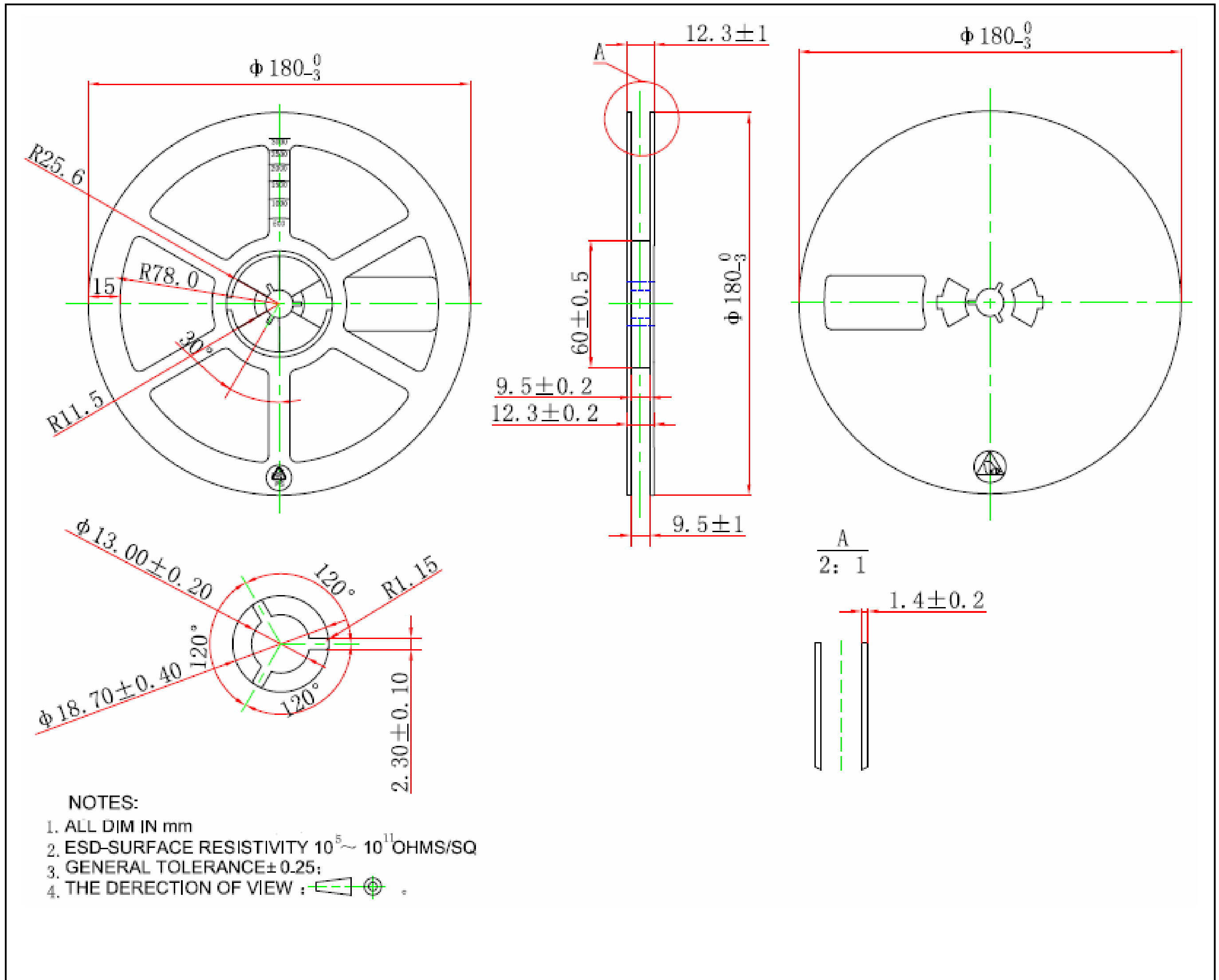
Typical Characteristics(Cont.)



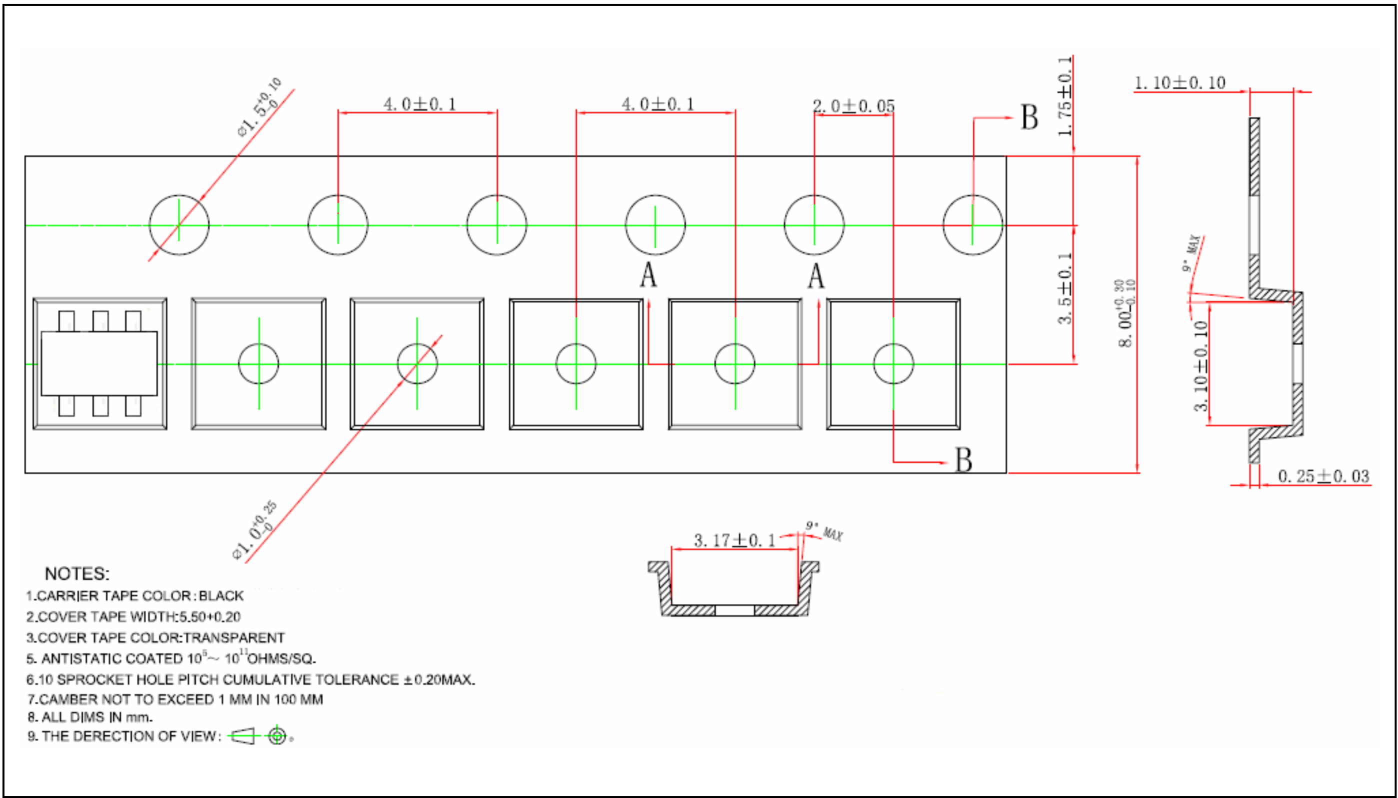




Reel Dimension



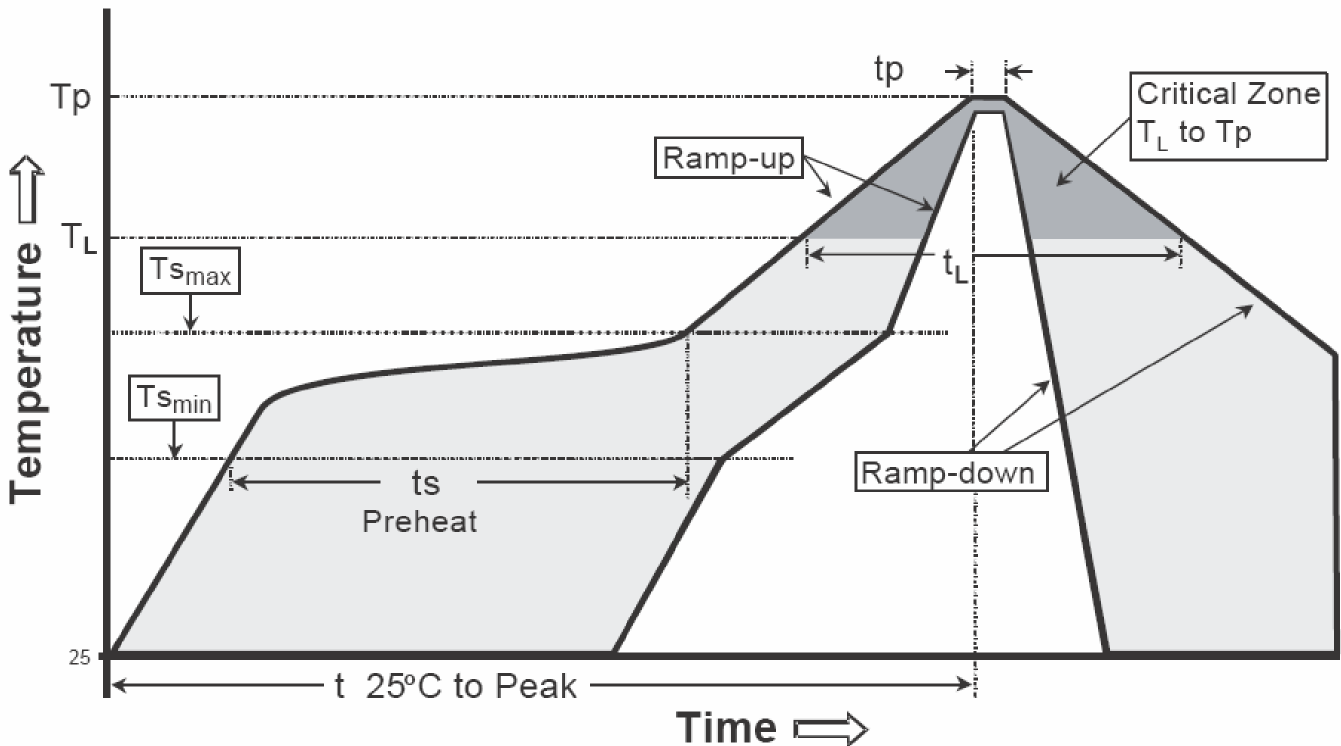
Carrier Tape Dimension



Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

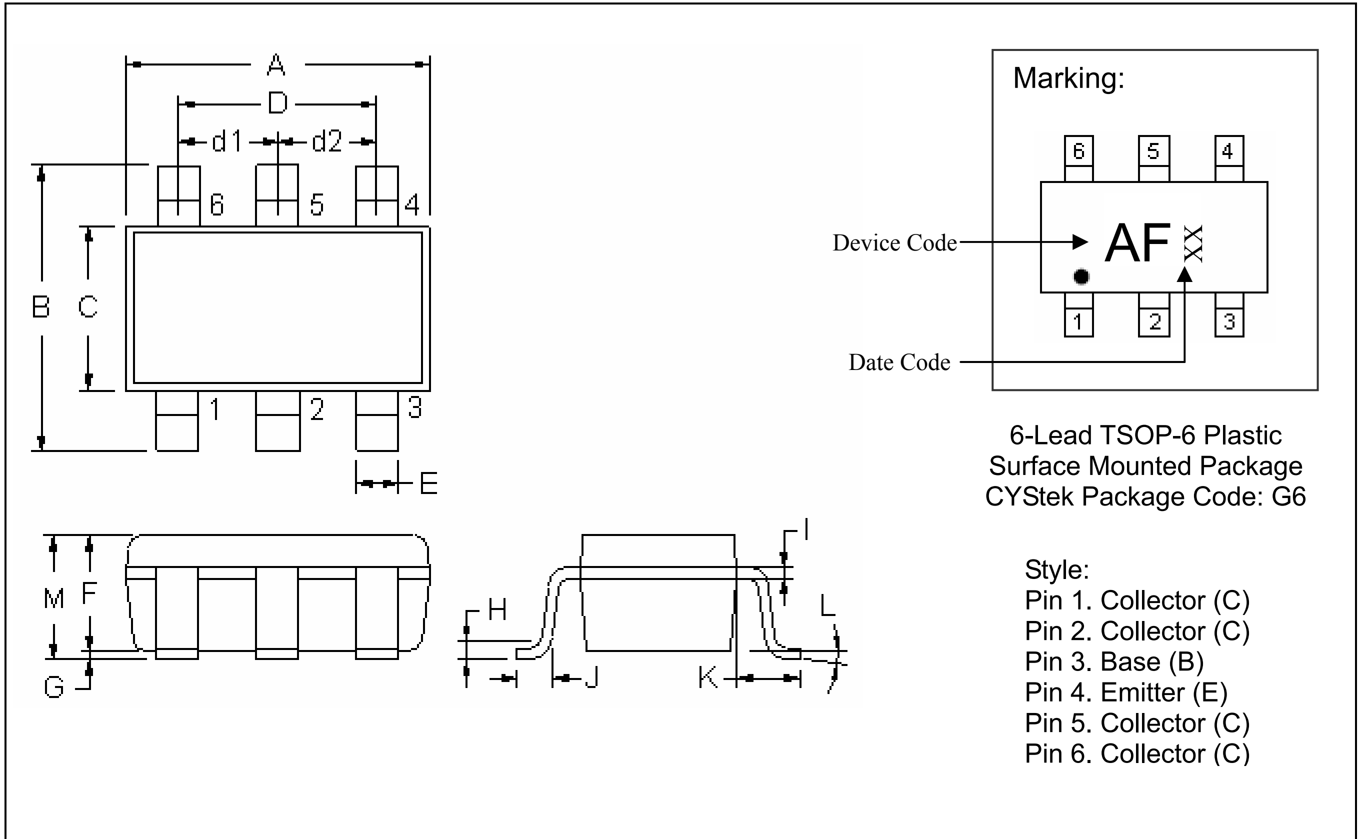
Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(Ts min) −Temperature Max(Ts max) −Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − Time (tL)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

TSOP-6 Dimension



DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1063	0.1220	2.70	3.10	G	0	0.0039	0	0.10
B	0.1024	0.1181	2.60	3.00	H	-	0.0098	-	0.25
C	0.0551	0.0709	1.40	1.80	I	0.0047 REF		0.12 REF	
D	0.0748 REF		1.90 REF		J	0.0177 REF		0.45 REF	
d1	0.0374 REF		0.95 REF		K	0.0236 REF		0.60 REF	
d2	0.0374 REF		0.95 REF		L	0°	10°	0°	10°
E	0.0118	0.0197	0.30	0.50	M	-	0.0433	-	1.10
F	0.0276	0.0394	0.70	1.00					

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 : Pure tin plated.
- Mold Compound : Epoxy resin family, flammability solid burning class:UL94V-0.

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