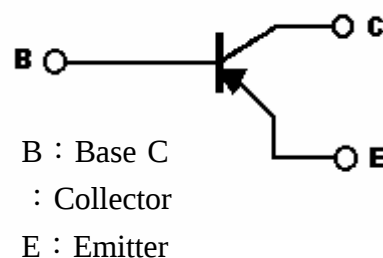
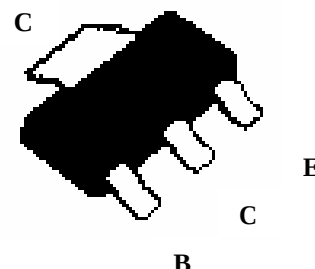


PNP Epitaxial Planar High Current (High Performance) Transistor

Features:

- 4 Amps continuous current, up to 10 Amps peak current
- Very low saturation voltage
- Extremely low equivalent on resistance, $R_{CE(SAT)}=79m\Omega$ typ. at 3A
- Pb-free lead plating and halogen-free package

SOT-223



Absolute Minimum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-180	V
Collector-Emitter Voltage	V_{CEO}	-140	V
Emitter-Base Voltage	V_{EBO}	-7	V
Continuous Collector Current	I_C	-4	A
Peak Collector Current	I_{CP}	-10	A
Base Current	I_B	-1	A
Power Dissipation @Ta=25°C	P_D	3 (Note 1)	W
		1.6 (Note 2)	W
Operating and Storage Temperature Range	$T_j ; T_{stg}$	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction-to-case, max	$R_{\theta JC}$	12.5	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction-to-ambient, max	$R_{\theta JA}$	41.7 (Note 1)	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction-to-ambient, max		78 (Note 2)	$^{\circ}\text{C}/\text{W}$

Note: 1. For a device surface mounted on 52mmx52mmx1.6mm FR 4 PCB of 2oz. copper, in still air condition.

2. For a device surface mounted on 25mmx25mmx1.6mm FR 4 PCB of 1oz. copper, in still air condition.

Characteristics (Ta=25°C, unless otherwise specified)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-180	-200	-	V	$I_C = -100\mu\text{A}$
BV_{CER}	-180	-200	-	V	$I_C = -1\mu\text{A}$, $R_{BE} \leq 1\text{k}\Omega$
$*BV_{CEO}$	-140	-160	-	V	$I_C = -10\text{mA}$
BV_{EBO}	-7	-8	-	V	$I_E = -100\mu\text{A}$
I_{CBO}	-	-	-20	nA	$V_{CB} = -150\text{V}$
I_{CER}	-	-	-20	nA	$V_{CE} = -150\text{V}$, $R_{BE} \leq 1\text{k}\Omega$
I_{EBO}	-	-	-10	nA	$V_{EB} = -6\text{V}$
$*V_{CE(sat)1}$	-	-39	-60	mV	$I_C = -100\text{mA}$, $I_B = -5\text{mA}$
$*V_{CE(sat)2}$	-	-52	-80	mV	$I_C = -500\text{mA}$, $I_B = -50\text{mA}$
$*V_{CE(sat)3}$	-	-84	-120	mV	$I_C = -1\text{A}$, $I_B = -100\text{mA}$
$*V_{CE(sat)4}$	-	-236	-360	mV	$I_C = -3\text{A}$, $I_B = -300\text{mA}$
$*R_{CE(sat)}$	-	79	120	$\text{m}\Omega$	$I_C = -3\text{A}$, $I_B = -300\text{mA}$
$*V_{BE(sat)}$	-	-965	-1040	mV	$I_C = -3\text{A}$, $I_B = -300\text{mA}$
$*V_{BE(on)}$	-	-853	-930	mV	$V_{CE} = -5\text{V}$, $I_C = -3\text{A}$
h_{FE1}	100	225	-	-	$V_{CE} = -5\text{V}$, $I_C = -10\text{mA}$
h_{FE2}	100	200	300	-	$V_{CE} = -5\text{V}$, $I_C = -1\text{A}$
$*h_{FE3}$	35	-	-	-	$V_{CE} = -5\text{V}$, $I_C = -3\text{A}$
$*h_{FE4}$	-	5	-	-	$V_{CE} = -5\text{V}$, $I_C = -10\text{A}$
f_T	-	120	-	MHz	$V_{CE} = -10\text{V}$, $I_C = -100\text{mA}$, $f = 50\text{MHz}$
Cob	-	31	-	pF	$V_{CB} = -10\text{V}$, $f = 1\text{MHz}$
ton		42		ns	$I_C = -1\text{A}$, $I_{B1} = -100\text{mA}$, $I_{B2} = 100\text{mA}$, $V_{CC} = -50\text{V}$
toff		636		ns	

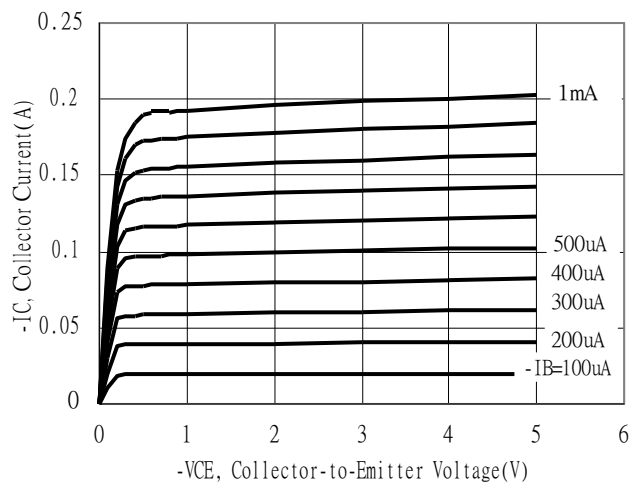
*Pulse Test: Pulse Width $\leq 380\mu\text{s}$, Duty Cycle $\leq 2\%$

Ordering Information

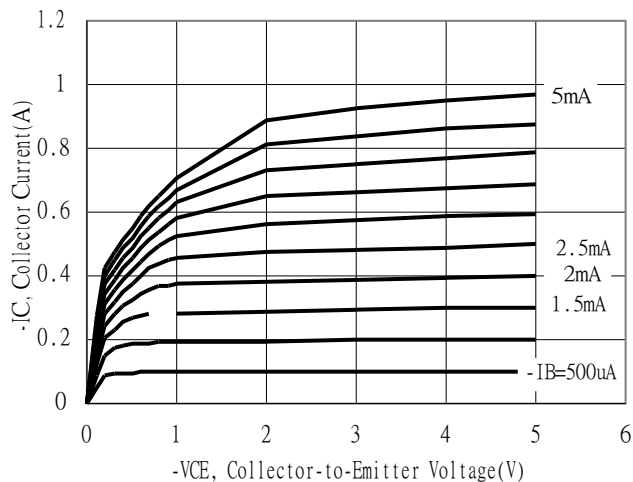
Device	Package	Shipping
KLP2014	SOT-223 (Pb-free lead plating and halogen-free package)	2500 pcs / Tape & Reel

Typical Characteristics

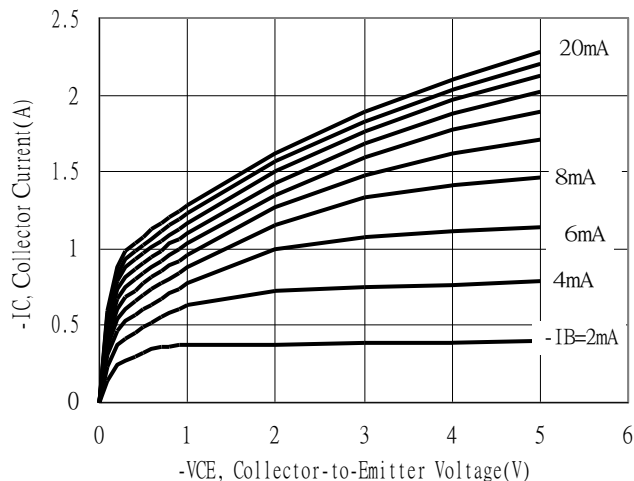
Emitter Grounded Output Characteristics



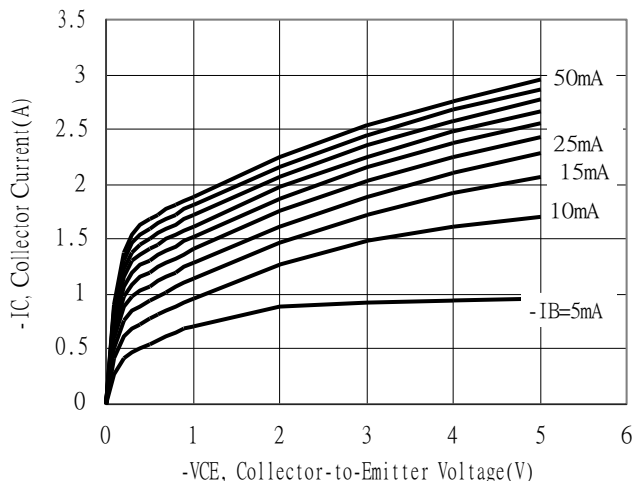
Emitter Grounded Output Characteristics



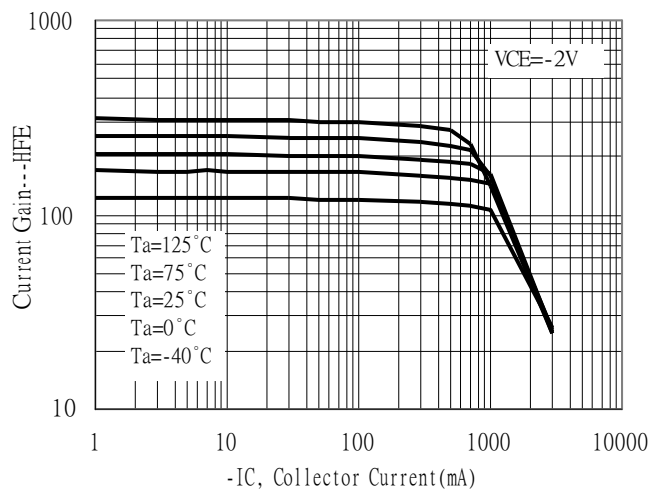
Emitter Grounded Output Characteristics



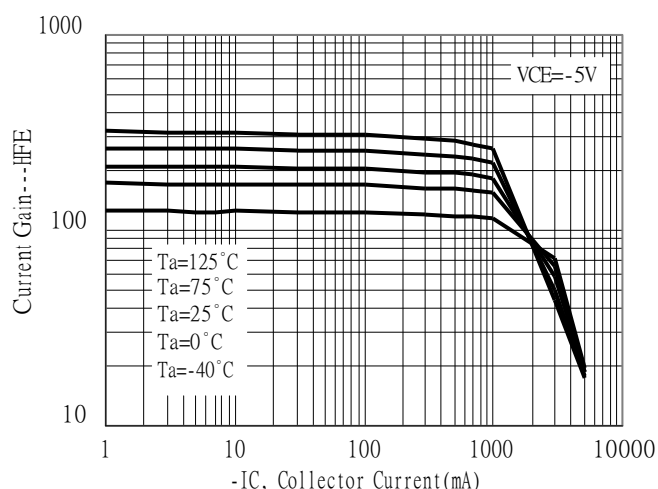
Emitter Grounded Output Characteristics



Current Gain vs Collector Current

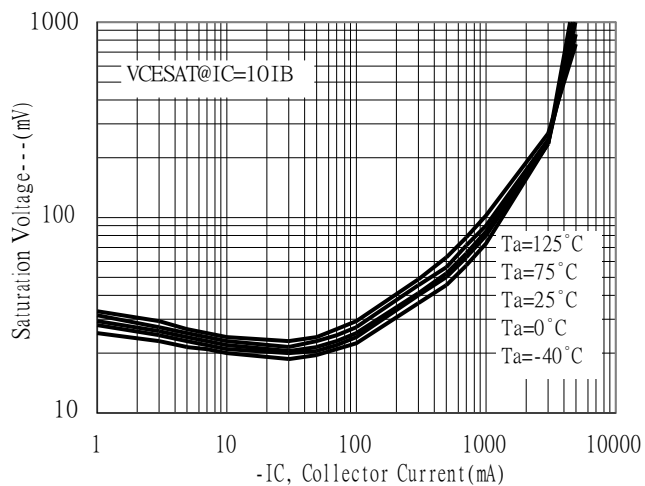


Current Gain vs Collector Current

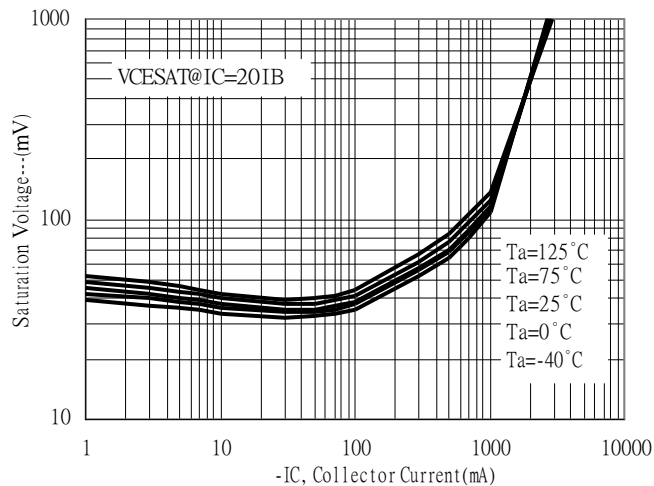


Typical Characteristics(Cont.)

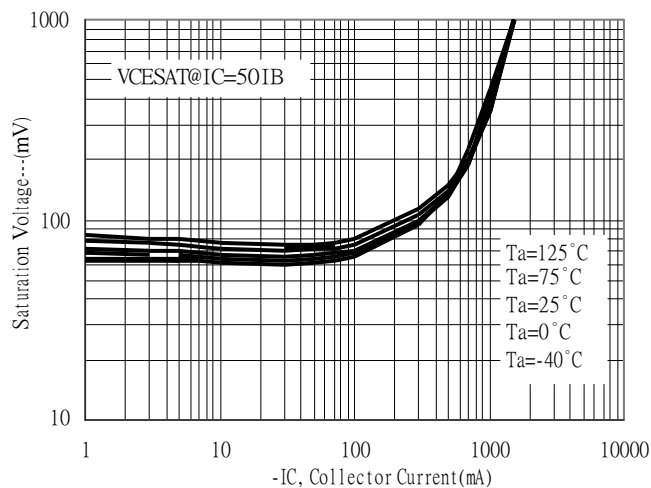
Saturation Voltage vs Collector Current



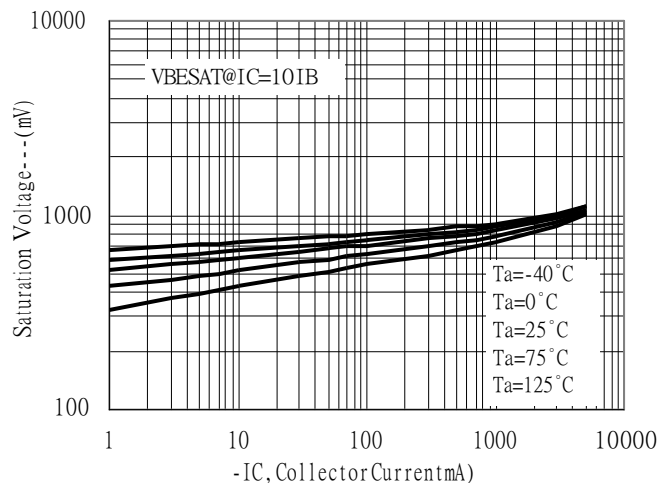
Saturation Voltage vs Collector Current



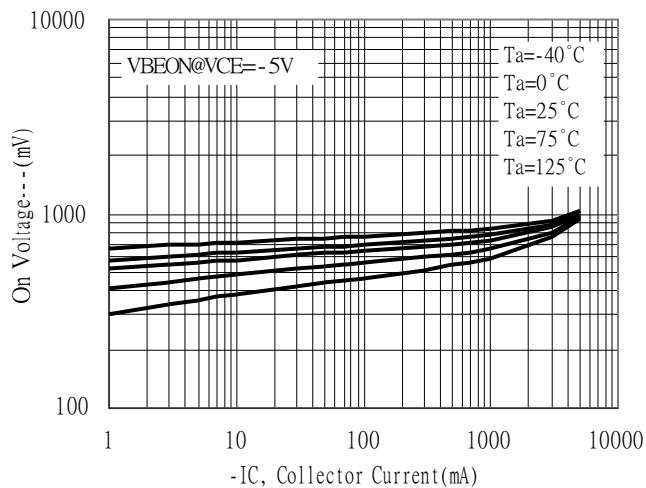
Saturation Voltage vs Collector Current



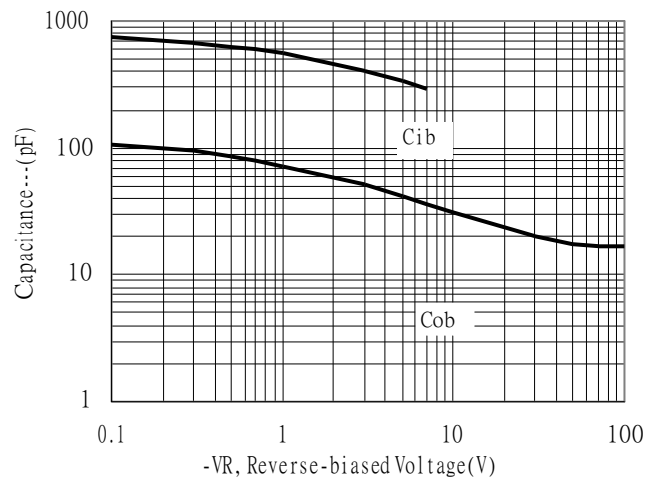
Saturation Voltage vs Collector Current



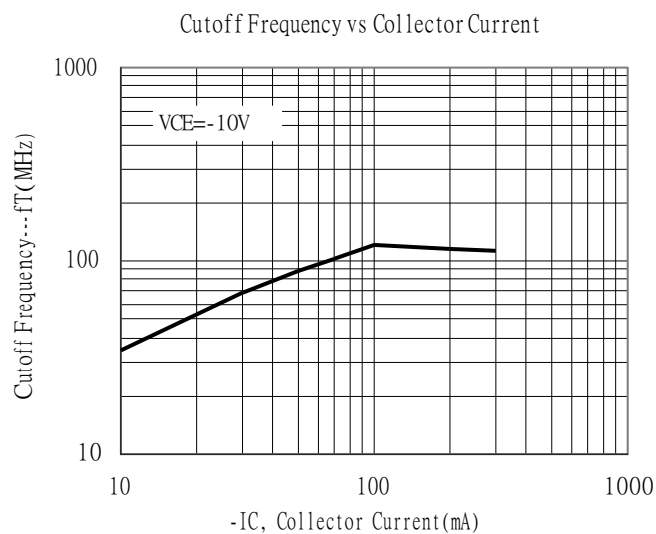
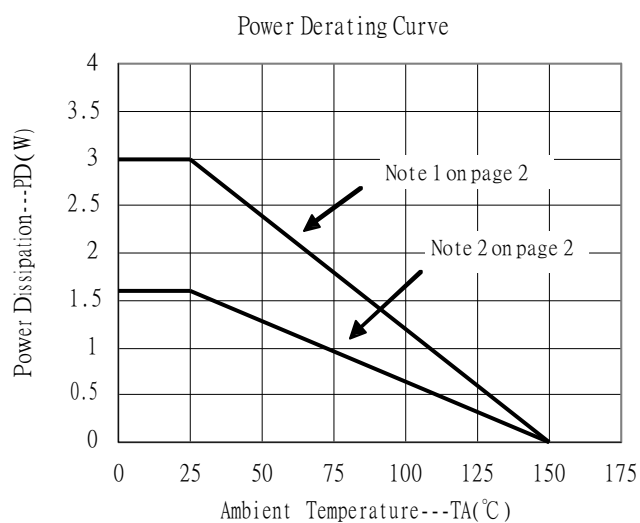
On Voltage vs Collector Current



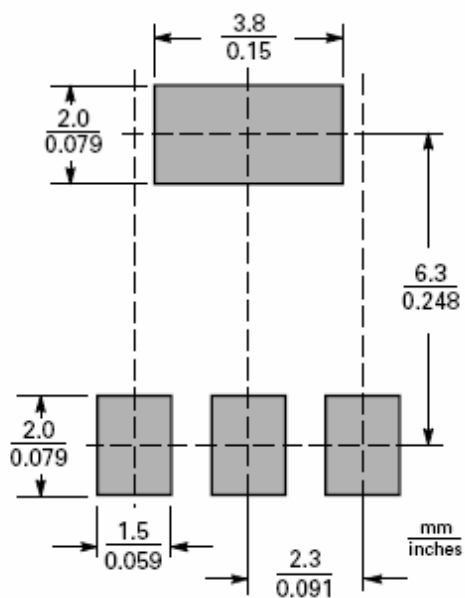
Capacitance vs Reverse-biased Voltage



Typical Characteristics(Cont.)

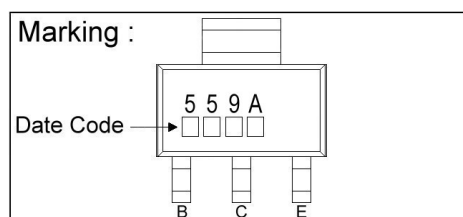
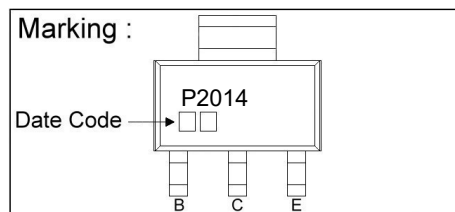
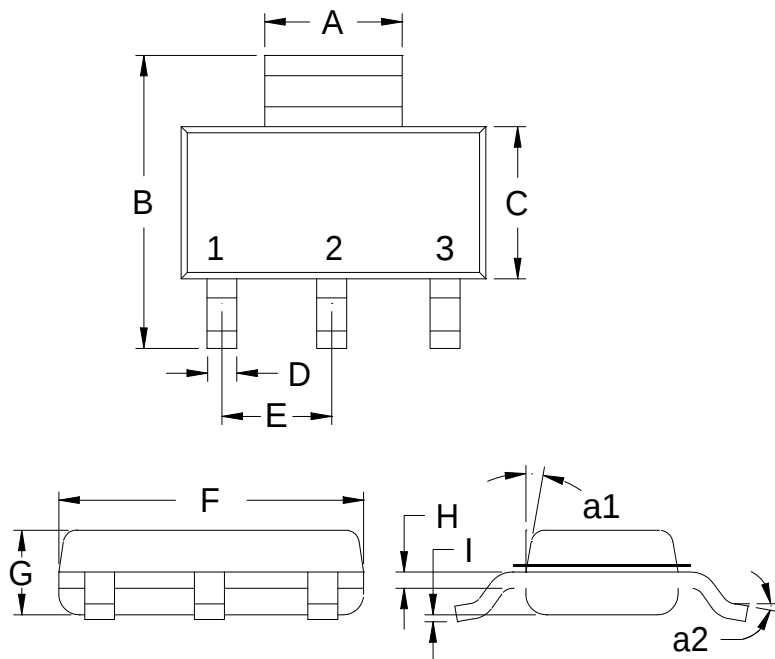


Recommended soldering footprint



SOT-223 Dimension

Marking: P2014 / 559A



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1142	0.1220	2.90	3.10	G	0.0551	0.0709	1.40	1.80
B	0.2638	0.2874	6.70	7.30	H	0.0098	0.0138	0.25	0.35
C	0.1299	0.1457	3.30	3.70	I	0.0008	0.0039	0.02	0.10
D	0.0236	0.0315	0.60	0.80	a1	*13°	-	*13°	-
E	*0.0906	-	*2.30	-	a2	0°	10°	0°	10°
F	0.2480	0.2638	6.30	6.70					