

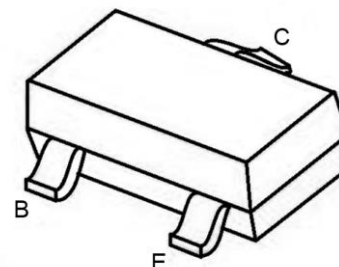
GPB2222 Transistor(NPN)

Feature

- Epitaxial Planar Die Construction

Marking: 1P

SOT-23



MAXIMUM RATINGS ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

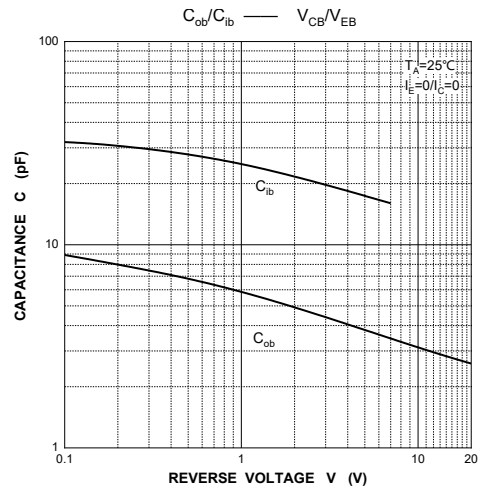
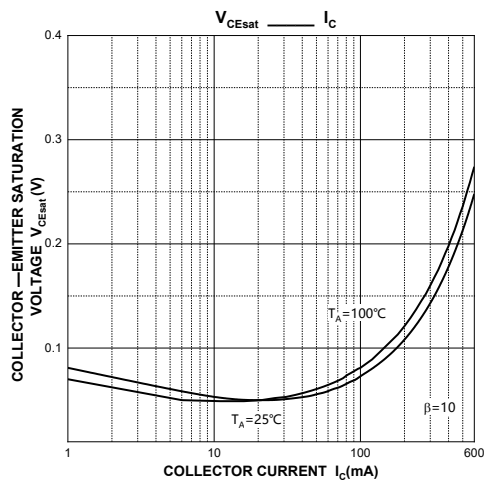
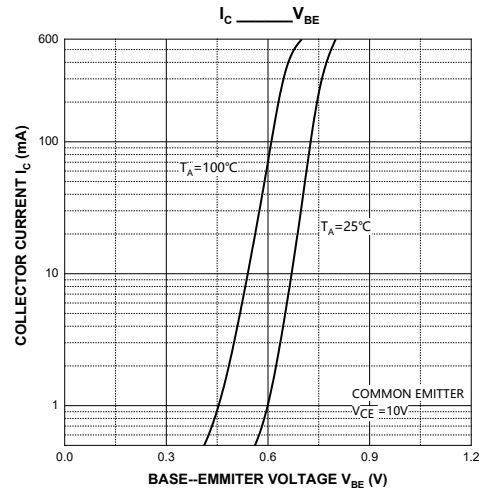
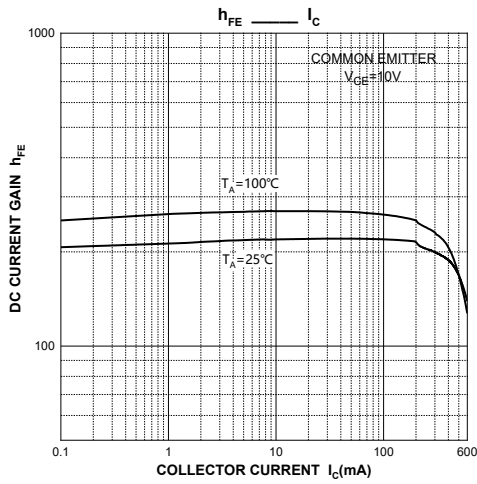
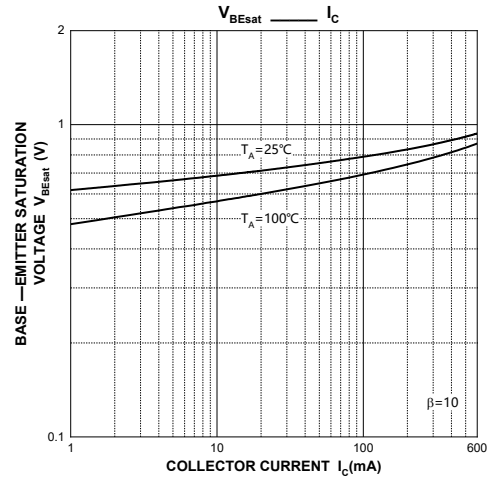
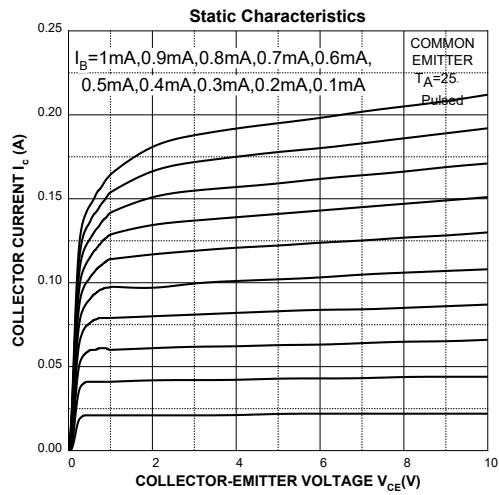
Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	75	V
Collector-Emitter Voltage	V_{CEO}	40	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current-Continuous	I_C	0.6	A
Power Dissipation	P_d	0.3	W
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Operating Temperature	T_{OP}	-40~125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}\text{C}$

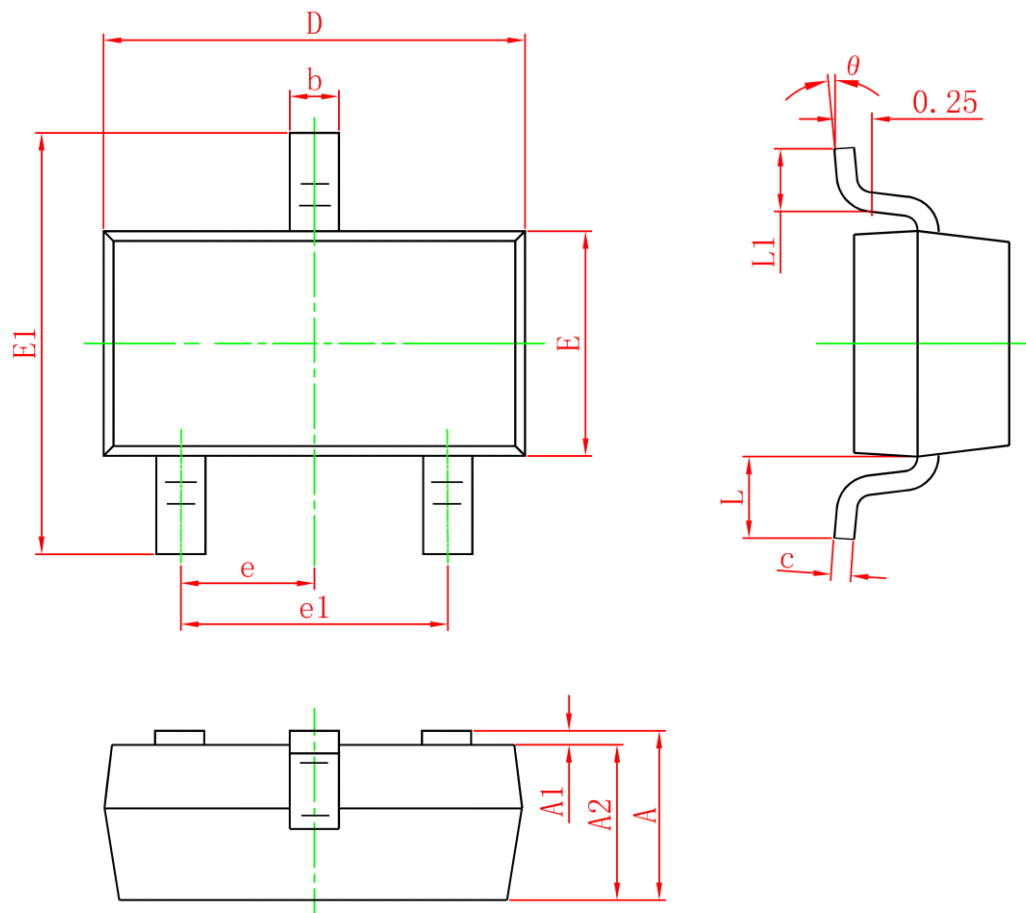
ELECTRICAL CHARACTERISTICS($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu\text{A}$, $I_E=0$	75		V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}^*$	$I_C=10\text{mA}$, $I_B=0$	40		V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=10\mu\text{A}$, $I_C=0$	6		V
Collector Cut-off Current	I_{CBO}	$V_{CB}=60\text{V}$, $I_E=0$		10	nA
Collector Cut-off Current	I_{CEX}	$V_{CE}=30\text{V}$, $V_{BE(off)}=3\text{V}$		10	nA
Base Cut-off Current	I_{EBO}	$V_{EB}=3\text{V}$, $I_C=0$		100	nA
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$, $I_C=150\text{mA}$	100	300	
		$V_{CE}=10\text{V}$, $I_C=0.1\text{mA}$	40		
		$V_{CE}=10\text{V}$, $I_C=500\text{mA}$	42		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=500\text{mA}$, $I_B=50\text{mA}$		1	V
		$I_C=150\text{mA}$, $I_B=15\text{mA}$		0.3	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500\text{mA}$, $I_B=50\text{mA}$		2.0	V
		$I_C=150\text{mA}$, $I_B=15\text{mA}$		1.2	V
Transition Frequency	f_T	$V_{CE}=20\text{V}$, $I_C=20\text{mA}$, $f=100\text{MHz}$	300		MHZ
Delay Time	t_d	$V_{CE}=30\text{V}$, $V_{BE(off)}=-0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$		10	ns
Rise Time	t_r			25	ns
Storage Time	t_s	$V_{CC}=30\text{V}$, $I_C=150\text{mA}$, $I_{B1}=-I_{B2}=15\text{mA}$		225	ns
Fall Time	t_f			60	ns

*pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2.0\%$.

Typical Characteristics



SOT-23 Package Information


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0	0.100	0	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.150	1.500	0.045	0.059
E1	2.250	2.650	0.089	0.104
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

Attention:

- GreenPower Electronics reserves the right to improve product design function and reliability without notice.
- Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
- GreenPower Electronics products belong to consumer electronics or other civilian electronic products.