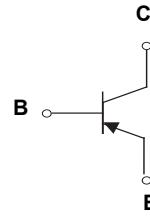
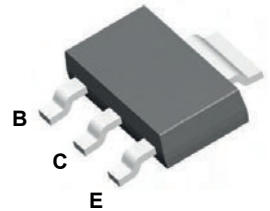


Features

- Low saturation voltage
- High speed switching



Schematic Diagram



SOT-223

Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Collector-Base Voltage	V_{CBO}	-100	V
Collector-Emitter Voltage	V_{CEO}	-60	V
Emitter-Base Voltage	V_{EBO}	-7	V
Collector Current	I_C	-6	A
Collector Power Dissipation ¹	P_C	2	W
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	62.5	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case ²	$R_{\theta JC}$	15	$^\circ\text{C/W}$
Operation Junction and Storage Temperature Range	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-0.1\text{mA}, I_E=0$	-100	-	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-10\text{mA}, I_B=0$	-60	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-0.1\text{mA}, I_C=0$	-7	-	-	V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-80\text{V}, I_E=0$	-	-	-20	nA
Collector Cut-Off Current	I_{CEO}	$V_{CE}=-48\text{V}, I_B=0$	-	-	-10	uA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=-6\text{V}, I_C=0$	-	-	-10	nA
DC Current Gain	h_{FE}	$V_{CE}=-1\text{V}, I_C=-10\text{mA}$	100	-	-	-
		$V_{CE}=-1\text{V}, I_C=-2\text{A}$	100	-	300	-
		$V_{CE}=-1\text{V}, I_C=-5\text{A}$	45	-	-	-
		$V_{CE}=-1\text{V}, I_C=-10\text{A}$	10	-	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=-100\text{mA}, I_B=-10\text{mA}$	-	-	-50	mV
		$I_C=-1\text{A}, I_B=-100\text{mA}$	-	-	-120	mV
		$I_C=-2\text{A}, I_B=-200\text{mA}$	-	-	-200	mV
		$I_C=-5\text{A}, I_B=-500\text{mA}$	-	-	-500	mV
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=-5\text{A}, I_B=-500\text{mA}$	-	-	-1.15	V
Base-Emitter On Voltage	$V_{BE(on)}$	$I_C=-5\text{A}, V_{CE}=-1\text{V}$	-	-	-1	V
Collector Output Capacitance	C_{ob}	$V_{CB}=-10\text{V}, f=1\text{MHz}$	-	65	-	pF
Transition Frequency	f_T	$V_{CE}=-10\text{V}, I_C=-0.1\text{A}, f=50\text{MHz}$	30	-	-	MHz

Notes:

1. Device mounted on 1 in² FR-4 board with 2oz.double-sided copper, in a still air environment with $T_A=25^\circ\text{C}$.
2. $T_C=25^\circ\text{C}$. Limited only by maximum temperature allowed.

Typical Electrical Characteristic Curves

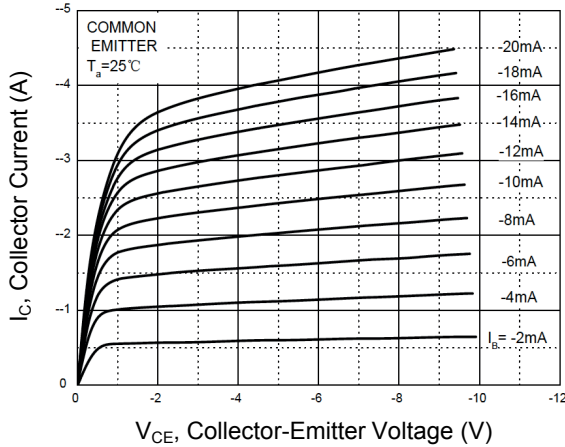


Figure 1. Static Characteristic

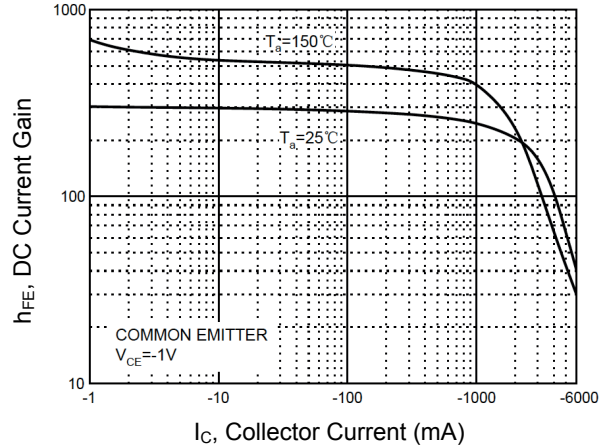


Figure 2. DC Current Gain vs. Collector Current

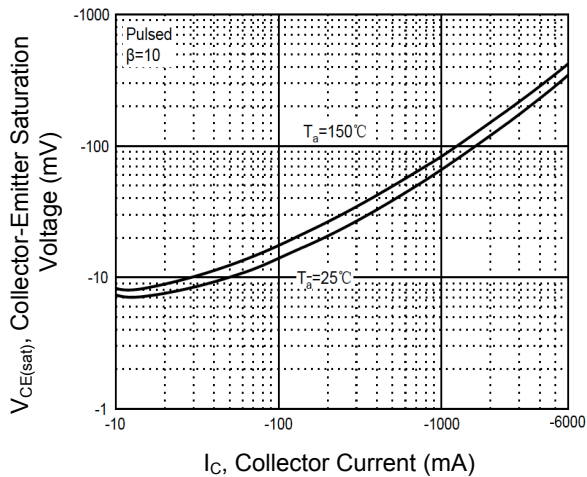


Figure 3. Collector-Emitter Saturation Voltage vs. Collector Current

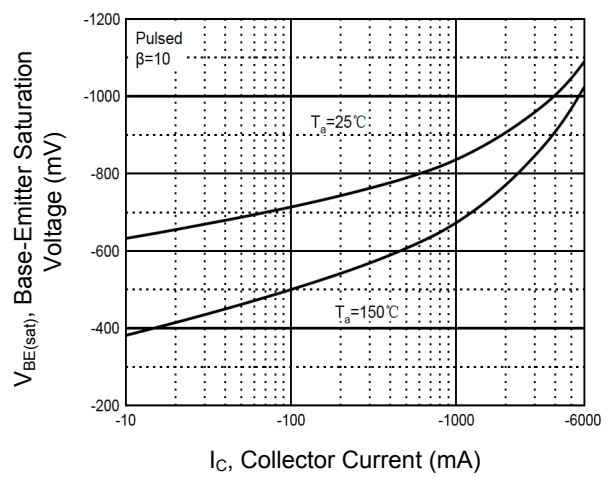


Figure 4. Base-Emitter Saturation Voltage vs. Collector Current

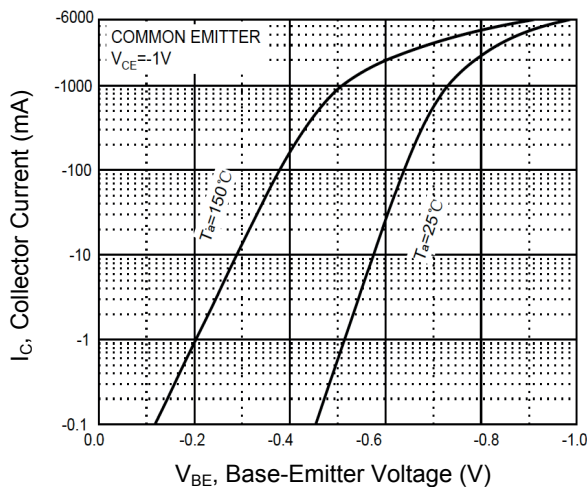


Figure 5. Collector Current vs. Base-Emitter Voltage

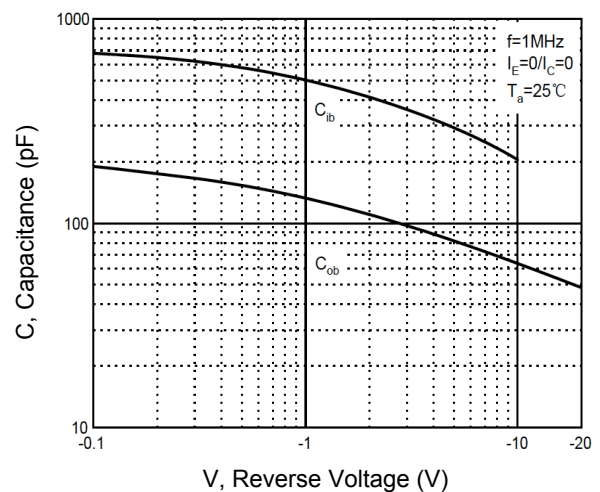


Figure 6. Capacitance Characteristics

Typical Electrical Characteristic Curves

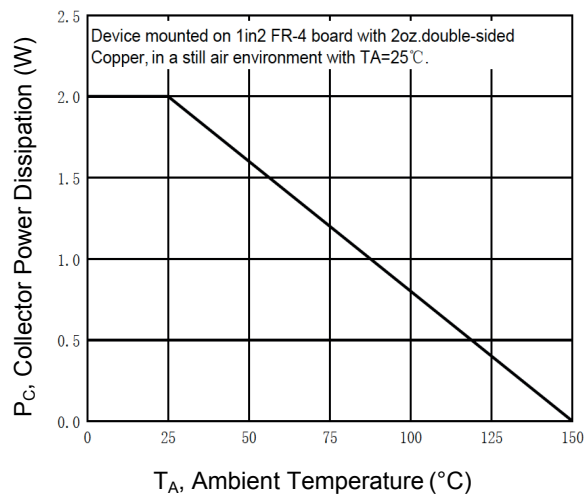
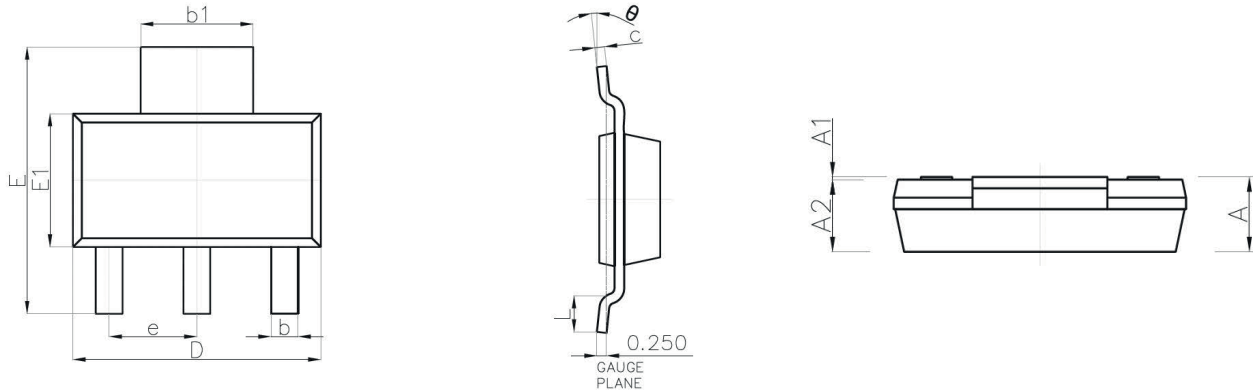


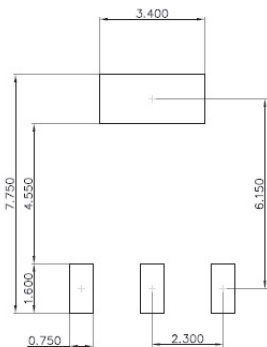
Figure 7. Power Dissipation vs. Ambient Temperature

Package Outline Dimensions (SOT-223)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	-	1.800	-	0.071
A1	0.020	0.100	0.001	0.004
A2	1.500	1.700	0.059	0.067
b	0.660	0.840	0.026	0.033
b1	2.900	3.100	0.114	0.122
c	0.230	0.350	0.009	0.014
D	6.300	6.700	0.248	0.264
E	6.700	7.300	0.264	0.287
E1	3.300	3.700	0.130	0.146
e	2.300 BSC		0.091 BSC	
L	0.750	-	0.030	-
θ	0°	10°	0°	10°

Recommended Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.

Order Information

Device	Package	Marking	Carrier	Quantity
GSZ606PL	SOT-223	606PL	Tape & Reel	2,500pcs / Reel

For more information, please contact us at: inquiry@goodarksemi.com