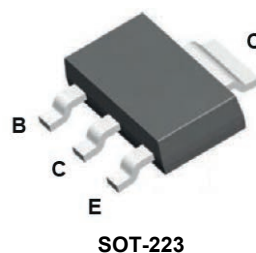


Features

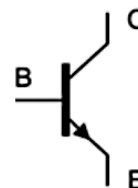
- Low saturation voltage
- Silicon epitaxial planar power transistor

Applications

- Telephone switching
- High voltage switch



SOT-223



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	500	V
Collector Emitter Voltage	V_{CEO}	400	V
Emitter Base Voltage	V_{EBO}	6	V
Collector Current	I_C	300	mA
Peak Collector Current, Pulsed ($t_p \leq 8.3\text{ms}$)	I_{CM}	600	mA
Power Dissipation	P_D	1.35	W
Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	92.6	$^\circ\text{C/W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150	$^\circ\text{C}$

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with 1-inch square copper plate.

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=100\mu\text{A}$	500	-	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=1\text{mA}$	400	-	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=100\mu\text{A}$	6	-	-	V
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=400\text{V}$	-	-	100	nA
Emitter Base Cutoff Current	I_{EBO}	$V_{EB}=4\text{V}$	-	-	100	nA
Collector Emitter Cutoff Current	I_{CES}	$V_{CE}=400\text{V}$	-	-	500	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=10\text{V}, I_C=1\text{mA}$	40	-	-	-
	$h_{FE(2)}$	$V_{CE}=10\text{V}, I_C=10\text{mA}$	50	-	200	-
	$h_{FE(3)}$	$V_{CE}=10\text{V}, I_C=50\text{mA}$	45	-	-	-
	$h_{FE(4)}$	$V_{CE}=10\text{V}, I_C=100\text{mA}$	40	-	-	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=1\text{mA}, I_B=0.1\text{mA}$	-	-	400	mV
		$I_C=10\text{mA}, I_B=1\text{mA}$	-	-	500	
		$I_C=50\text{mA}, I_B=5\text{mA}$	-	-	750	
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=10\text{mA}, I_B=1\text{mA}$	-	-	0.75	V
Transition Frequency	f_T	$V_{CE}=20\text{V}, I_C=10\text{mA}, f=100\text{MHz}$	-	47	-	MHz
Output Capacitance	C_{ob}	$V_{CB}=20\text{V}, f=1\text{MHz}$	-	-	7	pF

Electrical Characteristic Curves

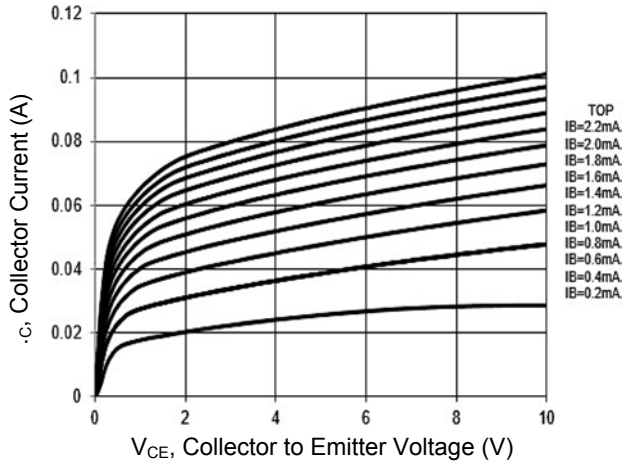


Figure 1. Output Characteristics Curve

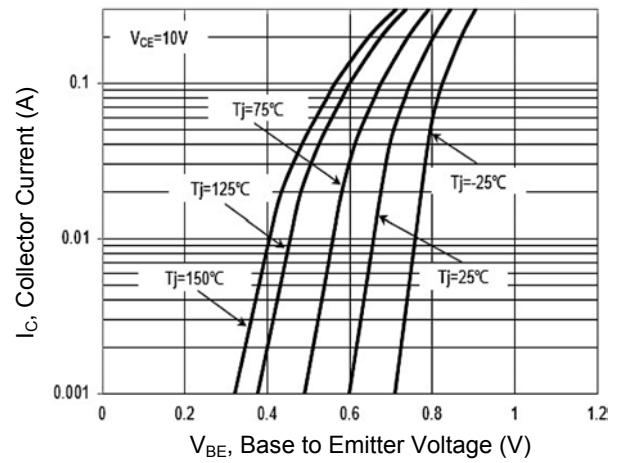


Figure 2. Collector Current vs. Base to Emitter Voltage

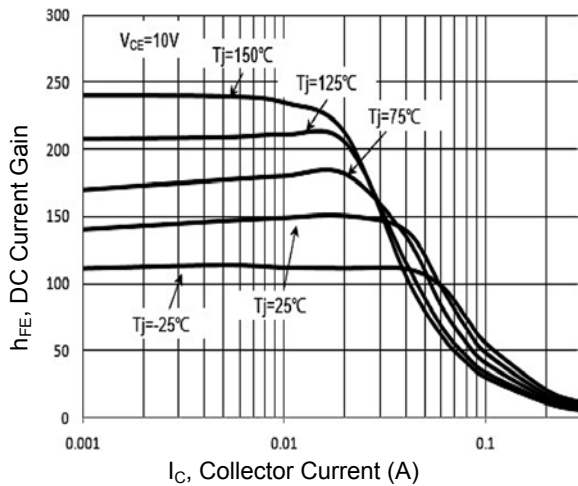


Figure 3. DC Current Gain vs. Collector Current

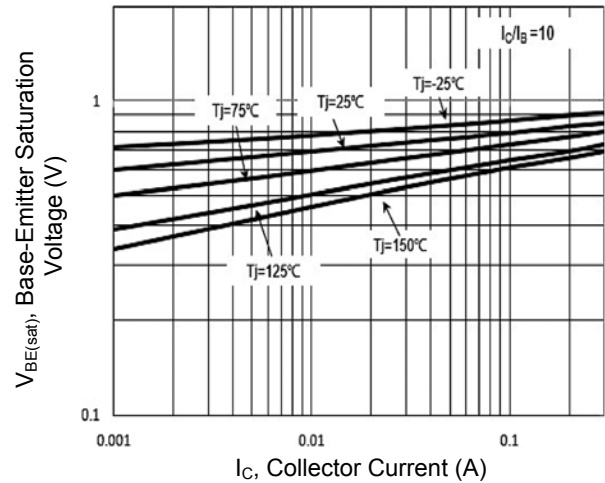


Figure 4. $V_{BE(sat)}$ vs. Collector Current

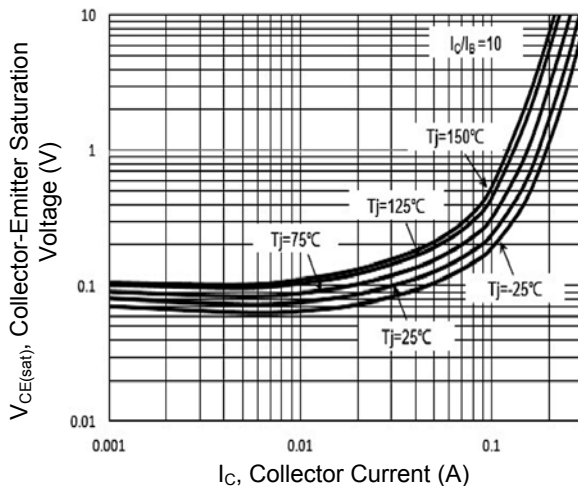


Figure 5. $V_{CE(sat)}$ vs. Collector Current

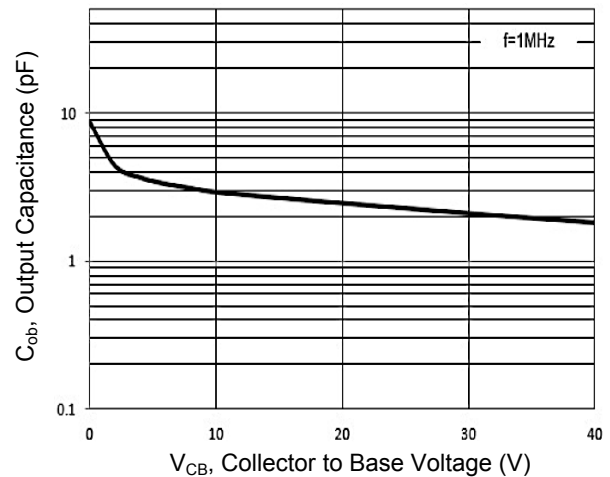


Figure 6. Output Capacitance

Electrical Characteristic Curves

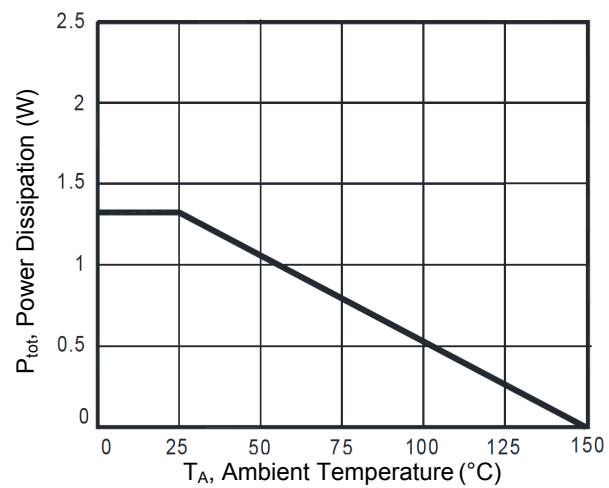
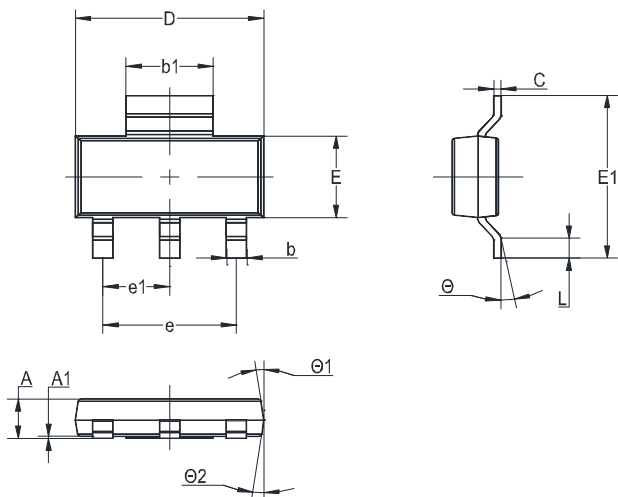


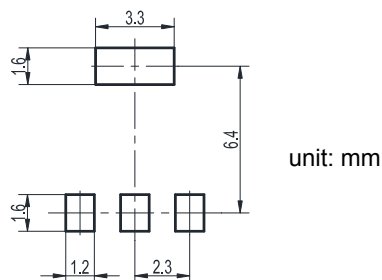
Figure 7. Power Derating Curve

Package Outline Dimensions (SOT-223)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.50	1.80	0.059	0.071
A1	0.10 MAX		0.004 MAX	
b	0.60	0.80	0.024	0.031
b1	2.90	3.10	0.114	0.122
C	0.22	0.32	0.009	0.013
D	6.30	6.70	0.248	0.264
E	3.30	3.70	0.130	0.146
E1	6.70	7.30	0.264	0.287
e	4.60 TYP		0.181 TYP	
e1	2.30 TYP		0.091 TYP	
L	0.70	1.10	0.028	0.043
θ	0°	10°	0°	10°
θ1	0°	7°	0°	7°
θ2	0°	7°	0°	7°

Recommended Pad Layout



Ordering Information

Device	Package	Marking	Carrier	Quantity
GSPZTA44	SOT-223	PZTA44Q	Tape & Reel	3,000 Pcs / Reel

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