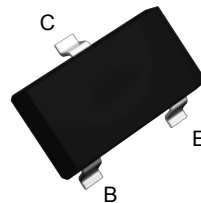


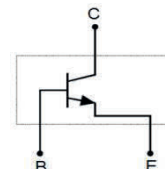
GSMMBT2222AW NPN Transistor

Features

- Epoxy meets UL 94V-0 flammability rating
- Small outline surface mount package



SOT-323



Schematic Diagram

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

Parameter	Symbol	Value	Units
Collector-Base Voltage	V _{CBO}	75	V
Collector-Emitter Voltage	V _{CEO}	40	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current	I _C	600	mA
Collector Power Dissipation	P _C	200	mW
Thermal Resistance from Junction to Ambient	R _{θJA}	625	°C/W
Junction Temperature	T _J	150	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
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}	$V_{CB}=70\text{V}$, $I_E=0$	-	-	100	nA
Collector Cut-Off Current	I_{CEO}	$V_{CE}=35\text{V}$, $I_B=0$	-	-	100	nA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=3\text{V}$, $I_B=0$	-	-	100	nA
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}$, $I_C=100\mu\text{A}$	35	-	-	-
		$V_{CE}=10\text{V}$, $I_C=1\text{mA}$	50	-	-	
		$V_{CE}=10\text{V}$, $I_C=10\text{mA}$	75	-	-	
		$V_{CE}=10\text{V}$, $I_C=150\text{mA}$	100	-	300	
		$V_{CE}=10\text{V}$, $I_C=500\text{mA}$	40	-	-	
		$V_{CE}=1\text{V}$, $I_C=150\text{mA}$	35	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=150\text{mA}$, $I_B=15\text{mA}$	-	-	0.3	V
		$I_C=500\text{mA}$, $I_B=50\text{mA}$	-	-	1	
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=150\text{mA}$, $I_B=15\text{mA}$	-	-	1.2	V
		$I_C=500\text{mA}$, $I_B=50\text{mA}$	-	-	2.0	
Transition Frequency	f_T	$V_{CE}=20\text{V}$, $I_C=20\text{mA}$, $f=100\text{MHz}$	300	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1\text{MHz}$	-	-	8	pF
Delay Time	t_d	$V_{CC}=30\text{V}$, $V_{BE(off)}=0.5\text{V}$, $I_C=150\text{mA}$, $I_{B1}=15\text{mA}$	-	-	10	nS
Delay 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

Typical Characteristic Curves

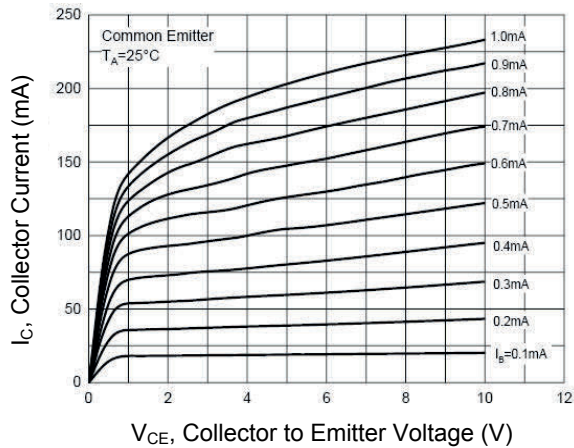


Figure 1. Static Characteristics

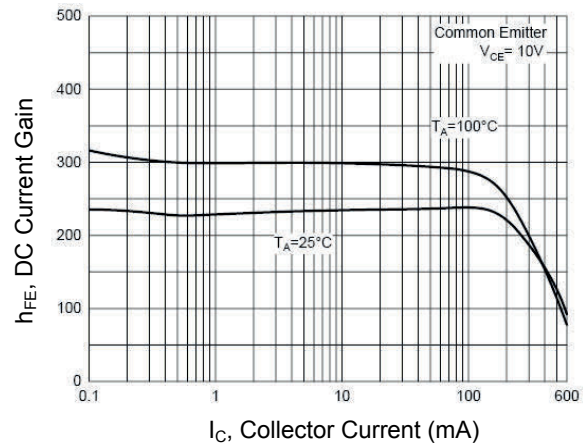


Figure 2. DC Current Gain Characteristics

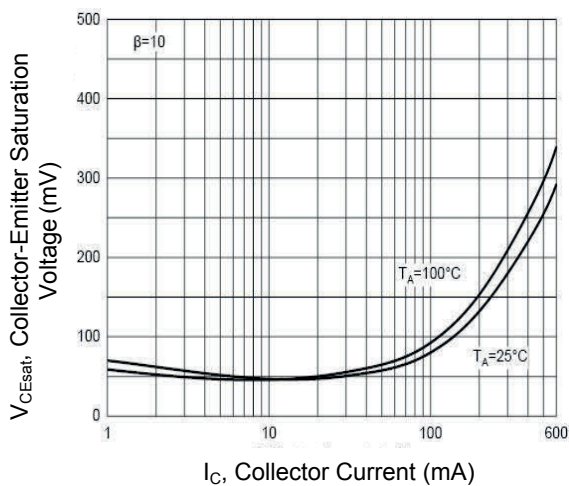


Figure 3. Collector-Emitter Saturation Voltage Characteristics

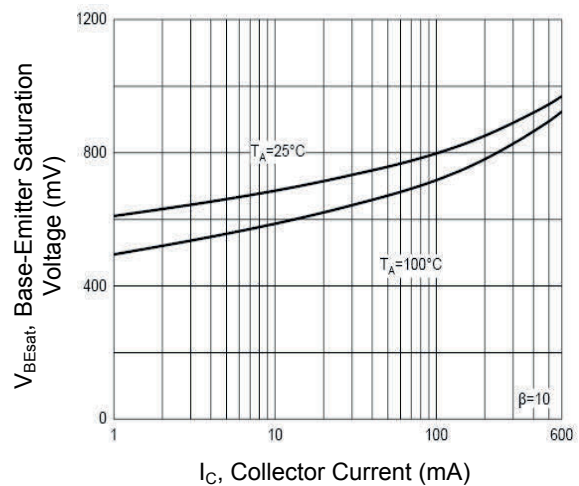


Figure 4. Base-Emitter Saturation Voltage Characteristics

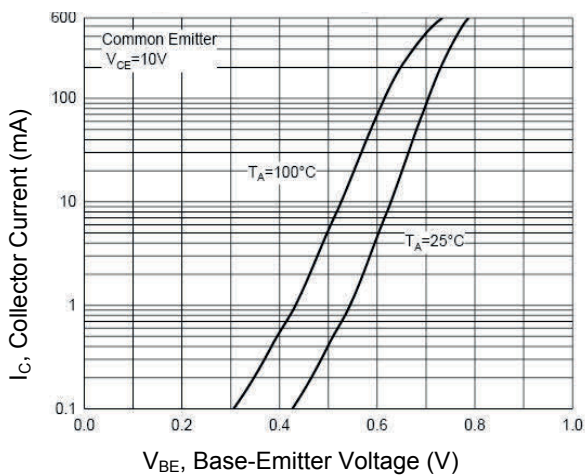


Figure 5. Base-Emitter Voltage Characteristics

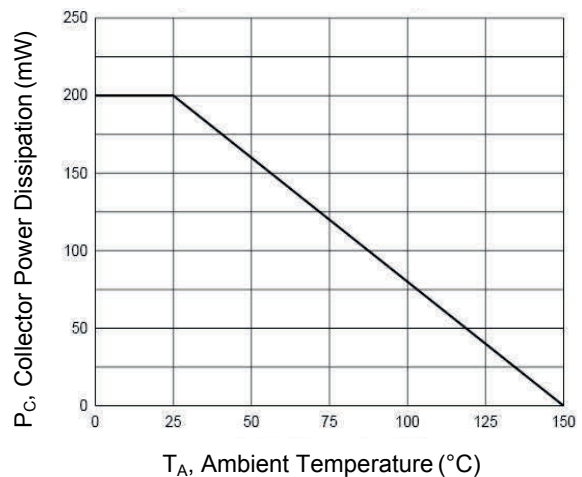
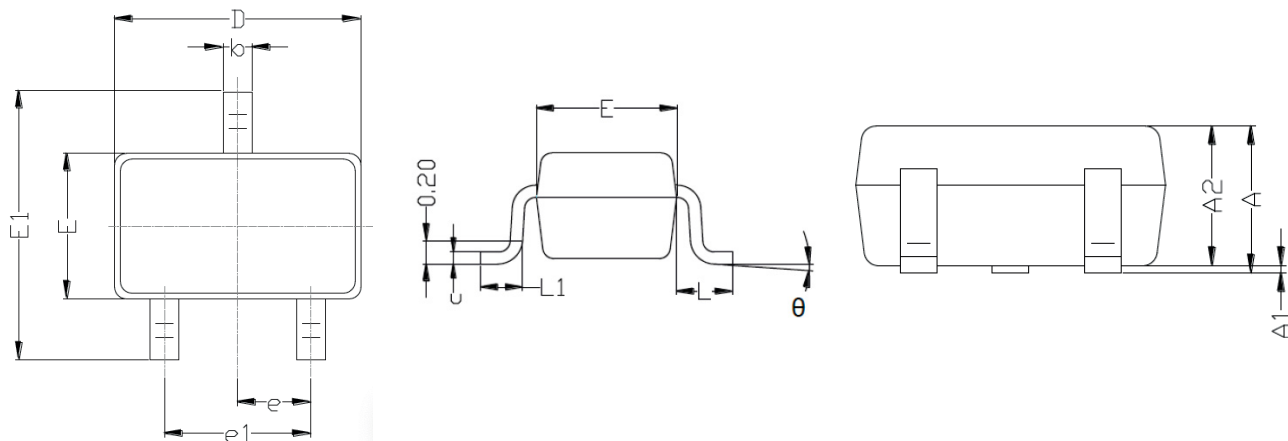


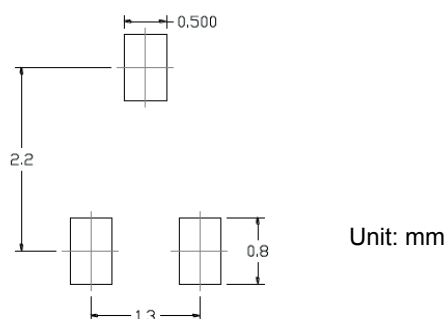
Figure 6. Collector Power Derating Curve

Package Outline Dimensions (SOT-323)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.00	0.035	0.039
A1	0.00	0.10	0.000	0.004
A2	0.90	1.00	0.035	0.039
b	0.20	0.40	0.008	0.016
c	0.08	0.15	0.003	0.006
D	2.00	2.20	0.079	0.087
E	1.15	1.35	0.045	0.053
E1	2.15	2.40	0.085	0.094
e	0.650 TYP		0.026 TYP	
e1	1.20	1.40	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.26	0.45	0.010	0.018
θ	0°	8°	0°	8°

Recommended Pad Layout



Order Information

Device	Package	Marking	Carrier	Quantity
GSMMBT2222AW	SOT-323	K3P	Tape & Reel	3,000 pcs / Reel

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