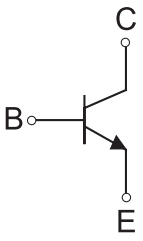
GOOD-ARK
SEMICONDUCTOR

GSMPSA06
NPN Transistor

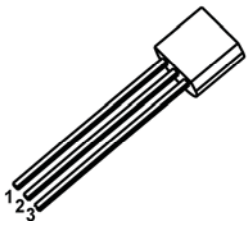
Features

- Power amplifier



Schematic Diagram

1. Emitter
2. Base
3. Collector



TO-92

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

Parameter	Symbol	Max.	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current-Continuous	I_C	0.5	A
Collector Power Dissipation	P_D	625	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	200	°C/W
Operation Junction Temperature Range	T_J	-55 To +150	°C
Storage Temperature Range	T_{STG}	-55 To +150	°C

Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Max.	Unit
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=0.1mA, I_E=0	80	-	V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	80	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=100μA, I_C=0	4	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB}=80V, I_E=0	-	0.1	μA
	I_{CEO}	V_{CE}=60V, I_B=0	-	0.1	μA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=3V, I_C=0	-	0.1	μA
DC Current Gain	h_{FE1}	V_{CE}=1V, I_C=100mA	100	400	-
	h_{FE2}	V_{CE}=1V, I_C=10mA	100	-	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA	-	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA	-	1.2	V
Transition Frequency	f_T	V_{CE}=2V, I_C=10mA, f=100MHz	100	-	MHz

Typical Characteristic Curves

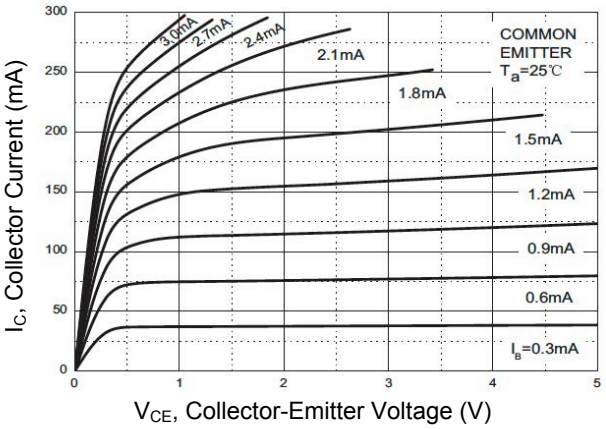


Figure 1. Static Characteristic

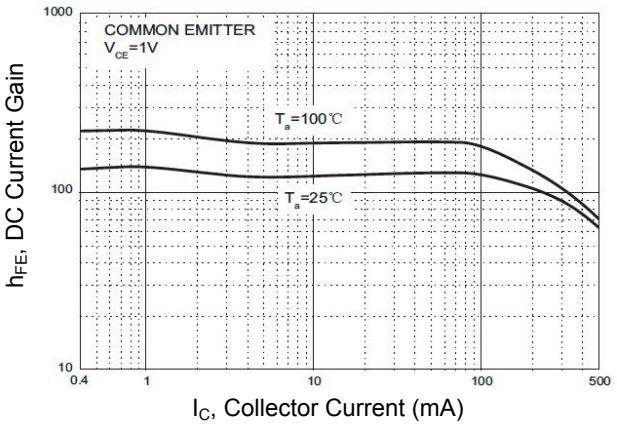


Figure 2. DC Current Gain vs. Collector Current

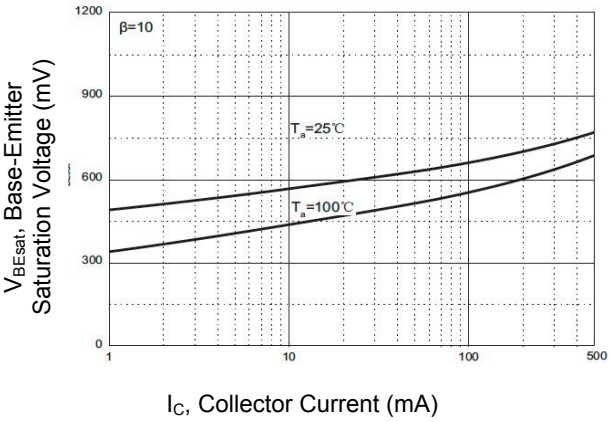


Figure 3. Base Emitter Saturation Voltage vs. I_C

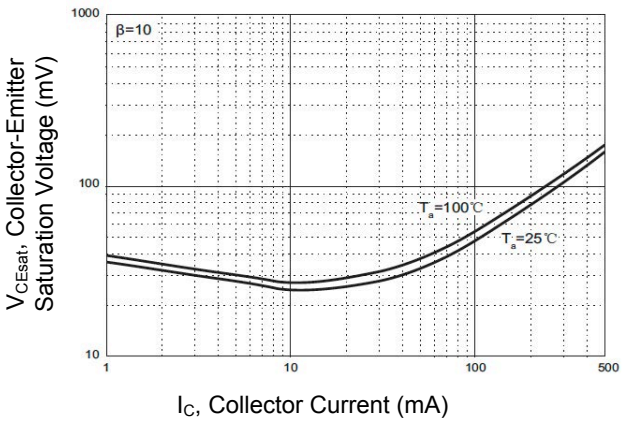


Figure 4. Collector Emitter Saturation Voltage vs. I_C

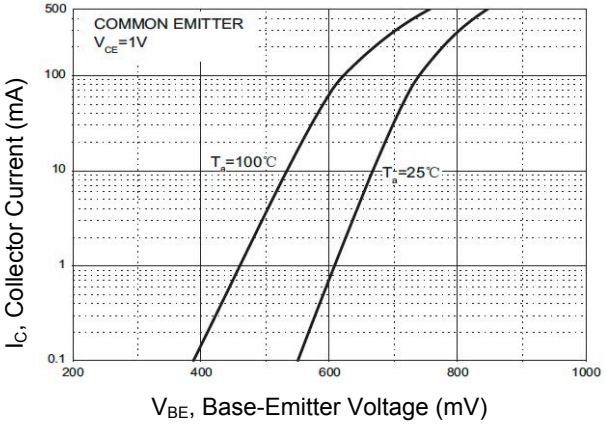


Figure 5. I_C vs. Base Emitter Voltage

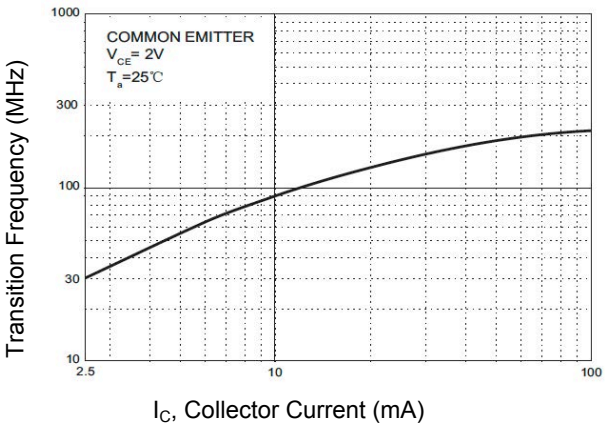


Figure 6. Transition Frequency vs. I_C

Typical Characteristic Curves

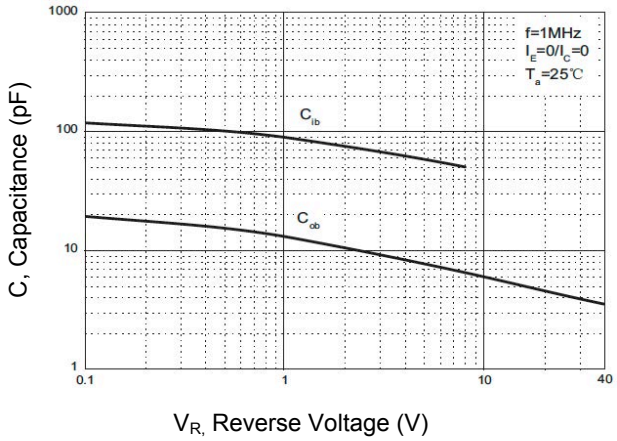


Figure 7. Capacitance Characteristics

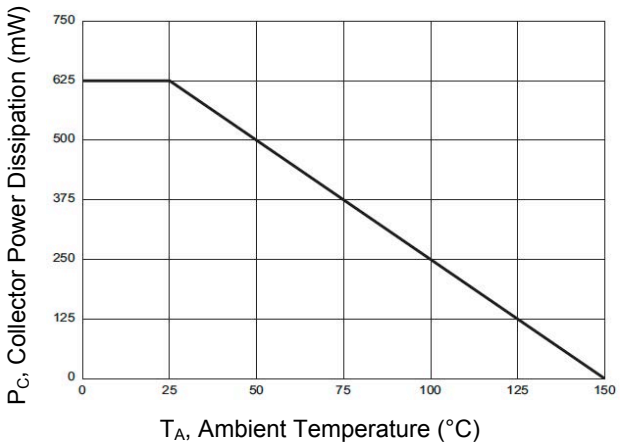
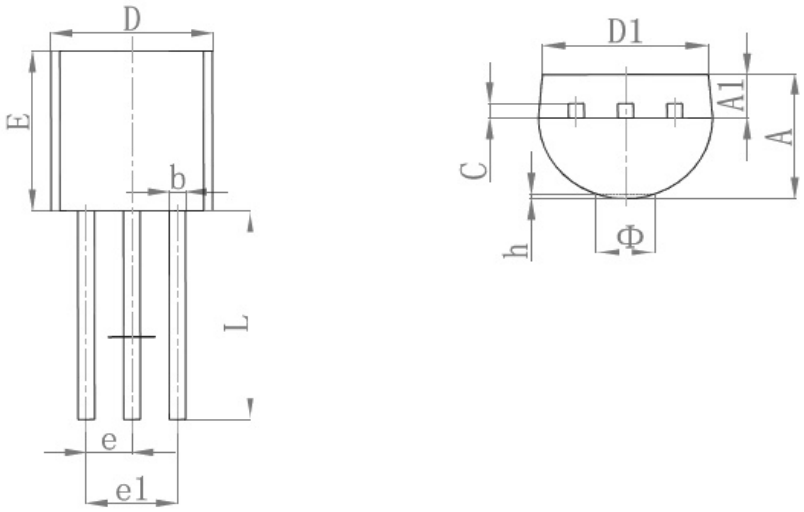


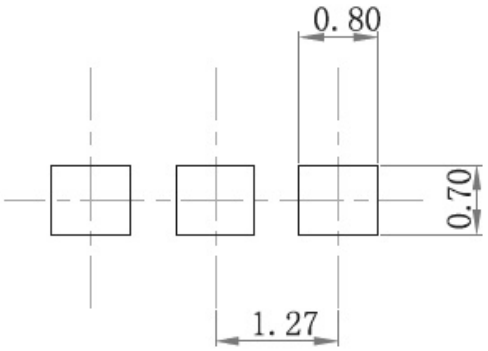
Figure 8. Power Derating

Package Outline Dimensions (TO-92)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.300	4.700	0.169	0.185
D1	3.430	-	0.135	-
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ	-	1.600	-	0.063
h	0.000	0.380	0.000	0.015

Recommended Pad Layout



Note:
1. Controlling dimension: in millimeters.
2. General tolerance: ±0.05mm.
3. The pad layout is for reference purposes only.

Order Information

Device	Package	Packing Method	Quantity
GSMPSA06	TO-92	Tape	2,000 pcs / Box