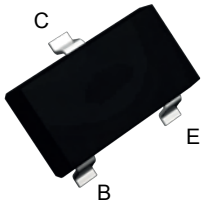
GOOD-ARK SEMICONDUCTOR

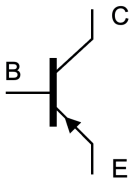
GSMMBT6520
PNP Transistor

Features

- Epitaxial planar die construction
- Ideal for low power amplification and switching
- High current gain



SOT-23



Schematic Diagram

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	-350	V
Collector Emitter Voltage	V_{CEO}	-350	V
Emitter Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-0.5	A
Total Power Dissipation[1]	P_{tot}	0.35	W
Max. Thermal Resistance from Junction to Ambient[1]	$R_{\theta JA}$	357	°C/W
Junction Temperature	T_J	150	°C
Storage Temperature Range	T_{STG}	-55 to +150	°C

Note:

1. Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.

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

Parameter	Symbol	Test Conditions	Min.	Max.	Unit
Collector Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=-100μA	-350	-	V
Collector Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-1mA	-350	-	V
Emitter Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=-10μA	-5	-	V
Collector Base Cutoff Current	I_{CBO}	V_{CB}=-250V	-	-50	nA
Emitter Base Cutoff Current	I_{EBO}	V_{EB}=-4V	-	-50	nA
DC Current Gain	h_{FE}	V_{CE}=-10V, I_C=-1mA	20	-	-
		V_{CE}=-10V, I_C=-10mA	30	-	-
		V_{CE}=-10V, I_C=-30mA	30	200	-
		V_{CE}=-10V, I_C=-50mA	20	200	-
		V_{CE}=-10V, I_C=-100mA	15	-	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-1mA	-	-0.3	V
		I_C=-20mA, I_B=-2mA	-	-0.35	
		I_C=-30mA, I_B=-3 mA	-	-0.5	
		I_C=-50mA, I_B=-5mA	-	-1	
Base Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=-10mA, I_B=-1 mA	-	-0.75	V
		I_C=-20mA, I_B=-2mA	-	-0.85	
		I_C=-30mA, I_B=-3mA	-	-0.9	
Base Emitter On Voltage	$V_{BE(on)}$	V_{CE}=-10V, I_C=-100mA	-	-2	V
Transition Frequency	f_T	V_{CE}=-20V, I_C=-10mA, f=20MHz	40	200	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-20V, f=1MHz	-	6	pF

Electrical Characteristic Curves

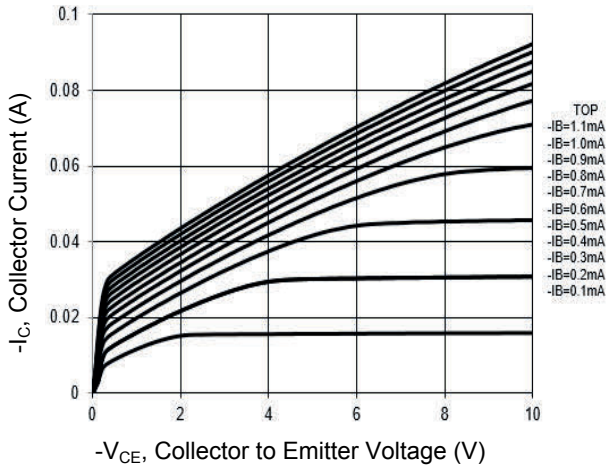


Figure 1. Output Characteristics Curve

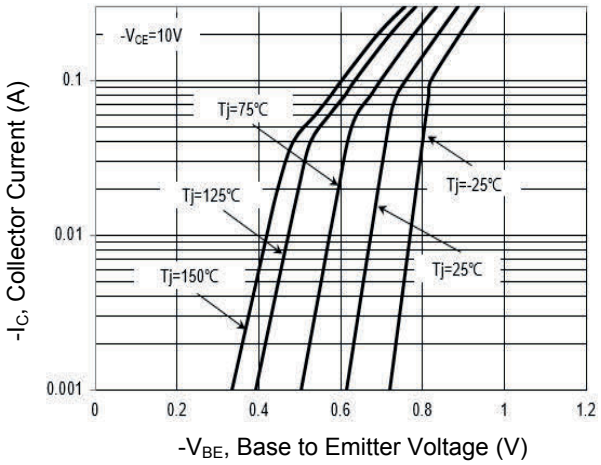


Figure 2. Collector Current vs. Base to Emitter Voltage

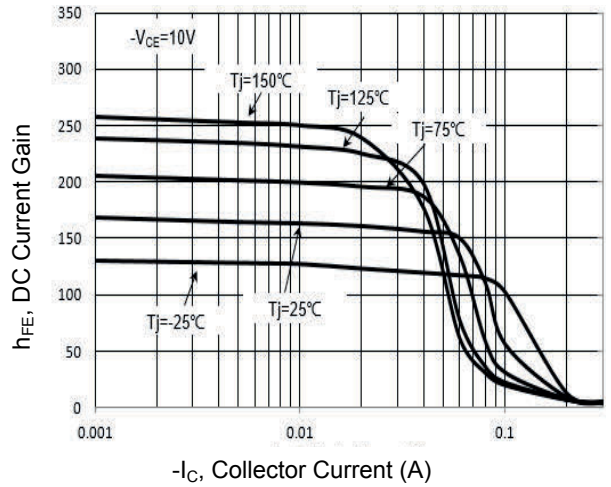


Figure 3. DC Current Gain vs. Collector Current

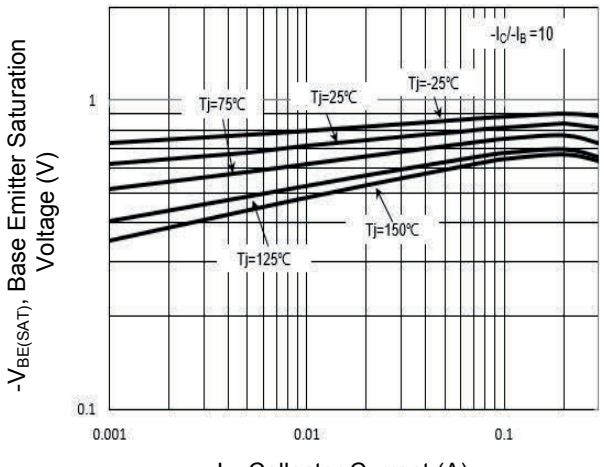


Figure 4. Base Emitter Saturation Voltage vs. Collector Current

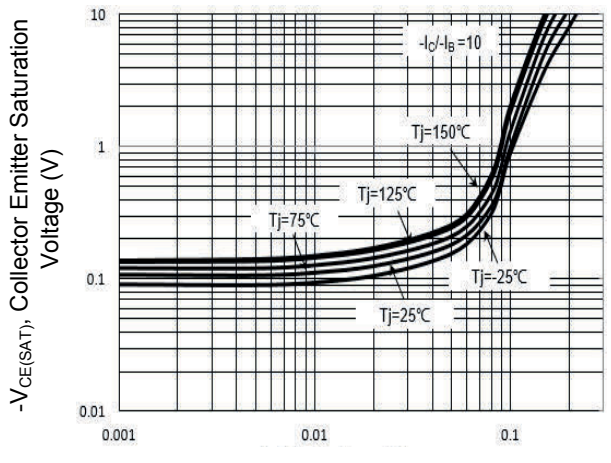


Figure 5. Collector Emitter Saturation Voltage vs. Collector Current

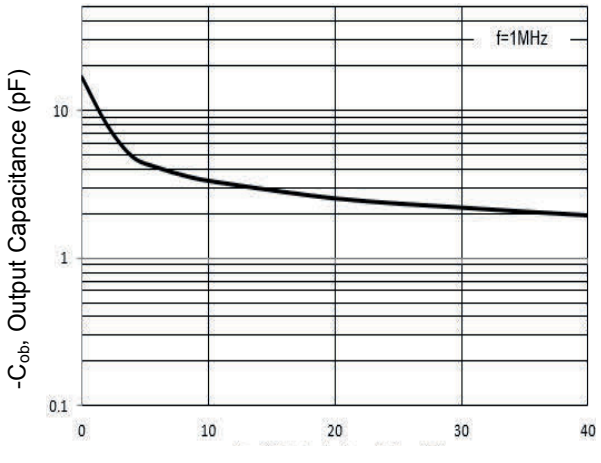


Figure 6. Output Capacitance

Electrical Characteristic Curves

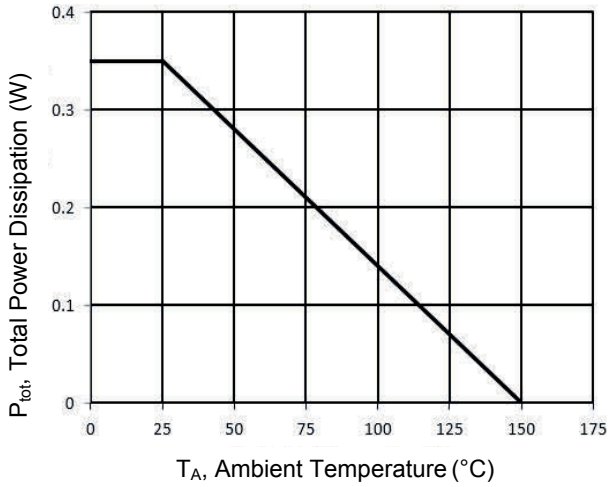
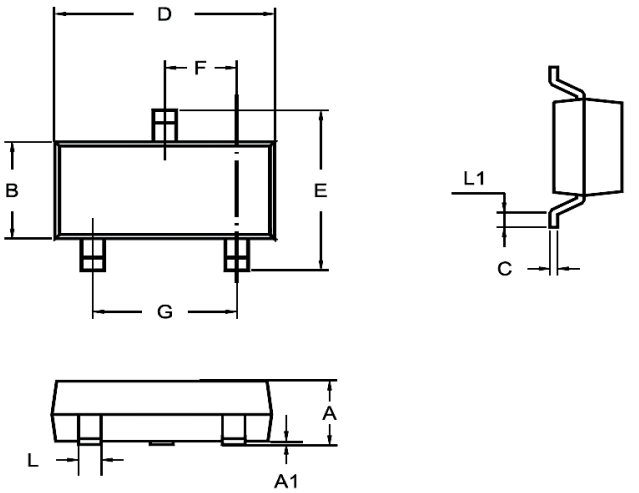


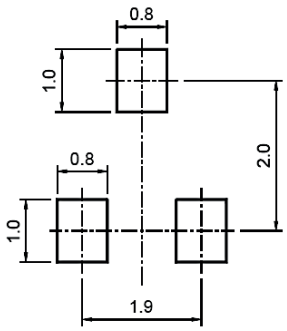
Figure 7. Power Derating Curve

Package Outline Dimensions (SOT-23)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.890	1.200	0.035	0.047
A1	0.013	0.100	0.001	0.004
B	1.200	1.400	0.047	0.055
C	0.080	0.190	0.003	0.007
D	2.800	3.040	0.110	0.120
E	2.200	2.600	0.087	0.102
F	0.890	1.020	0.035	0.040
G	1.780	2.040	0.070	0.080
L	0.370	0.510	0.015	0.020
L1	0.200	-	0.008	-

Recommended Pad Layout



unit: mm

Order Information

Device	Package	Marking	Packaging	SPQ
GSMMBT6520	SOT-23	TY1	Tape & Reel	3,000 Pcs / Reel