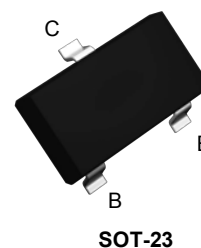


GSMMBT6427 NPN Transistor

Features

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



SOT-23

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

Parameter	Symbol	Value	Unit
Collector Base Voltage	V_{CBO}	40	V
Collector Emitter Voltage	V_{CEO}	40	V
Emitter Base Voltage	V_{EBO}	12	V
Collector Current	I_C	0.5	A
Peak Collector Current, Pulsed ($t_p=8.3\text{ms}$)	I_{CM}	1	A
Total Power Dissipation	P_{tot}	0.3	W
Max. Thermal Resistance from Junction to Ambient ¹	$R_{\theta JA}$	417	$^{\circ}\text{C/W}$
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 minimum recommended pad layout.

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Collector Base Breakdown Voltage	$V_{BR(CBO)}$	$I_C=100\mu\text{A}$	40	-	-	V
Collector Emitter Breakdown Voltage	$V_{BR(CEO)}$	$I_C=10\text{mA}$	40	-	-	V
Emitter Base Breakdown Voltage	$V_{BR(EBO)}$	$I_E=10\mu\text{A}$	12	-	-	V
Collector Base Cutoff Current	I_{CBO}	$V_{CB}=30\text{V}$	-	-	50	nA
Collector Emitter Cutoff Current	I_{CEO}	$V_{CE}=25\text{V}$	-	-	1	μA
Emitter Base Cutoff Current	I_{EBO}	$V_{EB}=10\text{V}$	-	-	50	nA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=5\text{V}, I_C=10\text{mA}$	10000	-	100000	-
	$h_{FE(2)}$	$V_{CE}=5\text{V}, I_C=100\text{mA}$	20000	-	200000	-
	$h_{FE(3)}$	$V_{CE}=5\text{V}, I_C=500\text{mA}$	14000	-	140000	-
Collector Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50\text{mA}, I_B=0.5\text{mA}$	-	-	1.2	V
		$I_C=500\text{mA}, I_B=0.5\text{mA}$	-	-	1.5	V
Base Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=500\text{mA}, I_B=0.5\text{mA}$	-	-	2	V
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	$I_C=50\text{mA}, V_{CE}=5\text{V}$	-	-	1.75	V
Output Capacitance	C_{obo}	$V_{CB}=10\text{V}, f=1\text{MHz}$	-	3.8	-	pF
Input Capacitance	C_{ibo}	$V_{EB}=0.5\text{V}, f=1\text{MHz}$	-	11	-	pF

Electrical Characteristic Curves

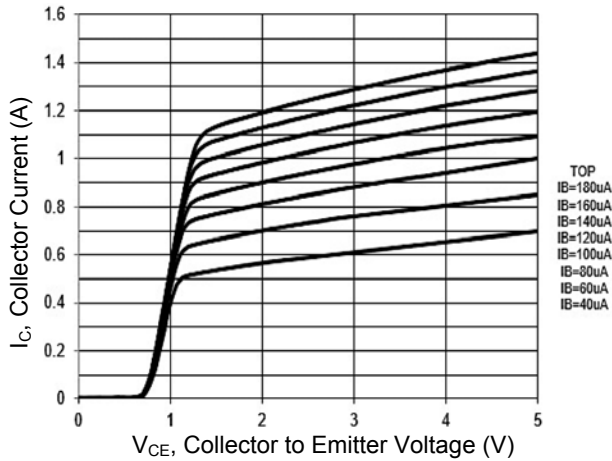


Figure 1. Output Characteristics Curve

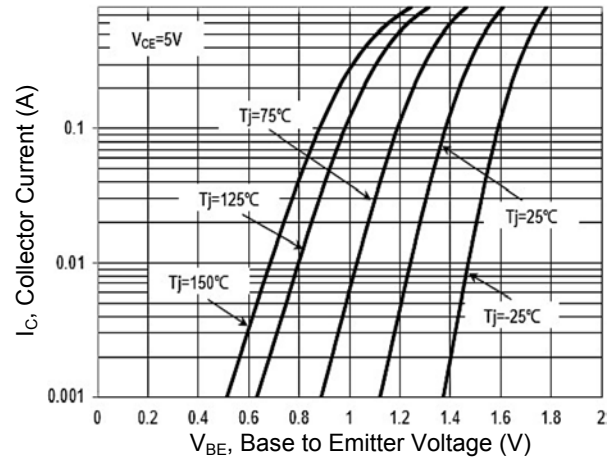


Figure 2. Collector Current vs. Base to Emitter Voltage

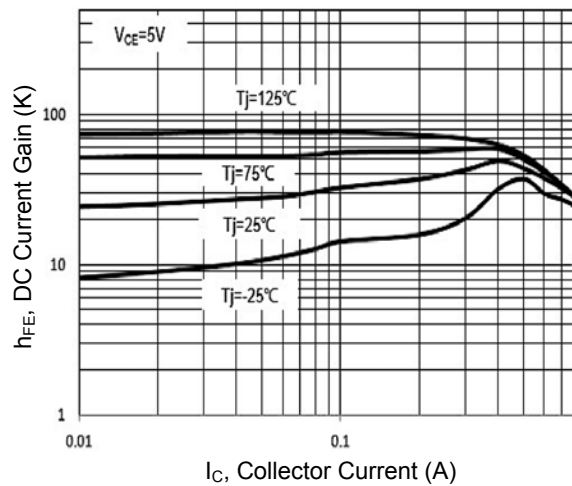


Figure 3. DC Current Gain vs. Collector Current

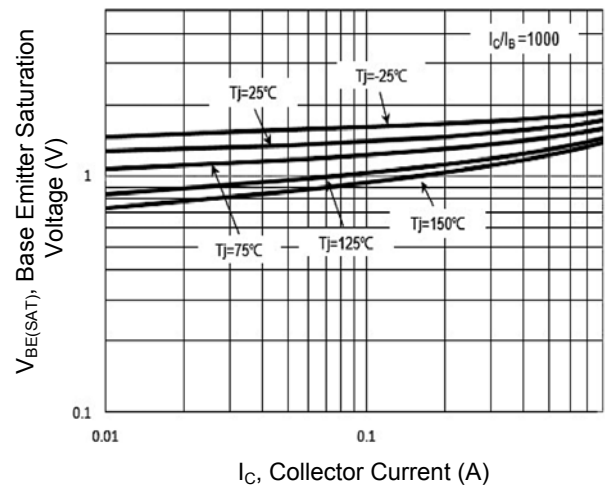


Figure 4. Base Emitter Saturation Voltage vs. Collector Current

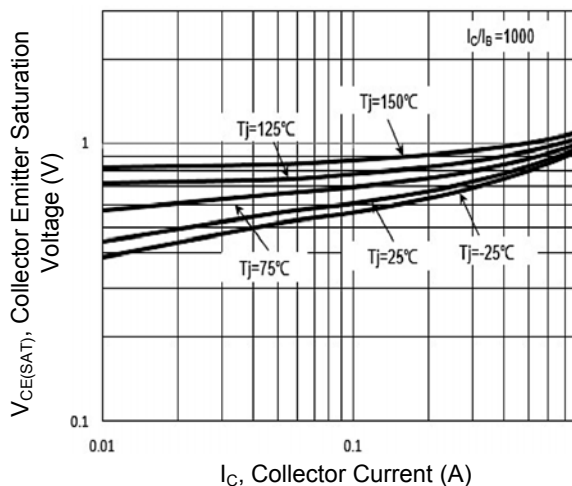


Figure 5. Collector Emitter Saturation Voltage vs. Collector Current

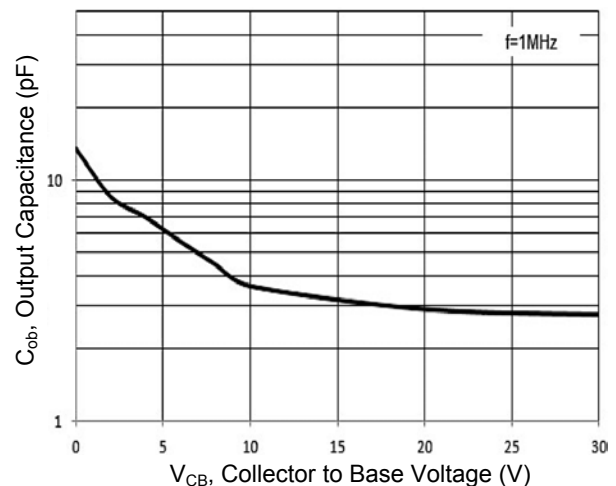


Figure 6. Output Capacitance

Electrical Characteristic Curves

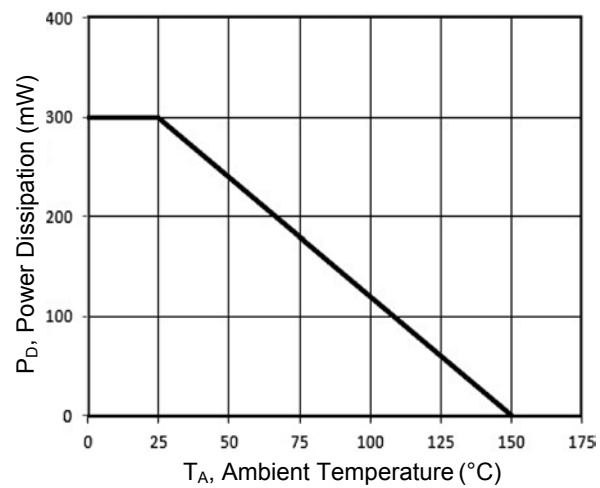
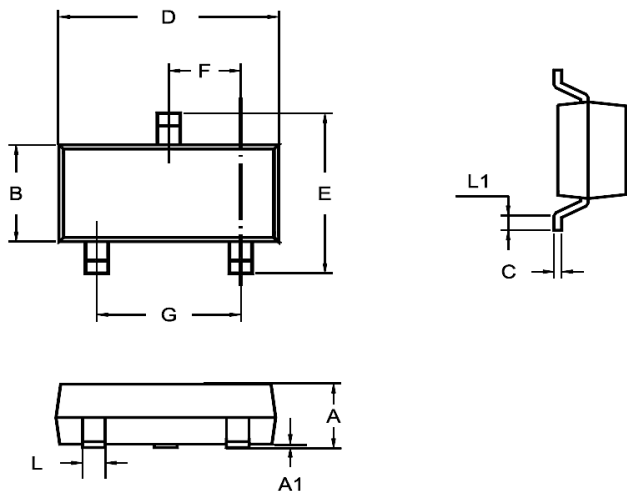


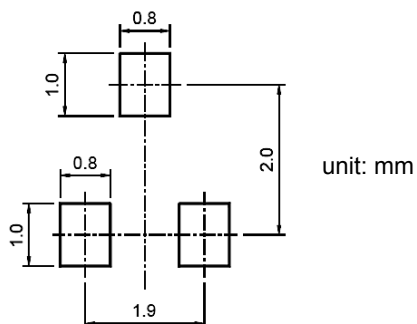
Figure 7. Power Derating Curve

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



Ordering Information

Device	Package	Marking	Carrier	Quantity
GSMMBT6427	SOT-23	FL	Tape & Reel	3,000 Pcs / Reel