

GSTM8050LT1

NPN General Purpose Transistor

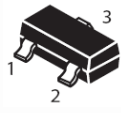
Product Description

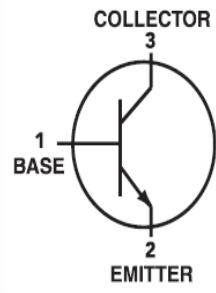
This device is designed as a general purpose amplifier and switch.

Features

- Collector-Emitter Voltage : 25V
- Collector Current : 800mA
- Lead(Pb)-Free

Packages & Pin Assignments

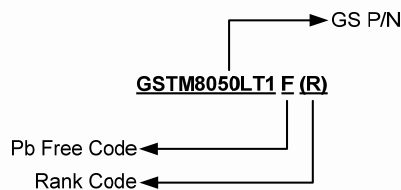
SOT-23	
	
Pin	Description
1	Base
2	Emitter
3	Collector



Marking Information

P/N	Package	Rank	Part Marking
GSTM8050LT1F	SOT-23	P	80P
GSTM8050LT1F	SOT-23	Q	1YC
GSTM8050LT1F	SOT-23	R	1YE
GSTM8050LT1F	SOT-23	S	80S

Ordering Information



Part Number	Package	Quantity
GSTM8050LT1F(P or Q or R or S)	SOT-23	3000 PCS

Absolute Maximum Ratings

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

Symbol	Conditions	Typical	Unit
V_{CEO}	Collector-Emitter Voltage	25	V
V_{CBO}	Collector-Base Voltage	40	V
V_{EBO}	Emitter-Base Voltage	5	V
$I_{C(DC)}$	Collector Current (DC)	800	mA
P_D	Total Device Dissipation FR-5 Board (1) $T_A=25^\circ\text{C}$ Derate above 25°C	225	mW
		1.8	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	556	$^\circ\text{C/W}$
P_D	Total Device Dissipation Alumina Substrate (2) $T_A=25^\circ\text{C}$ Derate above 25°C	300	mW
		2.4	mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	417	$^\circ\text{C/W}$
T_J	Junction Temperature Range	-55 to +150	$^\circ\text{C}$
T_{STG}	Storage Temperature Range	-55 to +150	$^\circ\text{C}$

Note 1.FR-5=1.0x0.75x0.062 in

Note 2.Alumina=0.4x0.3x0.024 in. 99.5% alumina

Electrical Characteristics

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

Symbol	Conditions	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=0.1\text{mA}$, $I_B=0\text{mA}$)	25	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu\text{A}$, $I_E=0\text{mA}$)	40	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu\text{A}$, $I_C=0\text{mA}$)	5	-	V
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=35\text{V}$, $I_E=0\text{mA}$)	-	0.15	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=4\text{V}$, $I_C=0\text{mA}$)	-	0.15	μA
$h_{FE(1)}$	DC Current Gain ($I_C=100\text{mA}$, $V_{CE}=1\text{V}$)	100	600	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=800\text{mA}$, $I_B=80\text{mA}$)	-	0.5	V

Classification of $h_{FE(1)}$

Rank	P	Q	R	S
Range	100-200	150-300	200-400	300-600
Marking	80P	1YC	1YE	80S

Typical Performance Characteristics

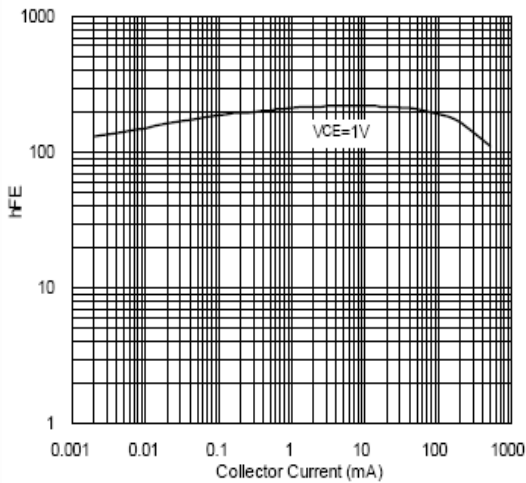


FIG.1 - Current Gain & Collector Current

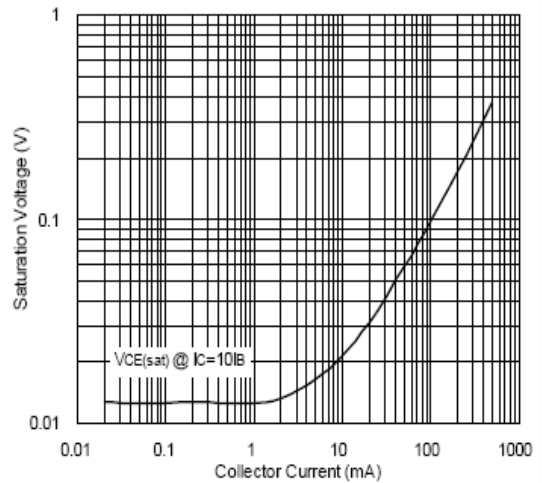


FIG.2 - Saturation Voltage & Collector Current

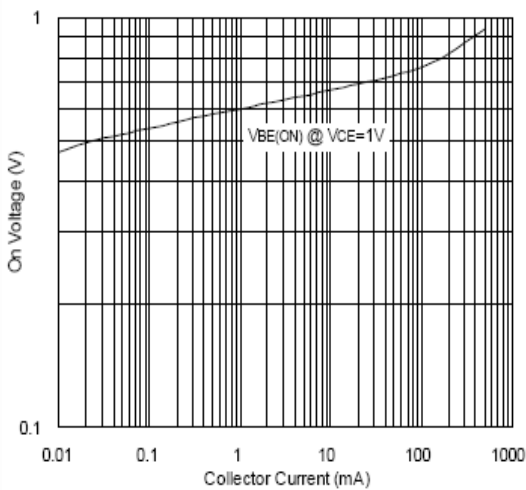


FIG.3 - On Voltage & Collector Current

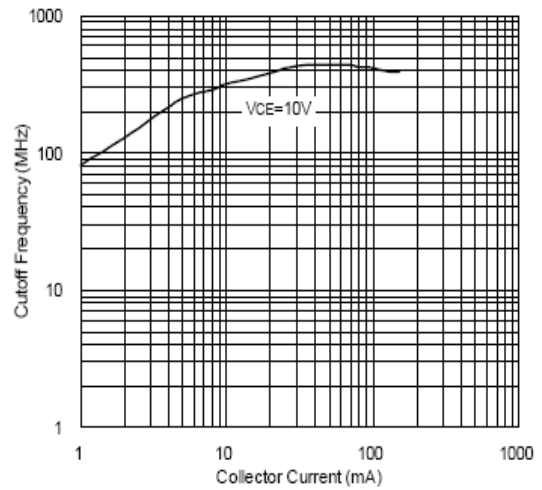


FIG.4 - Cutoff Frequency & Collector Current

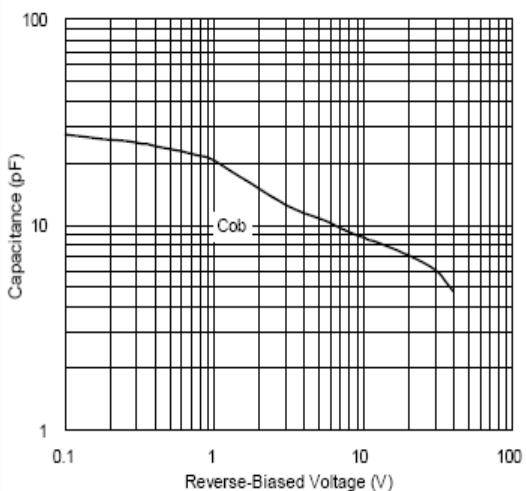
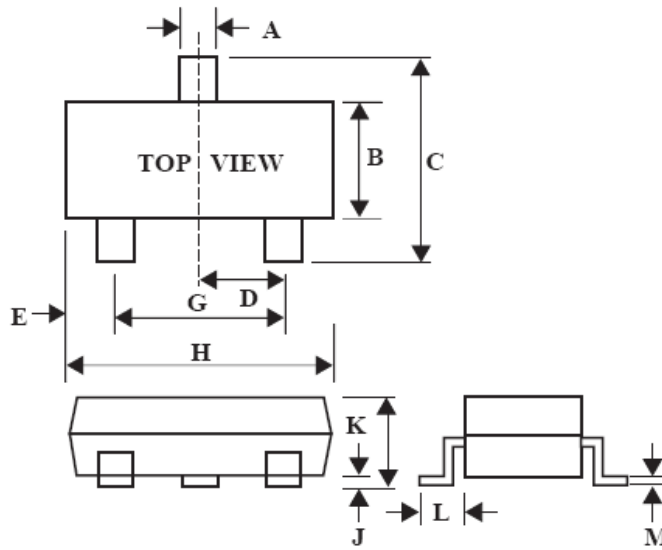


FIG.5 - Capacitance & Reverse-Biased Voltage

Package Dimension

SOT-23



Dimensions				
Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	0.35	0.51	0.014	0.020
B	1.19	1.40	0.047	0.055
C	2.10	3.00	0.083	0.118
D	0.85	1.05	0.033	0.041
E	0.46	1.00	0.018	0.039
G	1.70	2.10	0.067	0.083
H	2.70	3.10	0.106	0.122
J	0.01	0.13	0.000	0.005
K	0.89	1.10	0.035	0.043
L	0.30	0.61	0.011	0.024
M	0.076	0.25	0.002	0.010

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