

GSTS9014LT1

NPN General Purpose Transistor

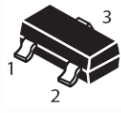
Product Description

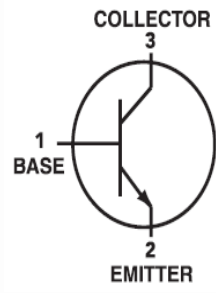
This device is designed as a general purpose amplifier and switch.

Features

- Collector-Emitter Voltage : 45V
- Collector Current : 100mA
- Lead(Pb)-Free

Packages & Pin Assignments

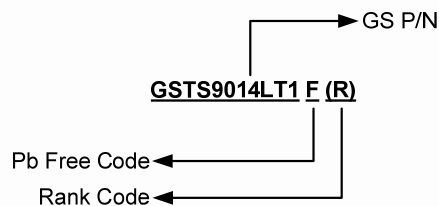
SOT-23	
	
Pin	Description
1	Base
2	Emitter
3	Collector



Marking Information

P/N	Package	Rank	Part Marking
GSTS9014LT1F	SOT-23	Q	14Q
GSTS9014LT1F	SOT-23	R	14R
GSTS9014LT1F	SOT-23	S	14S
GSTS9014LT1F	SOT-23	T	14T

Ordering Information



Part Number	Package	Quantity
GSTS9014LT1F(Q or R or S or T)	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	45	V
V_{CBO}	Collector-Base Voltage	50	V
V_{EBO}	Emitter-Base Voltage	5	V
$I_{C(DC)}$	Collector Current (DC)	100	mA
P_D	Total Device Dissipation FR-5 Board (1)	225	mW
	$T_A=25^\circ\text{C}$ Derate above 25°C	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)	300	mW
	$T_A=25^\circ\text{C}$ Derate above 25°C	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)

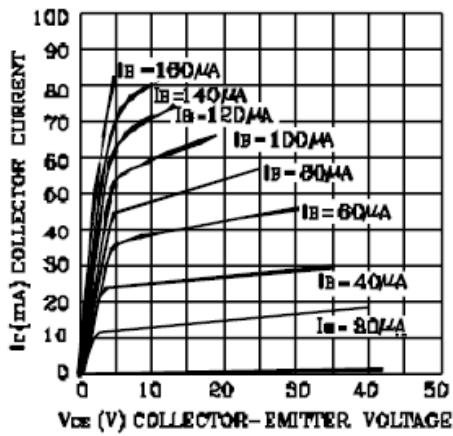
Symbol	Conditions	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ($I_C=0.1\text{mA}$, $I_B=0\text{mA}$)	45	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ($I_C=100\mu\text{A}$, $I_E=0\text{mA}$)	50	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ($I_E=100\mu\text{A}$, $I_C=0\text{mA}$)	5	-	V
I_{CBO}	Collector-Base Cutoff Current ($V_{CB}=40\text{V}$, $I_E=0\text{mA}$)	-	0.1	μA
I_{EBO}	Emitter-Base Cutoff Current ($V_{EB}=3\text{V}$, $I_C=0\text{mA}$)	-	0.1	μA
h_{FE}	DC Current Gain ($I_C=1\text{mA}$, $V_{CE}=5\text{V}$)	150	1000	-
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage ($I_C=100\text{mA}$, $I_B=5\text{mA}$)	-	0.3	V

Classification of h_{FE}

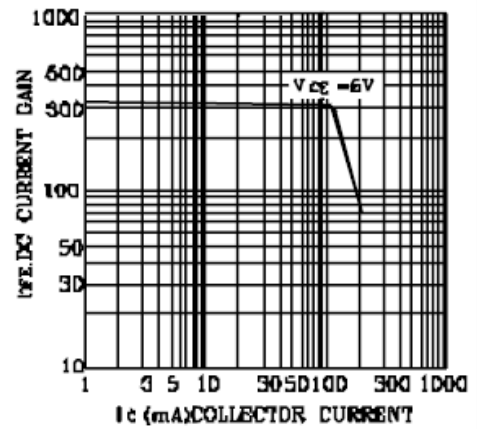
Rank	Q	R	S	T
Range	150-300	200-400	300-600	400-1000
Marking	14Q	14R	14S	14T

Typical Performance Characteristics

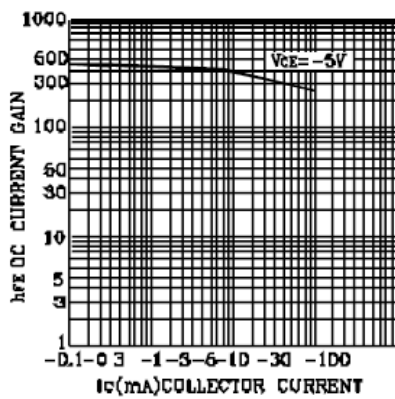
STATIC CHARACTERISTIC



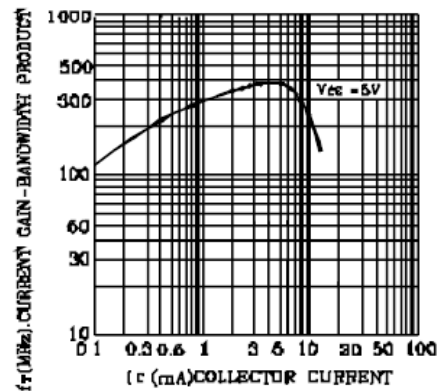
DC CURRENT GAIN



BASE-EMITTER SATURATION VOLTAGE COLLECTOR-EMITTER SATURATION VOLTAGE

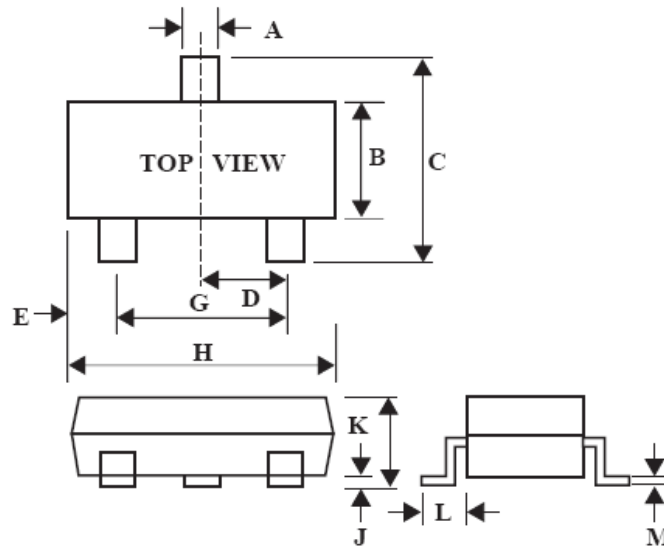


CURRENT GAIN-BANDWIDTH PRODUCT



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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