

# GSTS9014LT1

## NPN General Purpose Transistor


### Product Description

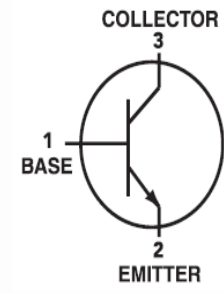
This device is designed as a general purpose amplifier and switch.

### Features

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

### Packages & Pin Assignments

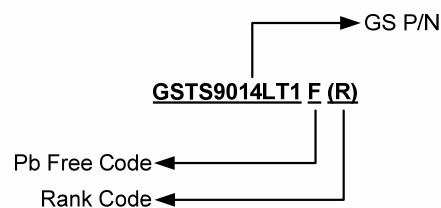
SOT-23	
	
Pin	Description
1	Base
2	Emitter
3	Collector



### 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) $T_A=25^\circ\text{C}$ Derate above $25^\circ\text{C}$	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 $25^\circ\text{C}$	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)

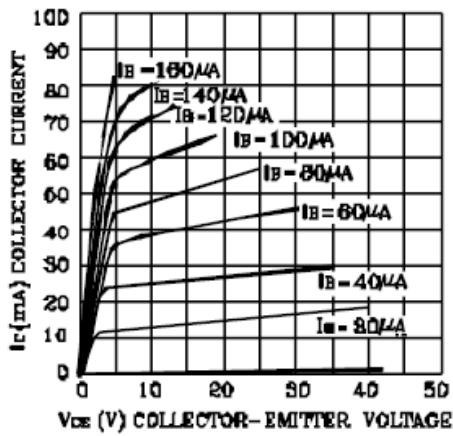
Symbol	Conditions	Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage ( $I_C=0.1\text{mA}$ , $I_B=0\text{mA}$ )	45	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage ( $I_C=100\mu\text{A}$ , $I_E=0\text{mA}$ )	50	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage ( $I_E=100\mu\text{A}$ , $I_C=0\text{mA}$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

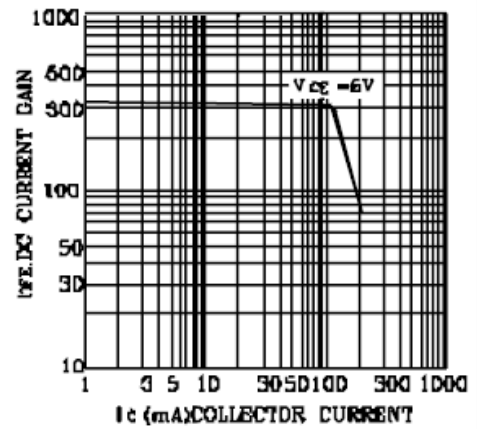
Rank	Q	R	S	T
Range	150-300	200-400	300-600	400-1000
Marking	14Q	14R	14S	14T

## Typical Performance Characteristics

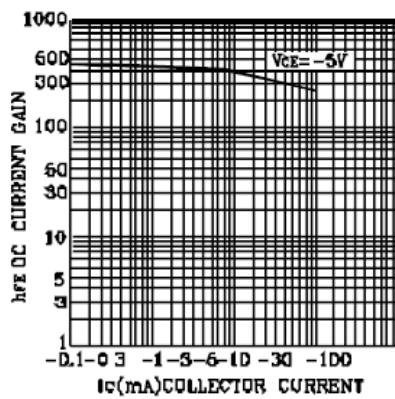
### STATIC CHARACTERISTIC



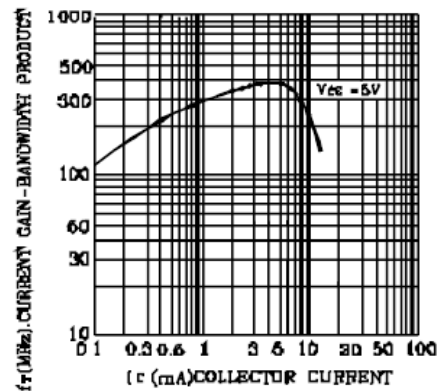
### DC CURRENT GAIN



### BASE-EMITTER SATURATION VOLTAGE COLLECTOR-EMITTER SATURATION VOLTAGE

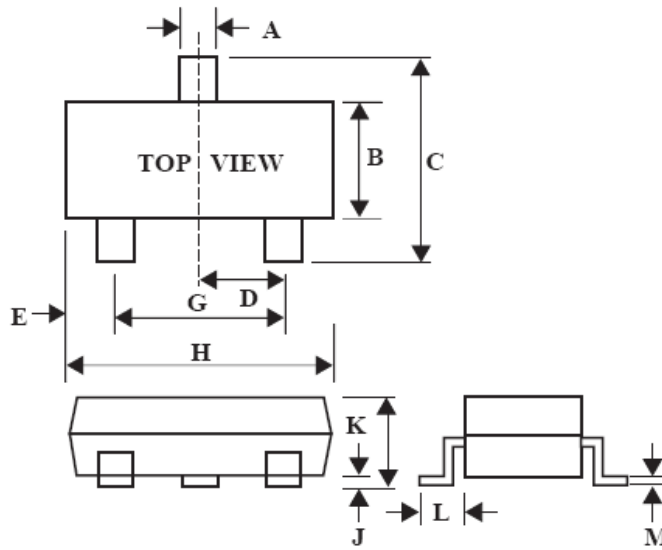


### CURRENT GAIN-BANDWIDTH PRODUCT



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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