

# GST2SC1383 Series

## NPN General Purpose Transistors

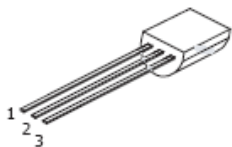
### Product Description

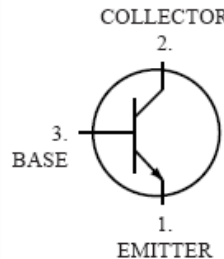
This device is designed as a general purpose amplifier and switch.

### Features

- Collector-Emitter Voltage : 25V (2SC1383)  
50V (2SC1384)
- Collector Current : 1.0A
- Lead(Pb)-Free

### Packages & Pin Assignments

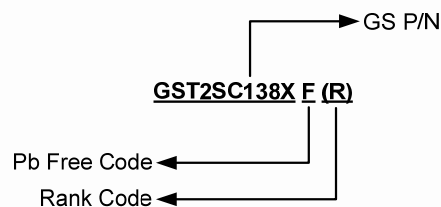
TO-92MOD	
	
Pin	Description
1	Emitter
2	Collector
3	Base



### Marking Information

P/N	Package	Rank	Part Marking
GST2SC1383F	TO-92MOD	(Q) / (R) / (H)	2SC1383
GST2SC1384F	TO-92MOD	(Q) / (R) / (H)	2SC1384

### Ordering Information



Part Number	Package	Quantity
GST2SC1383F(Q or R or H)	TO-92MOD	500 PCS
GST2SC1384F(Q or R or H)	TO-92MOD	500 PCS

## Absolute Maximum Ratings

(T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Conditions	Value	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage GST2SC1383F GST2SC1384F	25 50	V
V <sub>CBO</sub>	Collector-Base Voltage GST2SC1383F GST2SC1384F	30 60	V
V <sub>EBO</sub>	Emitter-Base Voltage	5.0	V
I <sub>C(DC)</sub>	Collector Current-Continuous (DC)	1.0	A
I <sub>cp(DC)</sub>	Peak Collector Current	1.5	A
P <sub>D</sub>	Total Device Dissipation Alumina Substrate (1) T <sub>A</sub> =25°C Derate above 25°C	1.0 8.0	W mW/°C
R <sub>θJA</sub>	Thermal Resistance Junction to Ambient	125	°C/W
T <sub>J</sub>	Junction Temperature Range	-55 to +150	°C
T <sub>STG</sub>	Storage Temperature Range	-55 to +150	°C

Note 1: Alumina=0.4 x 0.3 x 0.024in, 99.5% alumina

## Electrical Characteristics

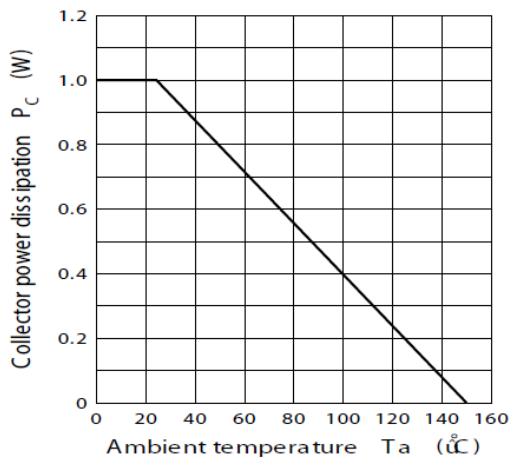
(T<sub>A</sub>=25°C unless otherwise noted)

Symbol	Conditions	Min	Max	Unit
V <sub>(BR)CEO</sub>	Collector-Emitter Breakdown Voltage (I <sub>C</sub> =2mA, I <sub>B</sub> =0mA) GST2SC1383F GST2SC1384F	25 50	-	V
V <sub>(BR)CBO</sub>	Collector-Base Breakdown Voltage (I <sub>C</sub> =10uA, I <sub>E</sub> =0mA) GST2SC1383F GST2SC1384F	30 60	-	V
V <sub>(BR)EBO</sub>	Emitter-Base Breakdown Voltage (I <sub>E</sub> =10uA, I <sub>C</sub> =0mA)	5.0	-	V
I <sub>CBO</sub>	Collector-Base Cutoff Current (V <sub>CB</sub> =20V, I <sub>E</sub> =0mA)	-	0.1	uA
h <sub>FE (1)</sub>	DC Current Gain (I <sub>C</sub> =500mA, V <sub>CE</sub> =10V)	85	340	-
h <sub>FE (2)</sub>	DC Current Gain (I <sub>C</sub> =1.0A, V <sub>CE</sub> =5.0V)	50	-	-
V <sub>BE(sat)</sub>	Base-Emitter Saturation Voltage (I <sub>C</sub> =500mA, I <sub>B</sub> =50mA)	-	1.2	V
V <sub>CE(sat)</sub>	Collector-Emitter Saturation Voltage (I <sub>C</sub> =500mA, I <sub>B</sub> =50mA)	-	0.4	V
f <sub>T</sub>	Current-Gain-Bandwidth Product (I <sub>C</sub> =50mA, V <sub>CE</sub> =10V, f=30MHz)	100	-	MHz

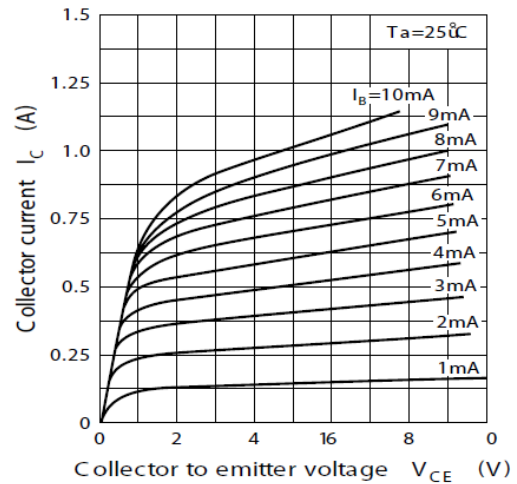
## Classification of h<sub>FE</sub>

Rank	Q	R	H
Range	85-170	120-240	170-340

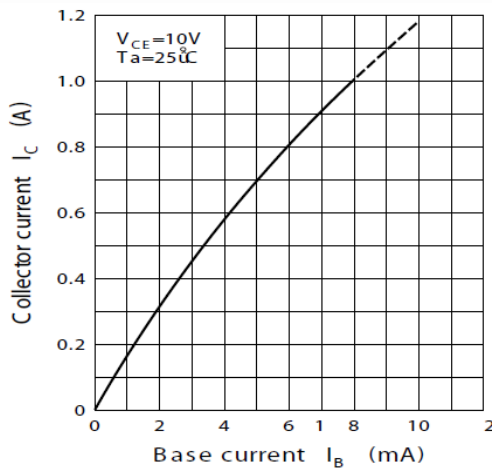
## Typical Performance Characteristics



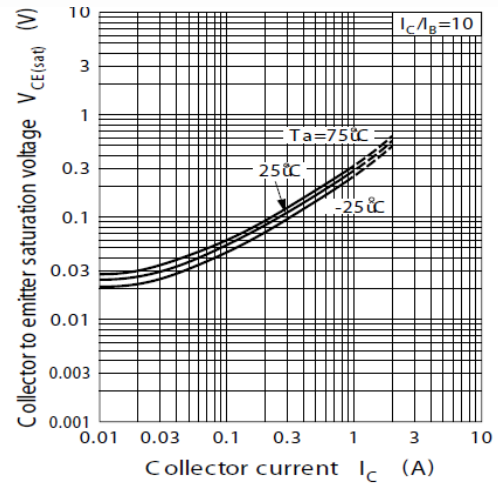
**FIG1. Total Power Dissipation Vs Ambient Temperature**



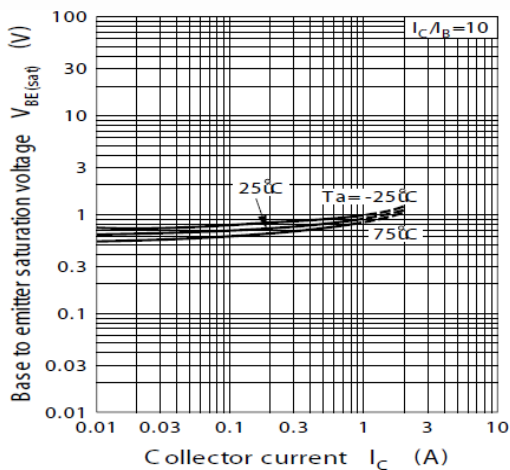
**FIG2. Static Characteristic**



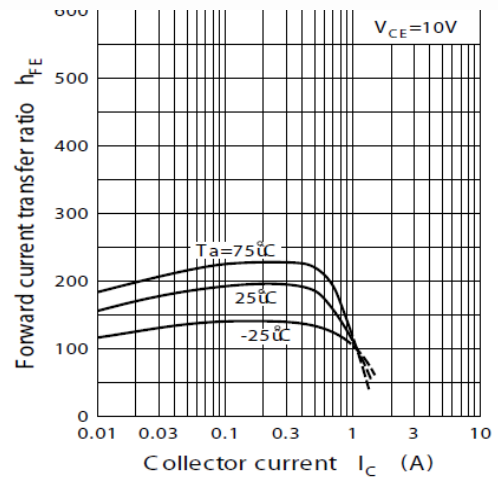
**FIG3. Collect Current Vs Base Current**



**FIG4. Collector-Emitter Saturation Voltage**



**FIG 5. Base-Emitter Saturation Voltage**



**FIG6. Current Gain Bandwidth Product**

## Typical Performance Characteristics (Continue)

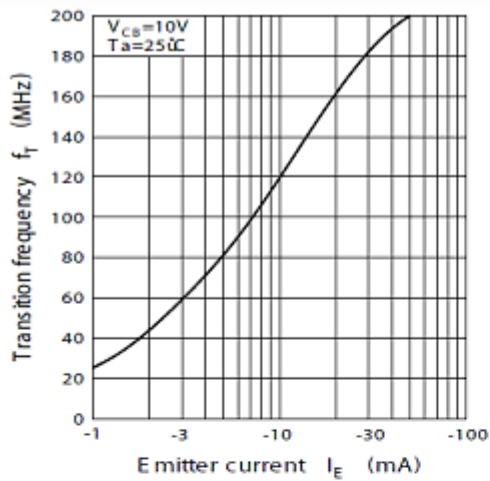


FIG7. Current-Gain-Bandwidth

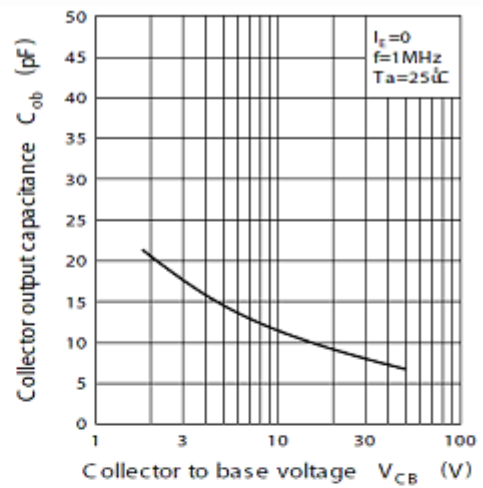


FIG.8. Capacitance

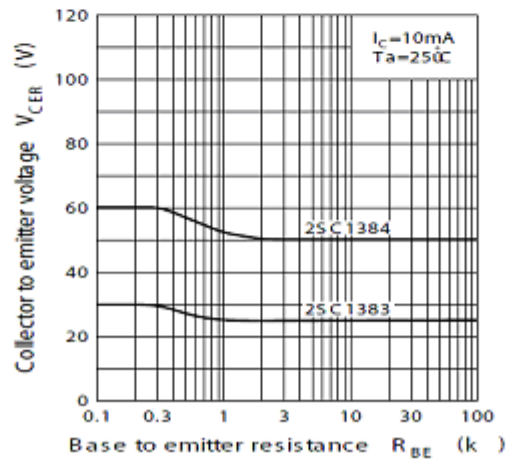
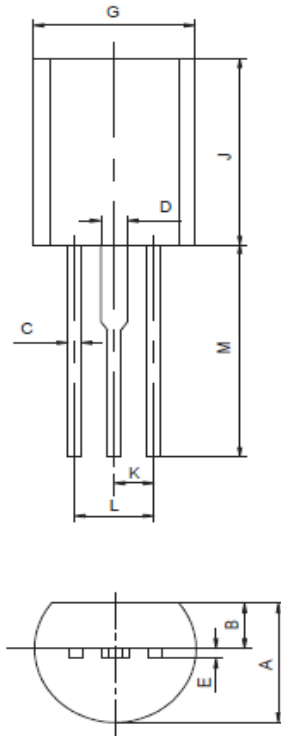


FIG9.  $V_{CER}$  VS  $R_{BE}$

## Package Dimension

### TO-92MOD




#### Dimensions

Symbol	Millimeters		Inches	
	Min	Max	Min	Max
A	4.7	5.1	0.185	0.2
B	1.73	2.03	0.068	0.08
C	0.4	0.6	0.016	0.024
D	0.9	1.1	0.035	0.043
E	0.4	0.5	0.016	0.02
G	5.8	6.2	0.228	0.244
J	8.4	8.8	0.331	0.346
K	1.5 (Typ)		0.059(Typ)	
L	2.9	3.1	0.114	0.122
M	12.2	13.45	0.48	0.53

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