GST2SC1383 Series

NPN General Purpose Transistors

Product Description

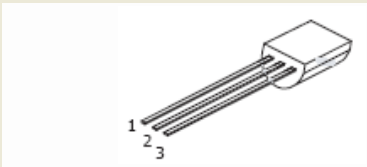
This device is designed as a general purpose amplifier and switch.

Features

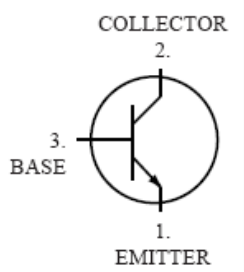
- Collector-Emitter Voltage : 25V (2SC1383)
  50V (2SC1384)
- Collector Current : 1.0A
- Lead(Pb)-Free

Packages & Pin Assignments

TO-92MOD



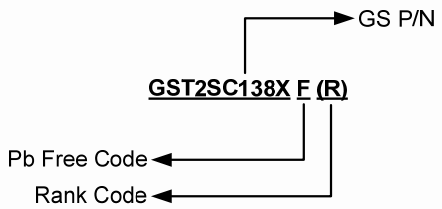
Pin	Description
1	Emitter
2	Collector
3	Base



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_A=25°C unless otherwise noted)

Symbol	Conditions	Value	Unit
V_{CEO}	Collector-Emitter Voltage GST2SC1383F GST2SC1384F	 25 50	V
V_{CBO}	Collector-Base Voltage GST2SC1383F GST2SC1384F	 30 60	V
V_{EBO}	Emitter-Base Voltage	5.0	V
$I_{C(DC)}$	Collector Current-Continuous (DC)	1.0	A
Icp(DC)	Peak Collector Current	1.5	A
P_D	Total Device Dissipation Alumina Subatrate (1) T_A=25°C Derate above 25°C	 1.0 8.0	 W mW/°C
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	125	°C/W
T_J	Junction Temperature Range	-55 to +150	°C
T_{STG}	Storage Temperature Range	-55 to +150	°C

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

Electrical Characteristics

(T_A=25°C unless otherwise noted)

Symbol	Conditions		Min	Max	Unit
$V_{(BR)CEO}$	Collector-Emitter Breakdown Voltage (I_C=2mA, I_B=0mA)	GST2SC1383F GST2SC1384F	25 50	-	V
$V_{(BR)CBO}$	Collector-Base Breakdown Voltage (I_C=10uA, I_E=0mA)	GST2SC1383F GST2SC1384F	30 60	-	V
$V_{(BR)EBO}$	Emitter-Base Breakdown Voltage (I_E=10uA, I_C=0mA)		5.0	-	V
I_{CBO}	Collector-Base Cutoff Current (V_{CB}=20V, I_E=0mA)		-	0.1	uA
$h_{FE\ (1)}$	DC Current Gain (I_C=500mA, V_{CE}=10V)		85	340	-
$h_{FE\ (2)}$	DC Current Gain (I_C=1.0A, V_{CE}=5.0V)		50	-	-
$V_{BE(sat)}$	Base-Emitter Saturation Voltage (I_C=500mA, I_B=50mA)		-	1.2	V
$V_{CE(sat)}$	Collector-Emitter Saturation Voltage (I_C=500mA, I_B=50mA)		-	0.4	V
f_T	Current-Gain-Bandwidth Product (I_C=50mA, V_{CE}=10V, f=30MHz)		100	-	MHz

Classification of h_{FE}

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

Typical Performance Characteristics

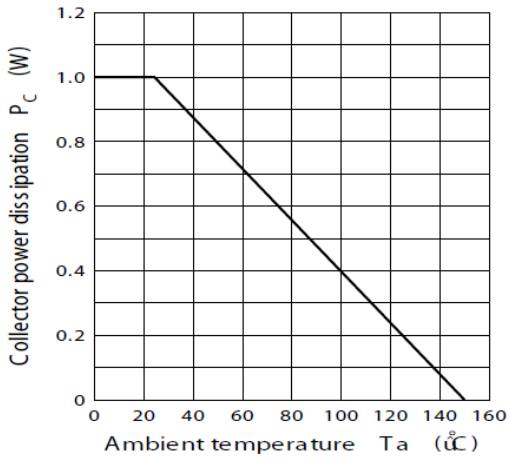


FIG1. Total Power Dissipation Vs Ambient Temperature

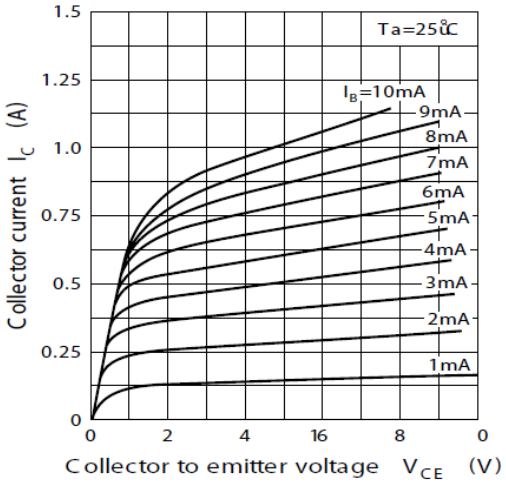


FIG2. Static Characteristic

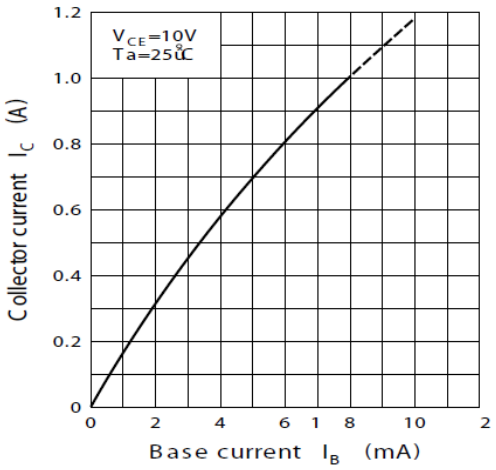


FIG3. Collect Current Vs Base Current

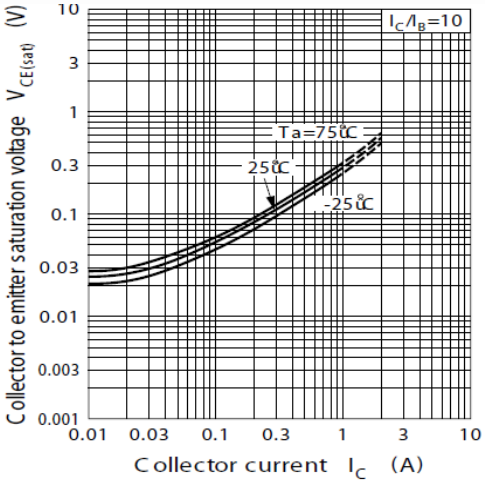


FIG4. Collector-Emitter Saturation Voltage

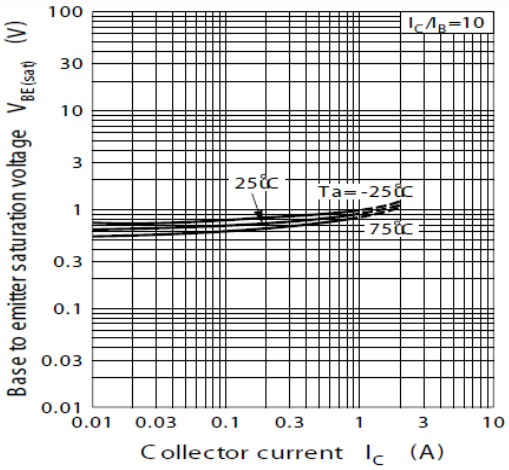


FIG 5. Base-Emitter Saturation Voltage

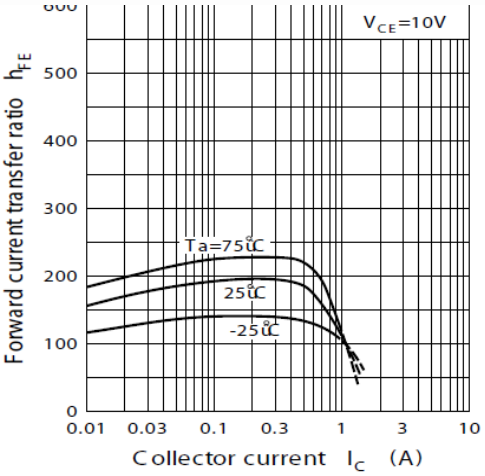


FIG6. Current Gain Bandwidth Product

Typical Performance Characteristics (Continue)

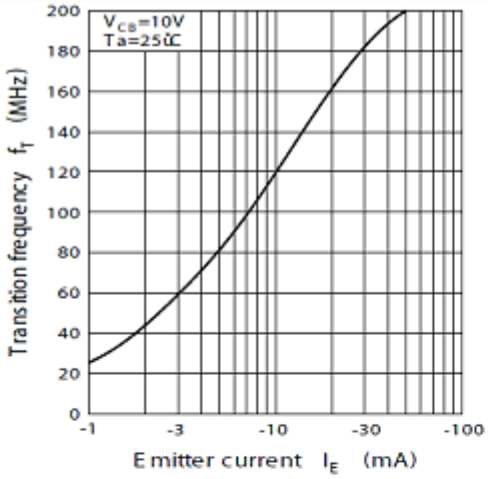


FIG7. Current-Gain-Bandwidth

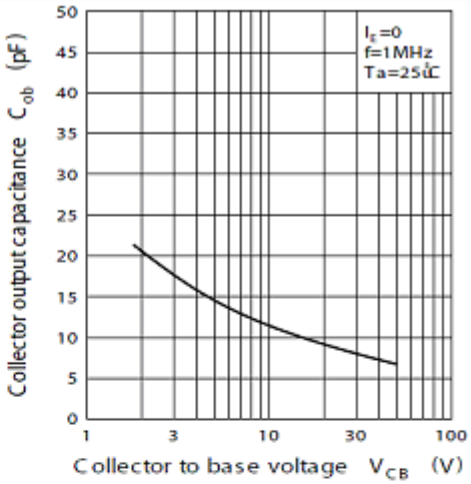


FIG.8. Capacitance

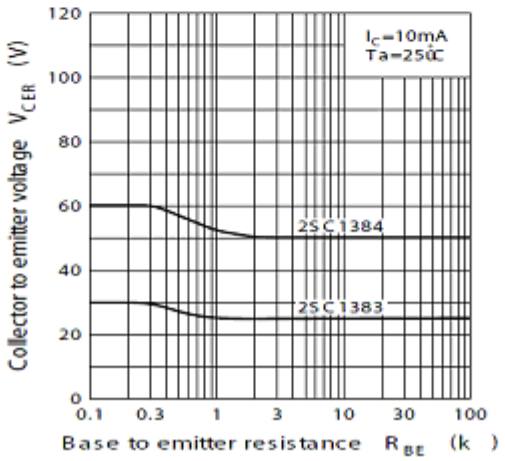
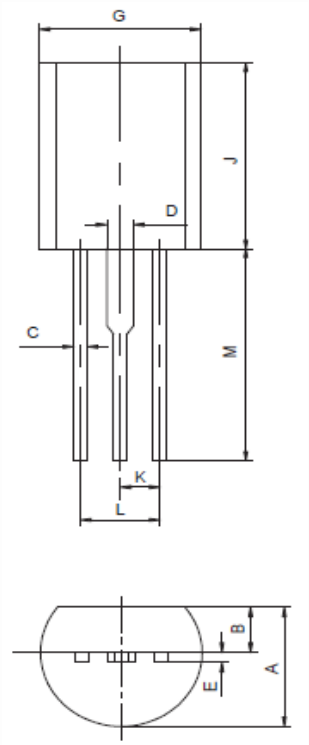


FIG9. V_{CER} VS R_{BE}

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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