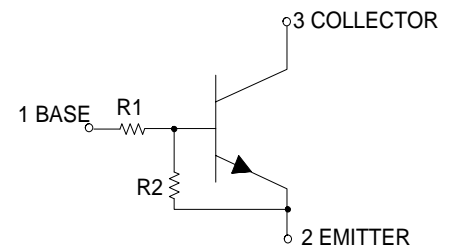
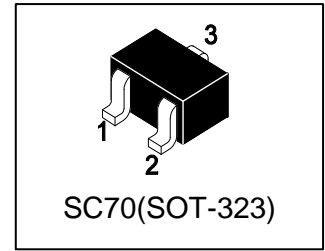


# LMUN5213T1G

## S-LMUN5213T1G

Bias Resistor Transistor  
NPN Silicon Surface Mount Transistor  
with Monolithic Bias Resistor Network



### 1. FEATURES

- Simplifies circuit design
- Reduces board space and component count
- The SC-70/SOT-323 package can be soldered using wave or reflow.
- The modified gull-winged leads absorb thermal stress during soldering eliminating the possibility of damage to the die.
- We declare that the material of product compliance with RoHS requirements and Halogen Free.
- S- prefix for automotive and other applications requiring unique site and control change requirements; AEC-Q101 qualified and PPAP capable.

### 2. DEVICE MARKING AND RESISTOR VALUES

Device	Marking	R1(K)	R2(K)	Vin(V)	Shipping
LMUN5213T1G	8C	47	47	-10~+40	3000/Tape&Reel
LMUN5213T3G	8C	47	47	-10~+40	10000/Tape&Reel

### 3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector-Emitter Voltage	V <sub>CEO</sub>	50	V
Collector-Base Voltage	V <sub>CBO</sub>	50	V
Collector Current — Continuous	I <sub>C</sub>	100	mA

### 4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ TA = 25°C Derate above 25°C	PD	202 1.6	mW mW/°C
Thermal Resistance, Junction-to-Ambient(Note 1)	R <sub>ΘJA</sub>	618	°C/W
Junction and Storage temperature	T <sub>J</sub> ,T <sub>stg</sub>	-55~+150	°C

1. FR-5 @ Minimum Pad.

**5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)**

## OFF CHARACTERISTICS

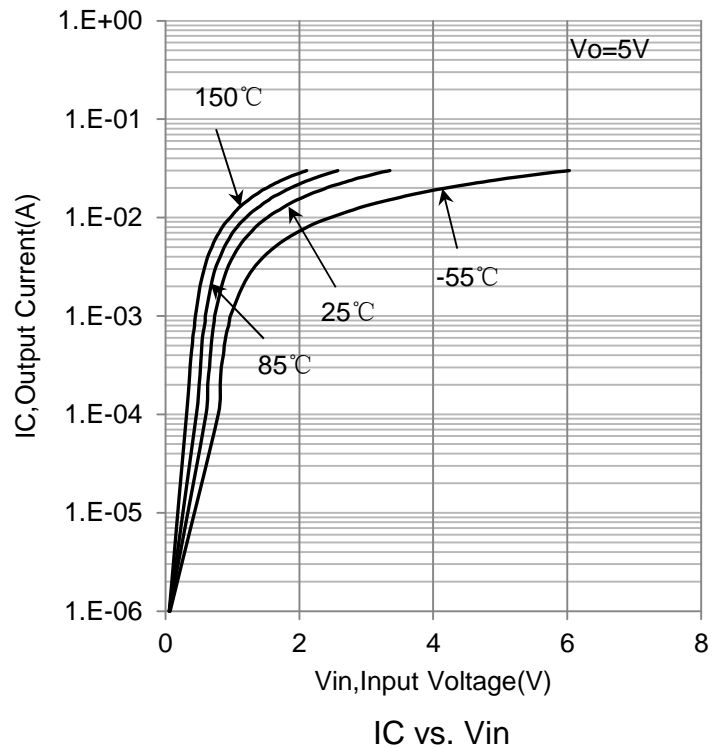
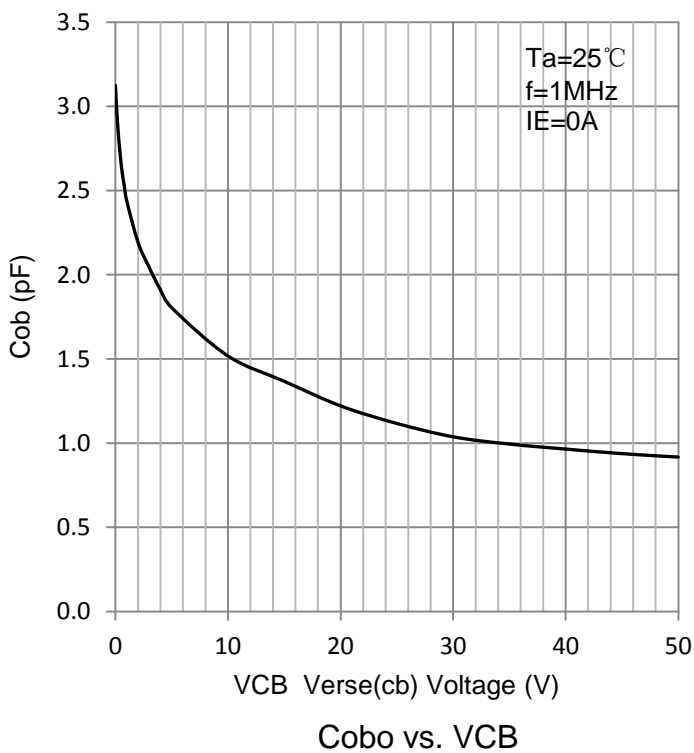
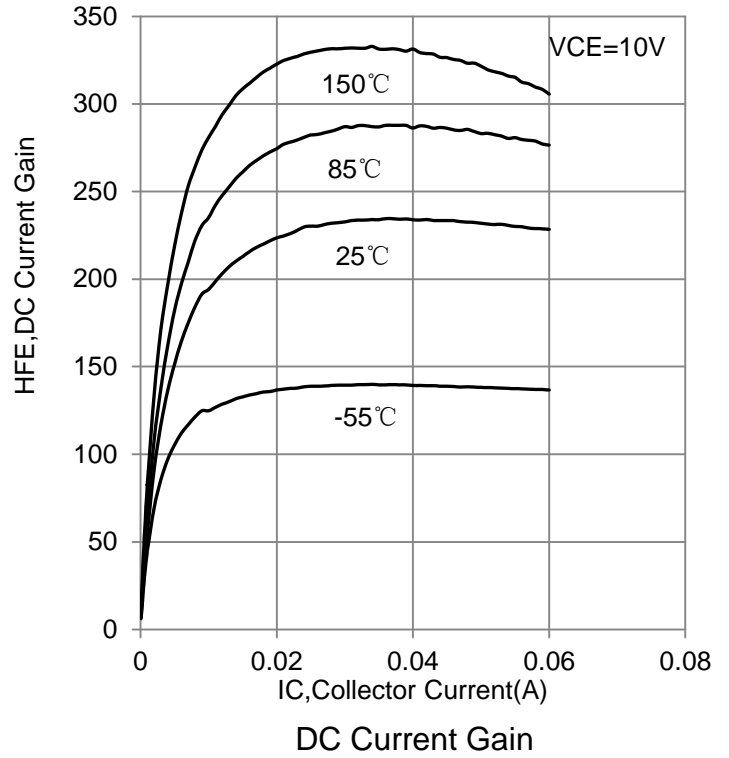
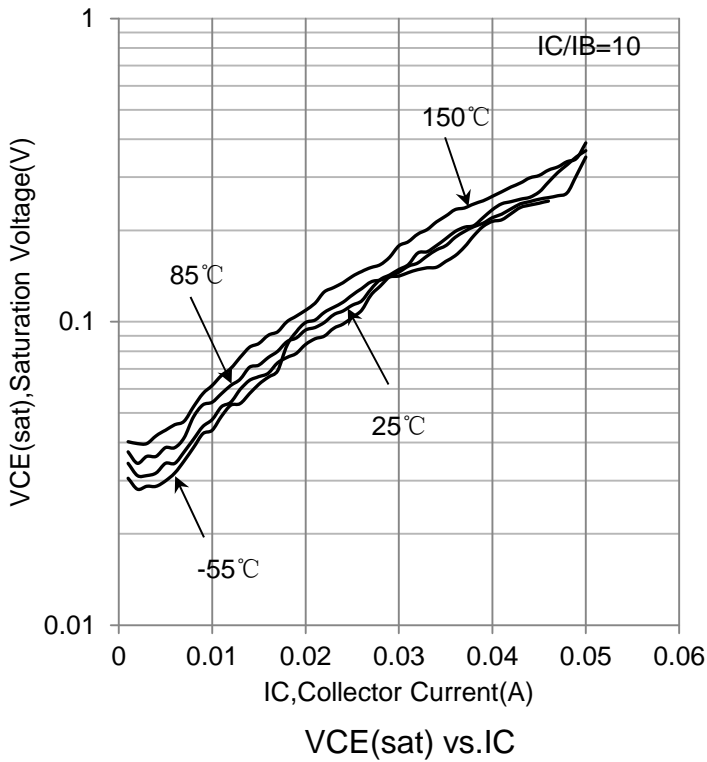
Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 2.0 mA, IB = 0)	VBR(CEO)	50	-	-	V
Collector–Base Breakdown Voltage (IC = 10 μA, IE = 0)	VBR(CBO)	50	-	-	V
Collector-Base Cutoff Current (VCB = 50 V, IE = 0)	ICBO	-	-	100	nA
Collector-Emitter Cutoff Current (VCE = 50 V, IB = 0)	ICEO	-	-	500	nA
Emitter-Base Cutoff Current (VEB = 6.0 V, IC = 0)	IEBO	-	-	0.1	mA

## ON CHARACTERISTICS (Note 2.)

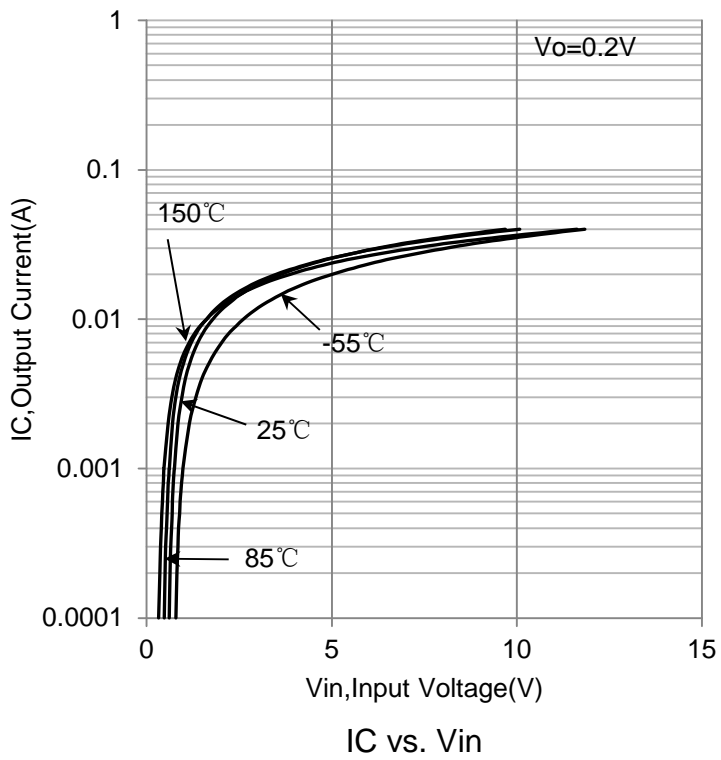
DC Current Gain (IC = 5.0 mA, VCE = 10 V)	HFE	80	140	320	
Collector–Emitter Saturation Voltage (IC = 10 mA, IB = 0.3 mA)	VCE(sat)	-	-	0.25	V
Output Voltage (on) (VCC = 5.0 V, VB = 3.5 V, RL = 1.0KΩ)	VOL	-	-	0.2	V
Output Voltage (on) (VCC = 5.0 V, VB = 0.5 V, RL = 1.0KΩ)	VOH	4.9	-	-	V
Input Voltage(off) (VCE=5.0V,IC=100μA)	Vi(off)	-	-	0.3	V
Input Voltage(on) (VCE=0.3V,IC=2.0mA)	Vi(on)	2.5	-	-	V
Input Resistor	R1	32.9	47	61.1	KΩ
Resistor Ratio	R1/R2	0.8	1	1.2	

2. Pulse Test: Pulse Width &lt; 300 μs, Duty Cycle &lt; 2.0%

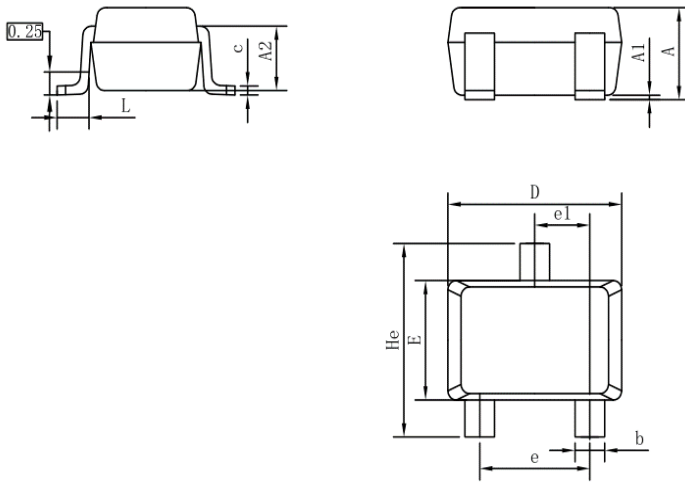
### 6. ELECTRICAL CHARACTERISTICS CURVES



## 6. ELECTRICAL CHARACTERISTICS CURVES(Con.)

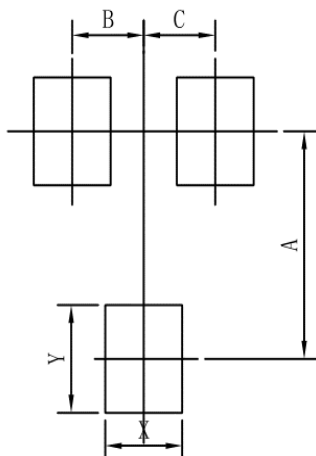


### 7.OUTLINE AND DIMENSIONS



SC70			
DIM	MIN	NOR	MAX
A	0.80	0.95	1.00
A1	0.00	0.05	0.10
A2	0.7 REF		
b	0.30	0.35	0.40
c	0.10	0.15	0.25
D	1.80	2.05	2.20
E	1.15	1.30	1.35
e	1.20	1.30	1.40
e1	0.65 BSC		
L	0.20	0.35	0.56
He	2.00	2.10	2.40
ALL Dimension in mm			

### 8.SOLDERING FOOTPRINT



SC70	
DIM	MIN
A	1.90
B	0.65
C	0.65
X	0.70
Y	0.90

## **DISCLAIMER**

- Curve guarantee in the specification. The curve of test items with electric parameter is used as quality guarantee. The curve of test items without electric parameter is used as reference only.
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