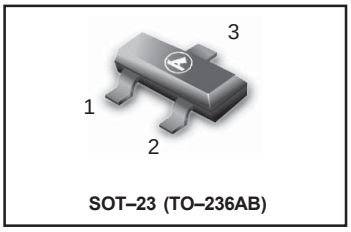
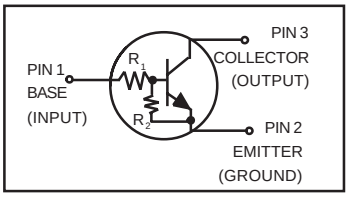
Bias Resistor Transistor
NPN Silicon Surface Mount Transistor with Monolithic Bias Resistor Network

LMUN2212LT1G
S-LMUN2212LT1G

●FEATURES
1)Simplifies Circuit Design
2)Reduces Board Space and Component Count
3)We declare that the material of product compliant with RoHS requirements and Halogen Free.
4)S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



SOT–23 (TO–236AB)



●DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
LMUN2212LT1G	A8B	3000/Tape&Reel
LMUN2212LT3G	A8B	10000/Tape&Reel

●MAXIMUM RATINGS(Ta = 25℃)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Collector Current	I_C	100	mA
Total Power Dissipation @ T_a = 25°C(Note 1.) Derate above 25°C	P_D	 246 1.5	 mW °C/W

●THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Thermal Resistance – Junction-to-Ambient (Note 1.)	$R_{\theta JA}$	508	°C/W
Operating and Storage Temperature Range	Topr, Tstg	–55 to +150	°C
Maximum Temperature for Soldering Purposes, Time in Solder Bath	T_L	260 10	°C Sec

●ELECTRICAL CHARACTERISTICS (Ta= 25℃)

OFF CHARACTERISTICS

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-Base Cutoff Current	I_{CBO}	–	–	100	nA	V_{CB} = 50 V, I_E = 0
Collector-Emitter Cutoff Current	I_{CEO}	–	–	500	nA	V_{CE} = 50 V, I_B = 0
Emitter-Base Cutoff Current	I_{EBO}	–	–	0.2	mA	V_{EB} = 6.0 V, I_C = 0
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50	–	–	V	I_C = 10 μA, I_E = 0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	–	–	V	I_C = 2.0 mA, I_B = 0
ON CHARACTERISTICS(Note2.)						
DC Current Gain	h_{FE}	60	100	–		V_{CE} = 10 V, I_C = 5.0 mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	–	–	0.25	V	IC = 10 mA, IB = 0.3 mA
Output Voltage (on)	V_{OL}	–	–	0.2	V	V_{CC} = 5.0 V, V_B = 2.5 V, R_L = 1.0 kΩ
Output Voltage (off)	V_{OH}	4.9	–	–	V	V_{CC} = 5.0 V, V_B = 0.5 V, R_L = 1.0 kΩ
Input Resistor	R1	15.4	22	28.6	kΩ	
Resistor Ratio	R1/R2	0.8	1	1.2		

1. Device mounted on a FR-4 glass epoxy printed circuit board using the minimum recommended footprint
2. Pulse Test: Pulse Width < 300 μs, Duty Cycle < 2.0%.

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ELECTRICAL CHARACTERISTIC CURVES

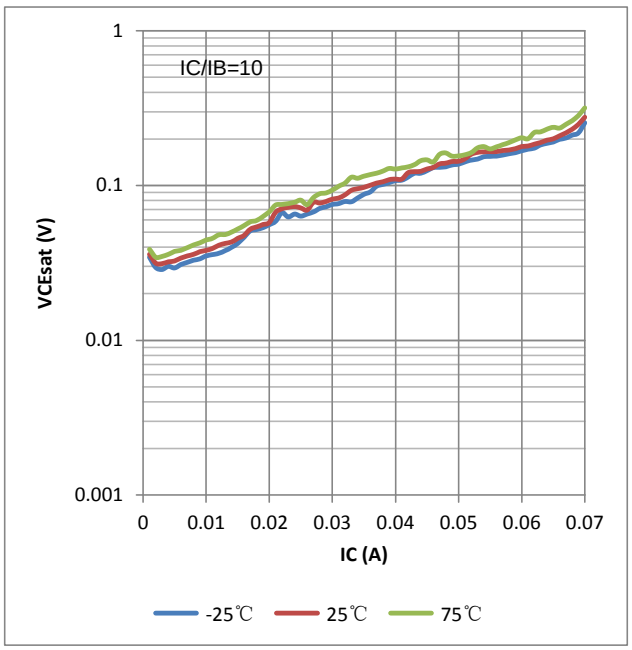


Figure 1. Collector Emitter Saturation Voltage vs. Collector Current

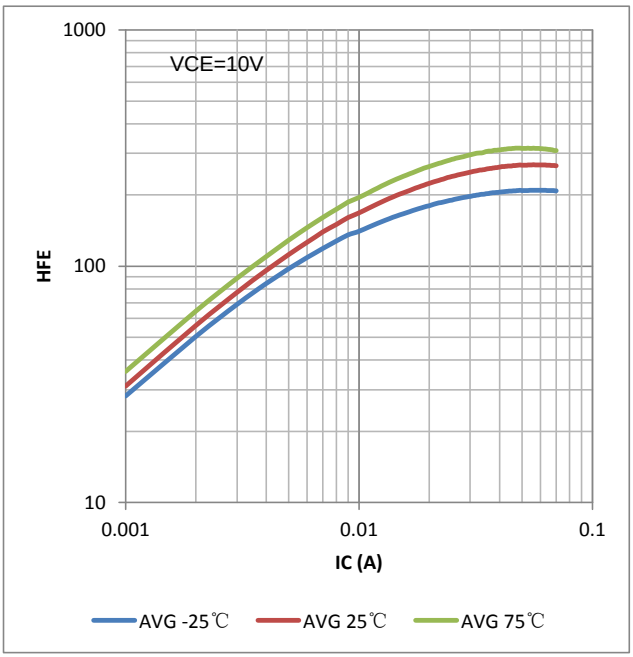


Figure 2. DC Current Gain

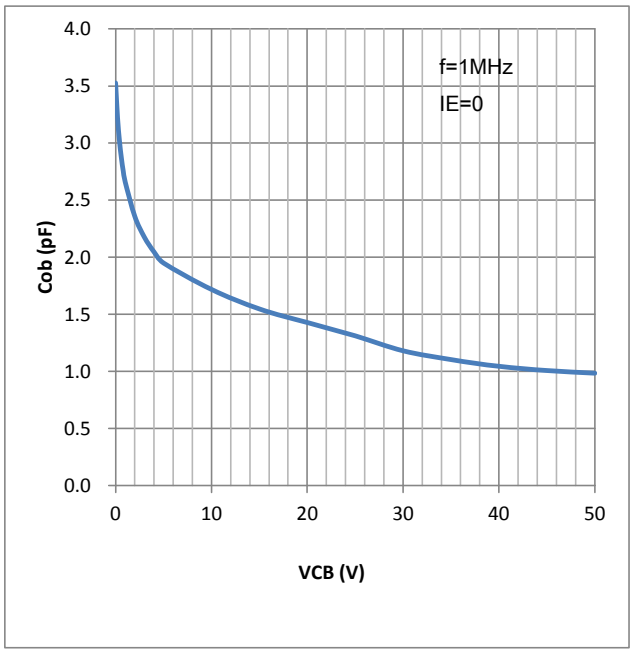


Figure 3. Output Capacitance

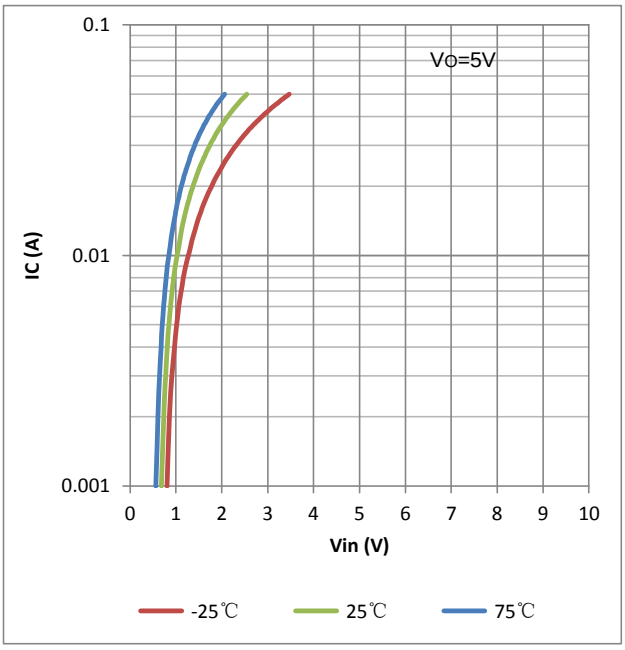


Figure 4. Output Current vs. Input Voltage

LMUN2212LT1G,S-LMUN2212LT1G

ELECTRICAL CHARACTERISTIC CURVES

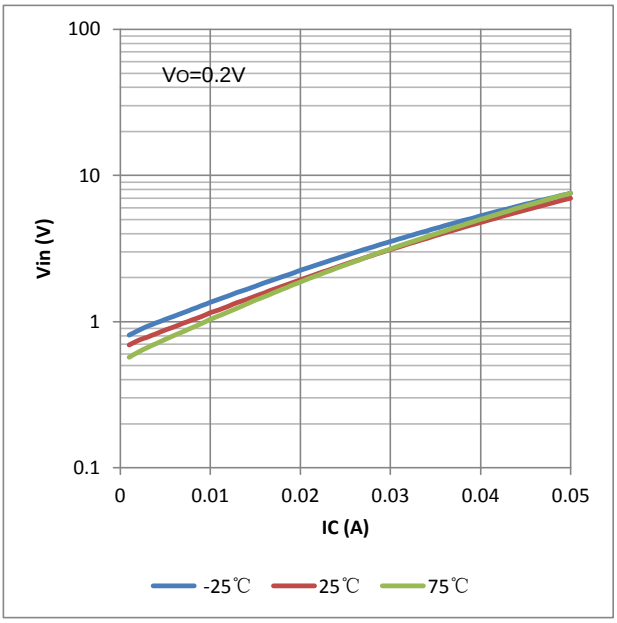
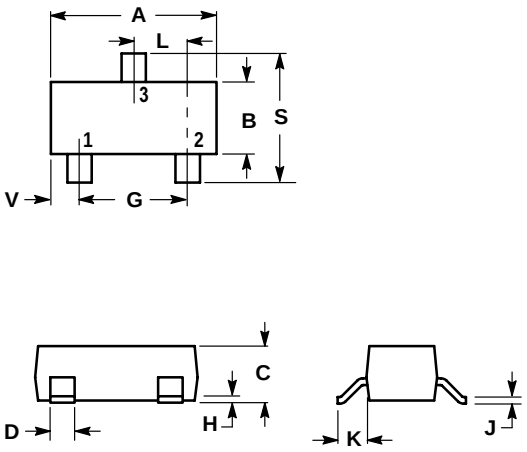


Figure 5. Input Voltage vs Output Current

LMUN2212LT1G,S-LMUN2212LT1G

SOT–23



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60