

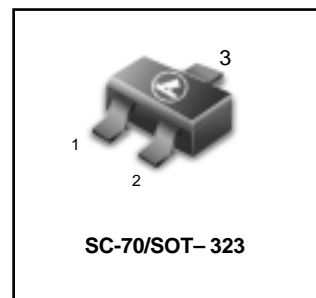
# General Purpose Transistors

## NPN Silicon

### FEATURE

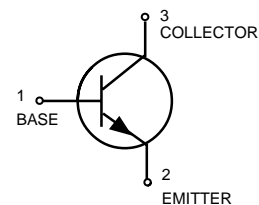
- Low Cob, Cob=2pF(Typ.).
- Epitaxial planar type.
- PNP complement:L2SA1576A
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

## L2SC4081QT1G Series S-L2SC4081QT1G Series



### DEVICE MARKING AND ORDERING INFORMATION

Device	Marking	Shipping
L2SC4081QT1G S-L2SC4081QT1G	BQ	3000/Tape&Reel
L2SC4081QT3G S-L2SC4081QT3G	BQ	10000/Tape&Reel
L2SC4081RT1G S-L2SC4081RT1G	BR	3000/Tape&Reel
L2SC4081RT3G S-L2SC4081RT3G	BR	10000/Tape&Reel
L2SC4081ST1G S-L2SC4081ST1G	BS	3000/Tape&Reel
L2SC4081ST3G S-L2SC4081ST3G	BS	10000/Tape&Reel



### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	$V_{CEO}$	50	V
Collector-Base Voltage	$V_{CBO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	7.0	V
Collector Current — Continuous	$I_C$	150	mAdc
Collector power dissipation	$P_C$	0.15	W
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C

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**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted.)

Characteristic	Symbol	Min	Typ	Max	Unit
Collector–Emitter Breakdown Voltage ( $I_C = 1\text{ mA}$ )	$V_{(BR)CEO}$	50	—	—	V
Emitter–Base Breakdown Voltage ( $I_E = 50\ \mu\text{A}$ )	$V_{(BR)EBO}$	7	—	—	V
Collector–Base Breakdown Voltage ( $I_C = 50\ \mu\text{A}$ )	$V_{(BR)CBO}$	60	—	—	V
Collector Cutoff Current ( $V_{CB} = 60\text{ V}$ )	$I_{CBO}$	—	—	0.1	$\mu\text{A}$
Emitter cutoff current ( $V_{EB} = 7\text{ V}$ )	$I_{EBO}$	—	—	0.1	$\mu\text{A}$
Collector-emitter saturation voltage ( $I_C / I_B = 50\text{ mA} / 5\text{ mA}$ )	$V_{CE(sat)}$	—	—	0.4	V
DC current transfer ratio ( $V_{CE} = 6\text{ V}$ , $I_C = 1\text{ mA}$ )	$h_{FE}$	120	—	560	—
Transition frequency ( $V_{CE} = 12\text{ V}$ , $I_E = -2\text{ mA}$ , $f = 30\text{ MHz}$ )	$f_T$	—	180	—	MHz
Output capacitance ( $V_{CB} = 12\text{ V}$ , $I_E = 0\text{ A}$ , $f = 1\text{ MHz}$ )	$C_{ob}$	—	2.0	3.5	pF

**$h_{FE}$  values are classified as follows:**

*	Q	R	S
$h_{FE}$	120~270	180~390	270~560

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Fig.1 Grounded emitter propagation characteristics

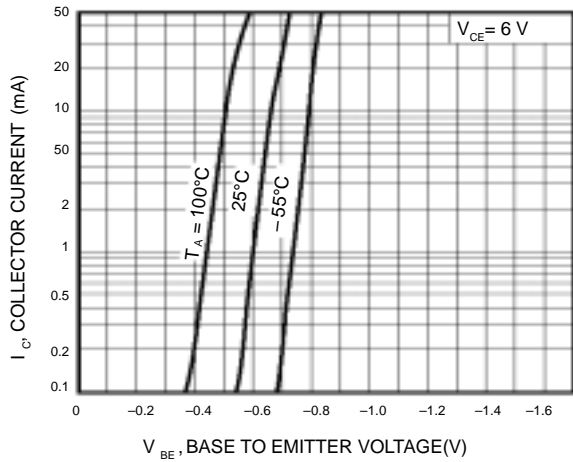


Fig.2 Grounded emitter output characteristics(I)

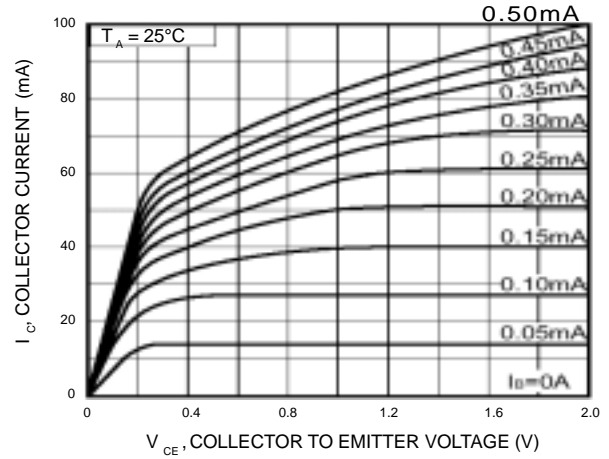


Fig.3 Grounded emitter output characteristics(II)

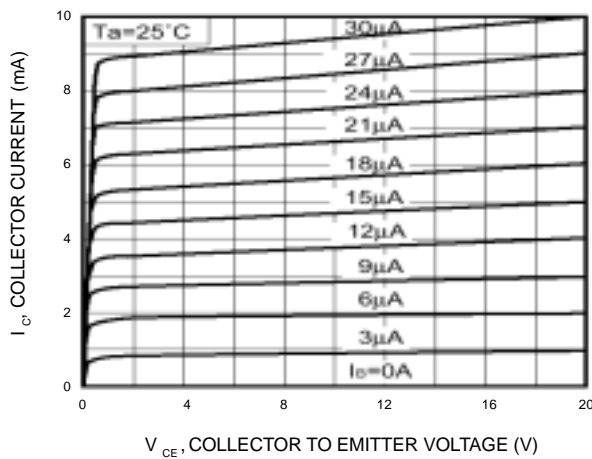


Fig.4 DC current gain vs. collector current (I)

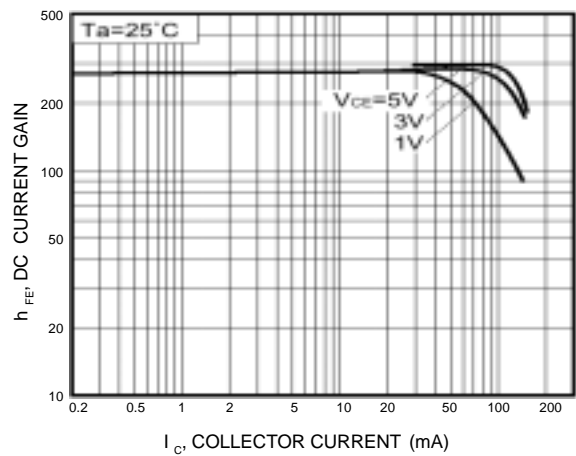


Fig.5 DC current gain vs. collector current (II)

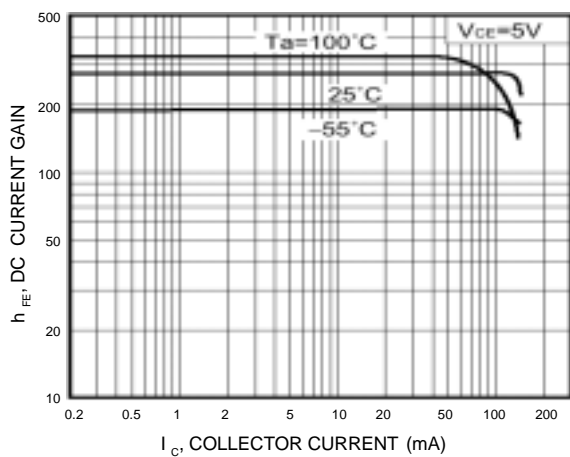
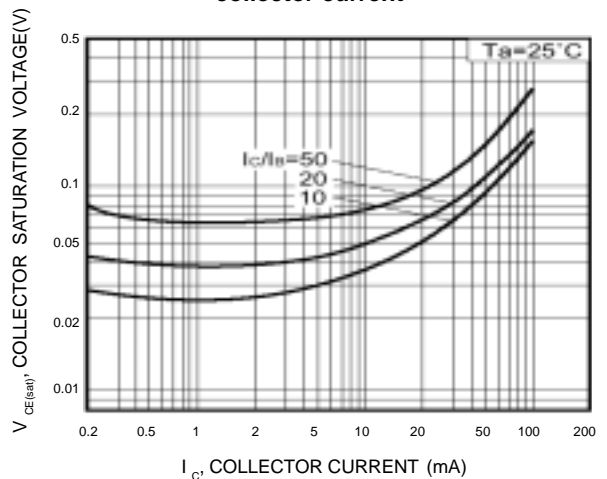
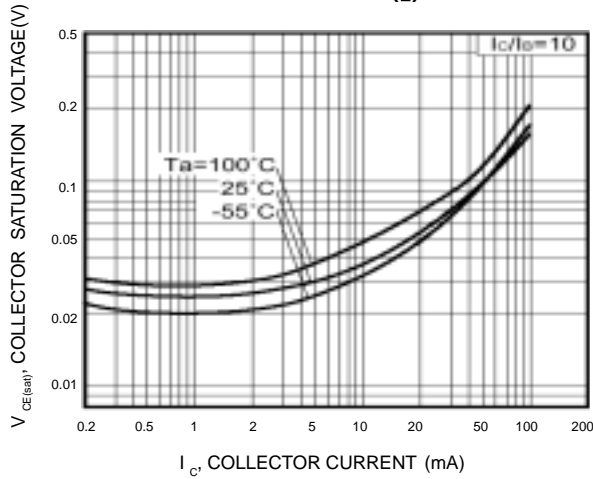


Fig.6 Collector-emitter saturation voltage vs. collector current

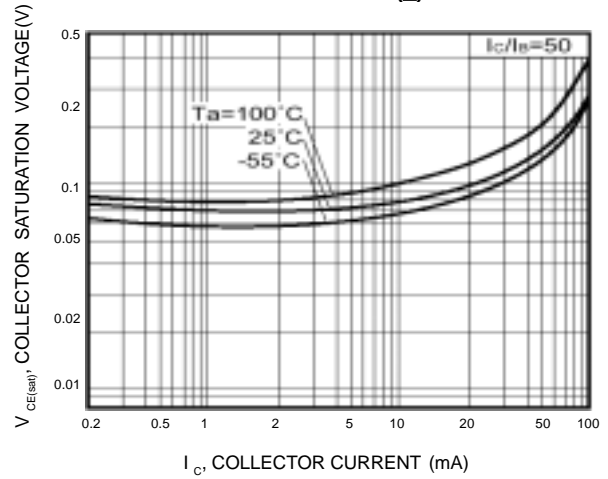


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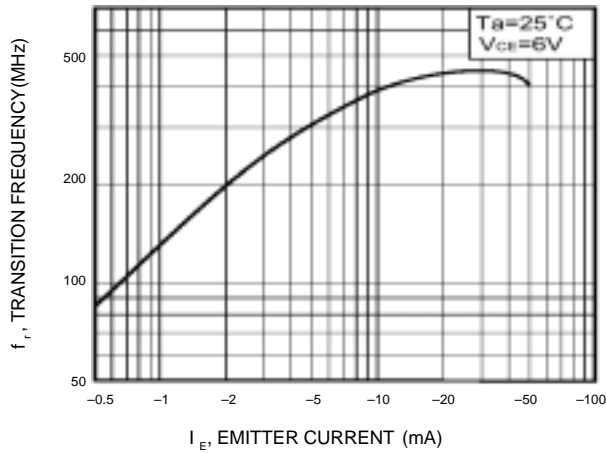
**Fig.7 Collector-emitter saturation voltage vs. collector current (I)**



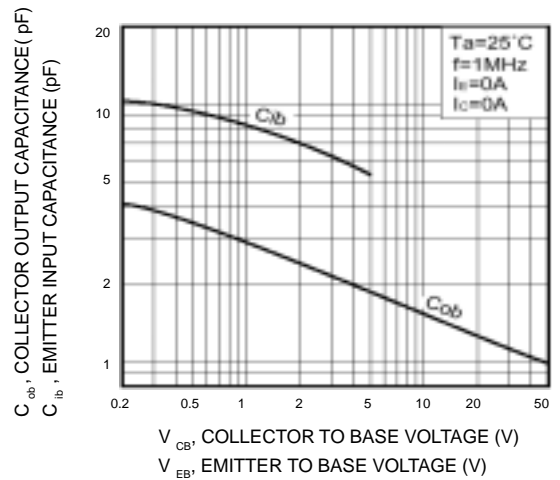
**Fig.8 Collector-emitter saturation voltage vs. collector current (II)**



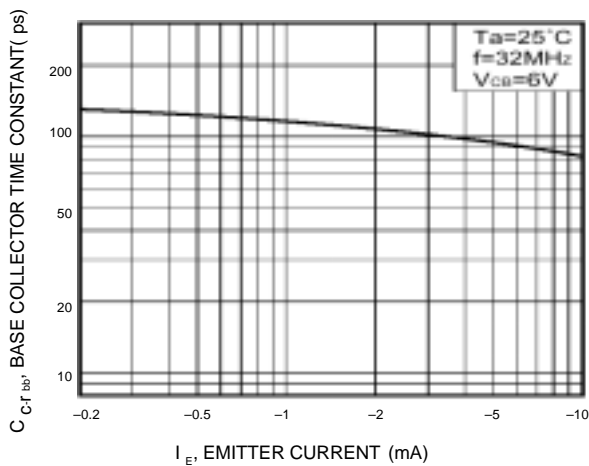
**Fig.9 Gain bandwidth product vs. emitter current**



**Fig.10 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage**

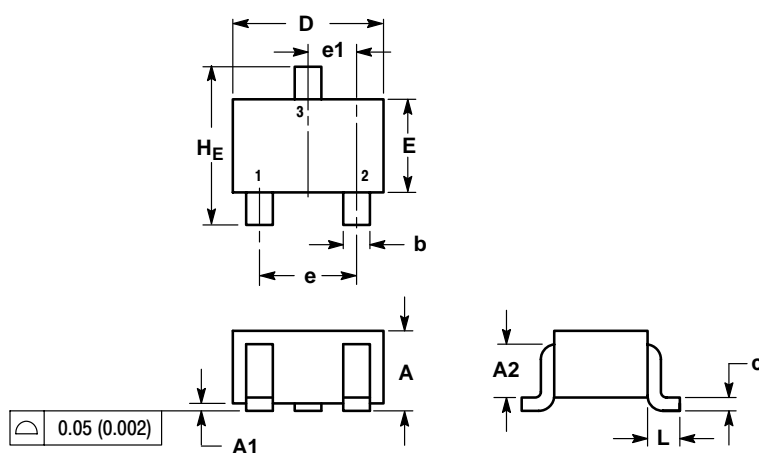


**Fig.11 Base-collector time constant vs. emitter current**



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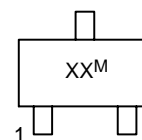
## SC-70 / SOT-323



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

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.032	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A2	0.7 REF			0.028 REF		
b	0.30	0.35	0.40	0.012	0.014	0.016
c	0.10	0.18	0.25	0.004	0.007	0.010
D	1.80	2.10	2.20	0.071	0.083	0.087
E	1.15	1.24	1.35	0.045	0.049	0.053
e	1.20	1.30	1.40	0.047	0.051	0.055
e1	0.65 BSC			0.026 BSC		
L	0.425 REF			0.017 REF		
HE	2.00	2.10	2.40	0.079	0.083	0.095

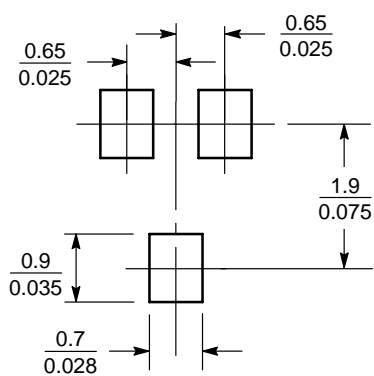
### GENERIC MARKING DIAGRAM



XX = Specific Device Code  
M = Date Code  
▪ = Pb-Free Package

\*This information is generic. Please refer to device data sheet for actual part marking. Pb-Free indicator, "G" or microdot "▪", may or may not be present.

### SOLDERING FOOTPRINT\*



SCALE 10:1 (mm/inches)