

General Purpose Transistors

-40V, -2A Low $V_{CE(sat)}$ PNP Silicon

FEATURES

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- Replacement for SOT89/SOT223 standard packaged transistors.
- 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.

APPLICATIONS

- Supply line switching circuits
- Battery management applications
- DC/DC converter applications
- Strobe flash units
- Heavy duty battery powered equipment (motor and lamp drivers).

DESCRIPTION

PNP low V_{CEsat} transistor in a SOT23 plastic package.
NPN complement: LBSS4240LT1G.

ORDERING INFORMATION

Device	Marking	Shipping
LBSS5240LT1G S-LBSS5240LT1G	ZF	3000/Tape & Reel
LBSS5240LT3G S-LBSS5240LT3G	ZF	10000/Tape & Reel

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector–Emitter Voltage	V_{CEO}	-40	V
Collector–Base Voltage	V_{CBO}	-40	V
Emitter–Base Voltage	V_{EBO}	-5.0	V
Collector Current — Continuous	I_C	-2	A
power dissipation	P_D	0.3	W
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	-65 ~ +150	°C

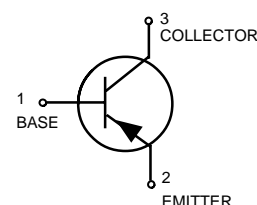
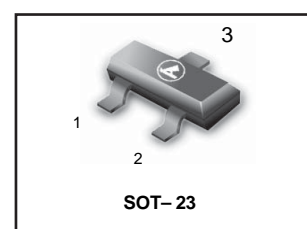
THERMAL CHARACTERISTICS

Symbol	Parameter	Conditions	Value	Unit
$R_{th(j-a)}$	thermal resistance from junction to ambient	in free air;note 1	417	K/W
		in free air;note 2	260	K/W

Notes:

- 1.Device mounted on a printed-circuit board,single sided copper,tinplated and standard footprint.
- 2.Device mounted on a printed-circuit board,single sided copper,tinplated and mounted pad for collector 1 cm²

LBSS5240LT1G
S-LBSS5240LT1G



LBSS5240LT1G,S-LBSS5240LT1G
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted.)

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
I_{CBO}	collector-base cut-off current	$V_{CB} = -30\text{ V}; I_E = 0$	–	–100	nA
I_{EBO}	emitter-base cut-off current	$V_{BE} = -4\text{ V}; I_C = 0$	–	–100	nA
h_{FE}	DC current gain	$V_{CE} = -2\text{ V}$ $I_C = -100\text{ mA}$ $I_C = -500\text{ mA}$ $I_C = -1\text{ A}$ $I_C = -2\text{ A}$	300 260 210 100	– – – –	
V_{CEsat}	collector-emitter saturation voltage	$I_C = -100\text{ mA}; I_B = -1\text{ mA}$ $I_C = -500\text{ mA}; I_B = -50\text{ mA}$ $I_C = -750\text{ mA}; I_B = -15\text{ mA}$ $I_C = -1\text{ A}; I_B = -50\text{ mA}$ $I_C = -2\text{ A}; I_B = -200\text{ mA}$	– – – – –	–100 –110 –225 –225 –350	mV mV mV mV mV
V_{BEsat}	base-emitter saturation voltage	$I_C = -2\text{ A}; I_B = -200\text{ mA}$	–	–1.1	V
$V_{BE(on)}$	base-emitter turn-on voltage	$V_{CE} = -2\text{ V}; I_C = -100\text{ mA}$	–	–0.75	V
f_T	transition frequency	$I_C = -100\text{ mA}; V_{CE} = -10\text{ V};$ $f = 100\text{ MHz}$	100	–	MHz
C_c	collector capacitance	$V_{CB} = -10\text{ V}; I_E = I_e = 0;$ $f = 1\text{ MHz}$	–	28	pF

LBSS5240LT1G,S-LBSS5240LT1G

ELECTRICAL CHARACTERISTIC CURVES
(Ta = 25°C)

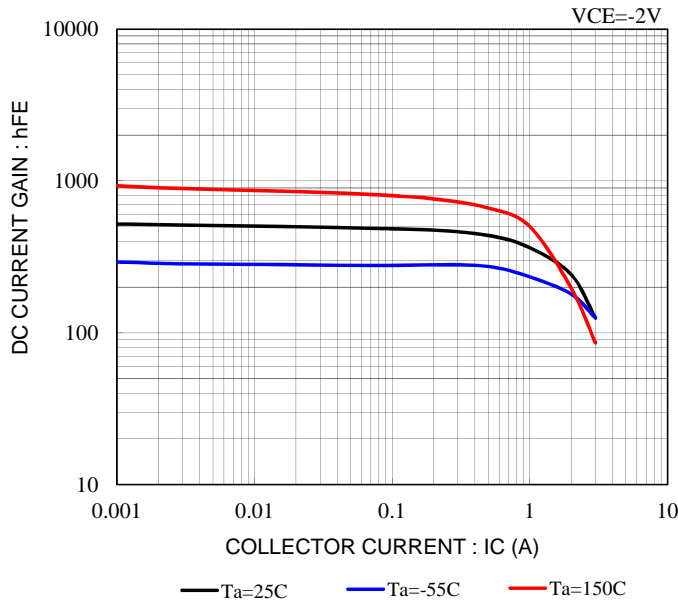


Fig.1 DC CURRENT GAIN VS.COLLECTOR CURRENT

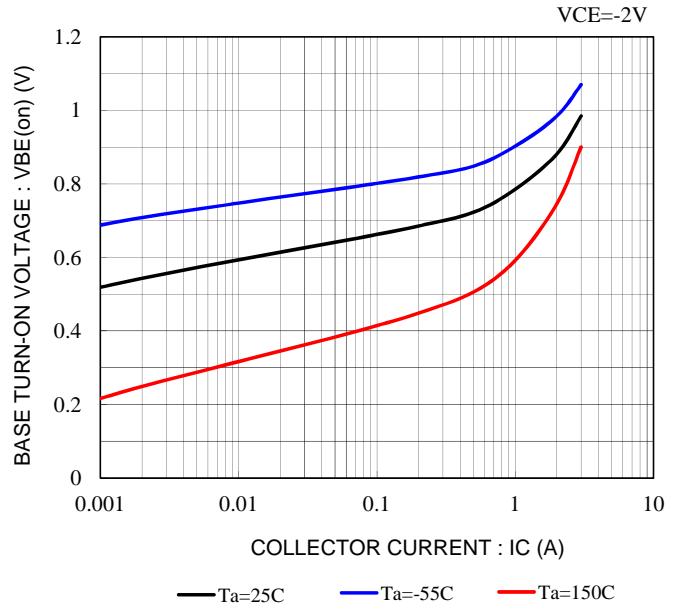


Fig.2 BASE-EMITTER TURN-ON VOLTAGE VS.COLLECTOR CURRENT

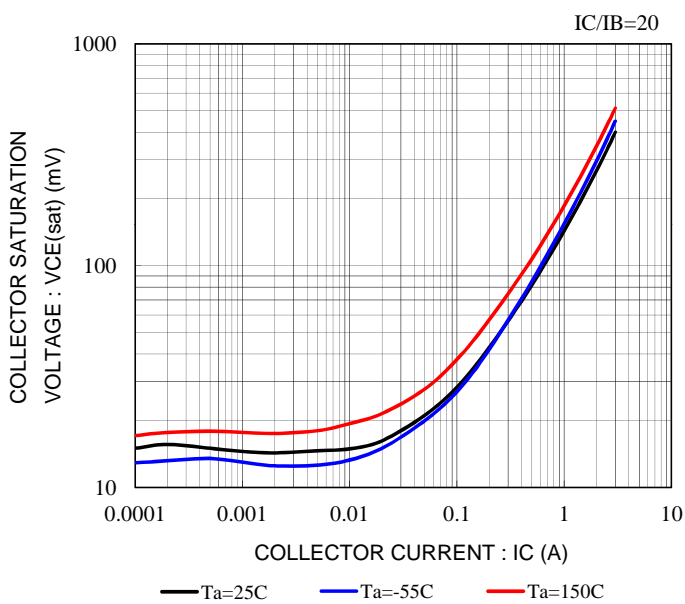


Fig.3 COLLECTOR-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

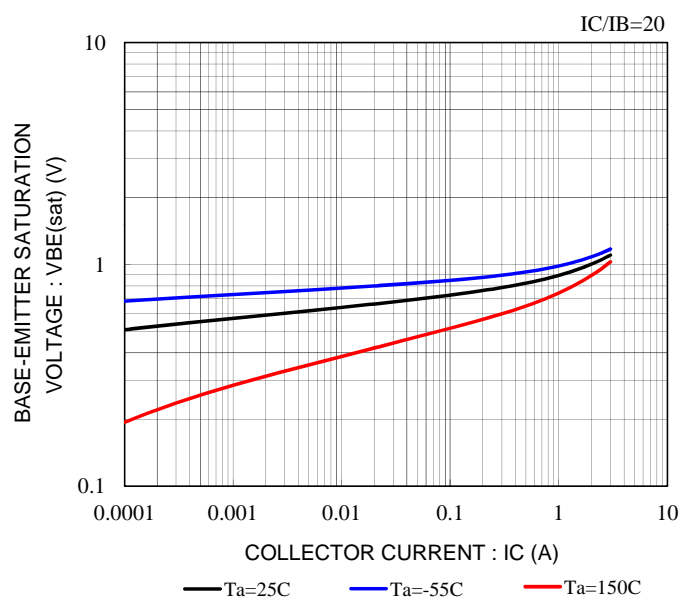


Fig.4 BASE-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

LBSS5240LT1G,S-LBSS5240LT1G

ELECTRICAL CHARACTERISTIC CURVES
($T_a = 25^\circ\text{C}$)

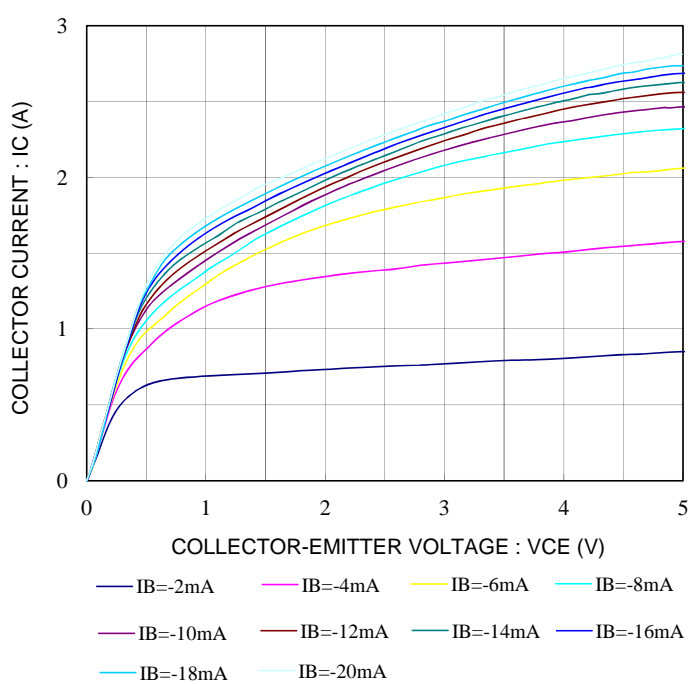


Fig.5 COLLECTOR CURRENT VS.COLLECTOR-EMITTER SATURATION VOLTAGE

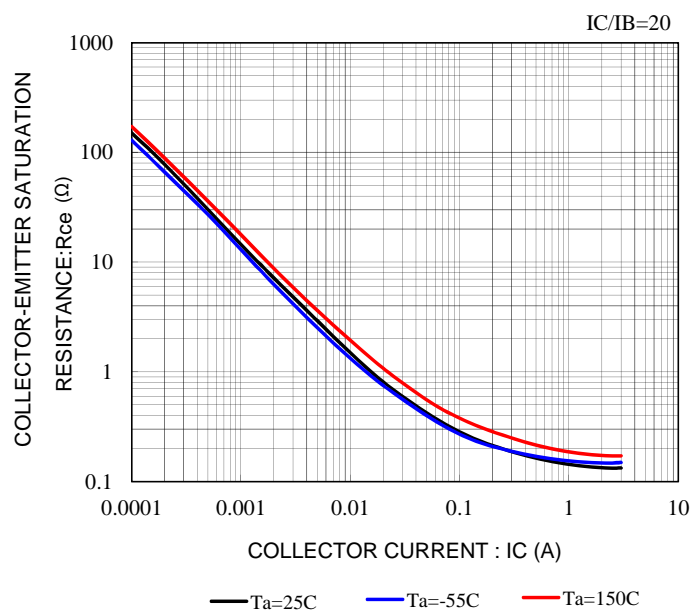


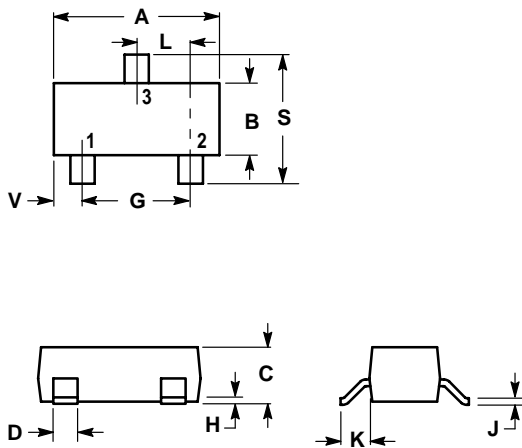
Fig.6 COLLECTOR-EMITTER SATURATION RESISTANCE VS.COLLECTOR CURRENT

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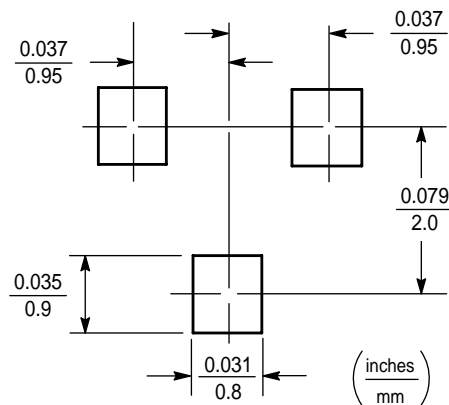
SOT-23

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



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