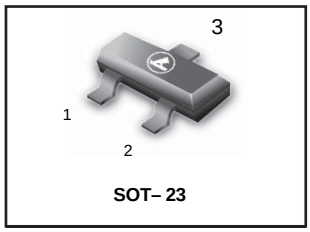
General Purpose Transistors

-40V,-2A Low VCE(sat) PNP Silicon

LBSS5240LT1G
S-LBSS5240LT1G



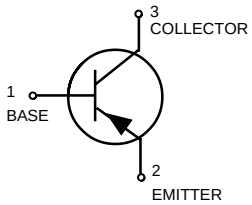
SOT– 23

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 cm^2

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ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted.)

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

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ELECTRICAL CHARACTERISTIC CURVES
(Ta = 25°C)

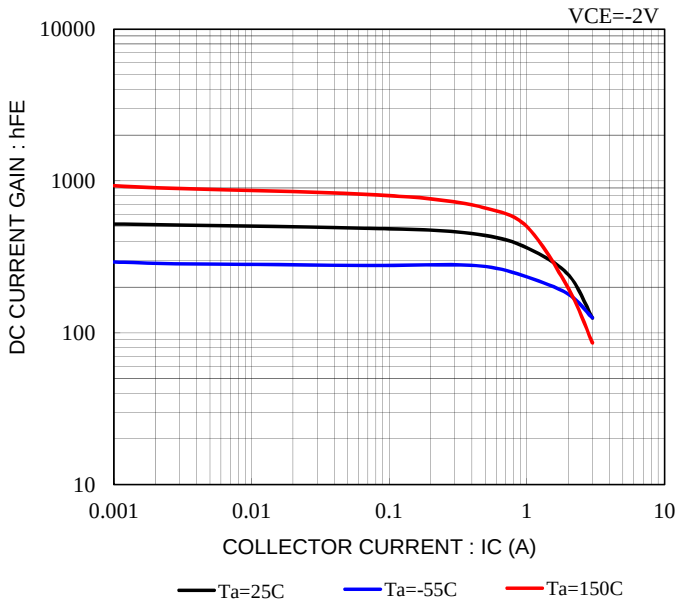

Fig.1 DC CURRENT GAIN VS.COLLECTOR CURRENT

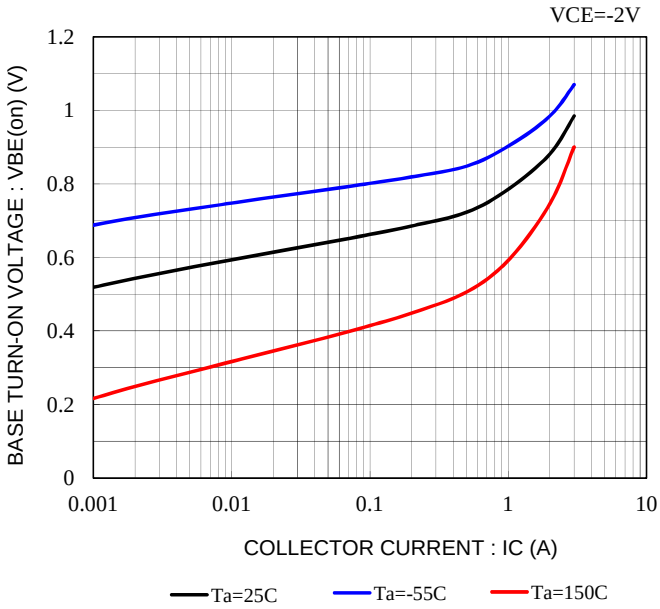

Fig.2 BASE-EMITTER TURN-ON VOLTAGE VS.COLLECTOR CURRENT

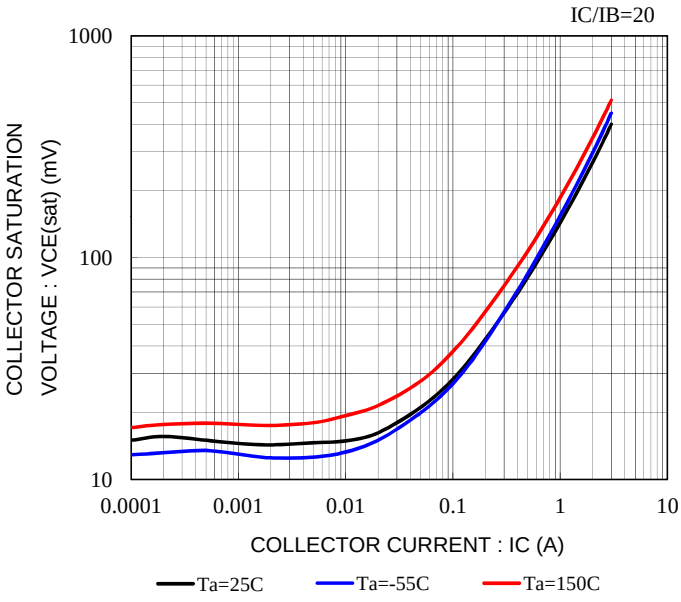

Fig.3 COLLECTOR-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

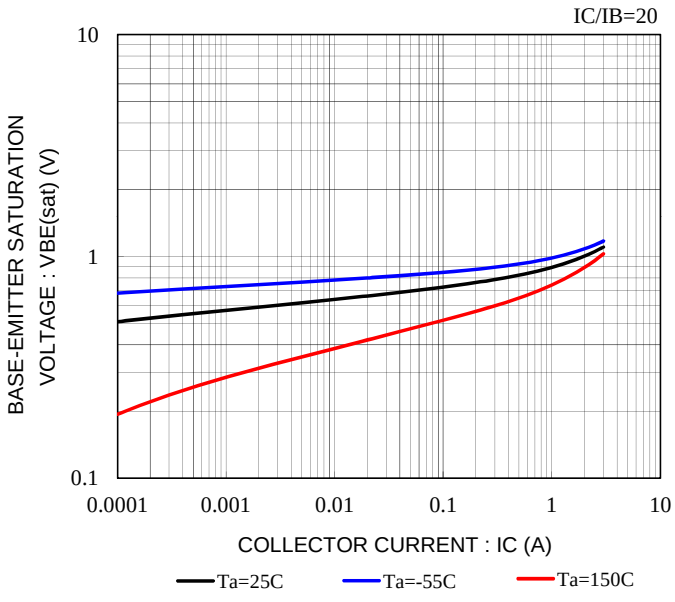

Fig.4 BASE-EMITTER SATURATION VOLTAGE VS.COLLECTOR CURRENT

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ELECTRICAL CHARACTERISTIC CURVES
(Ta = 25°C)

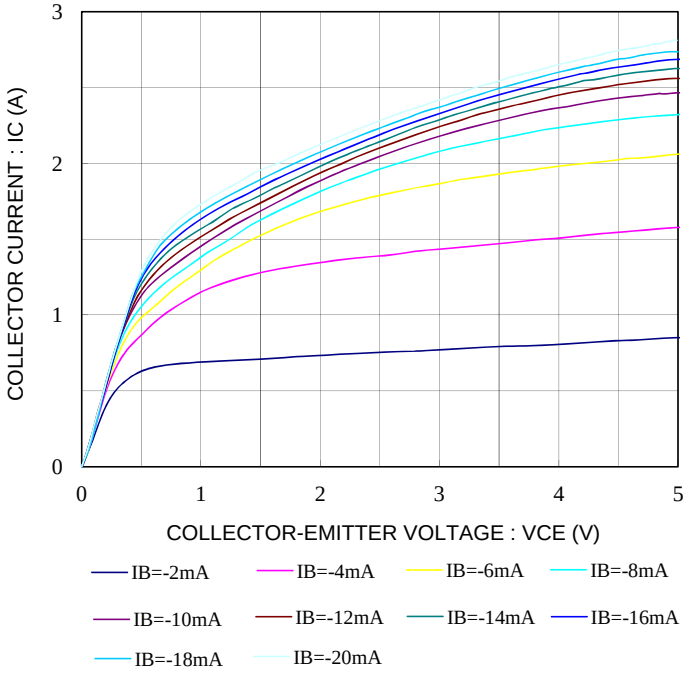

Fig.5 COLLECTOR CURRENT VS.COLLECTOR-EMITTER SATURATION VOLTAGE

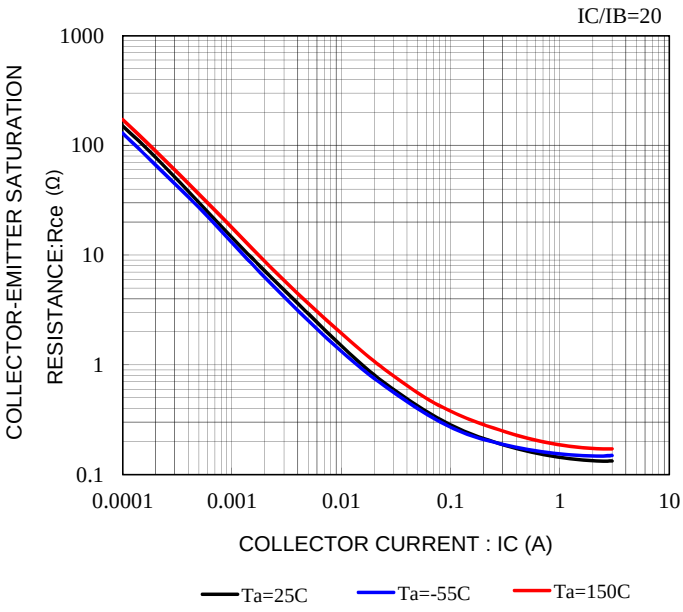

Fig.6 COLLECTOR-EMITTER SATURATION RESISTANCE VS.COLLECTOR CURRENT

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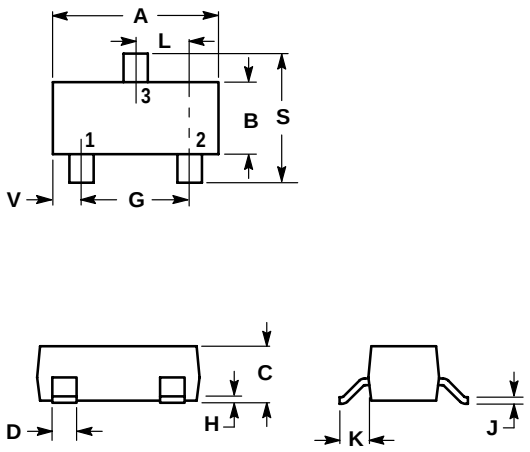

NOTES:

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