

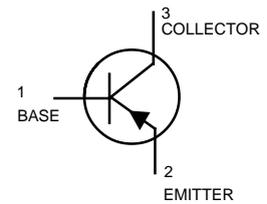
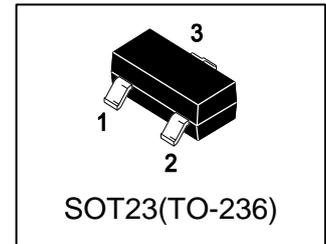
LMBT4403LT1G

S-LMBT4403LT1G

General Purpose Transistors PNP Silicon

1. FEATURES

- 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 ORDERING INFORMATION

Device	Marking	Shipping
LMBT4403LT1G	2T	3000/Tape&Reel
LMBT4403LT3G	2T	13000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25°C)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	V _{CEO}	-40	V
Collector–Base Voltage	V _{CBO}	-40	V
Emitter–Base Voltage	V _{EBO}	-5	V
Collector Current — Continuous	I _C	-600	mA

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR-5 Board (Note 1) @ TA = 25°C Derate above 25°C	PD	225 1.8	mW mW/°C
Thermal Resistance, Junction–to–Ambient(Note 1)	R _{θJA}	556	°C/W
Total Device Dissipation, Alumina Substrate(Note 2) @ TA = 25°C Derate above 25°C	PD	300 2.4	mW mW/°C
Thermal Resistance, Junction–to–Ambient(Note 2)	R _{θJA}	417	°C/W
Junction and Storage temperature	T _J , T _{stg}	-55~+150	°C

1. FR-5 = 1.0×0.75×0.062 in.

2. Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.

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

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = -1.0 mA, IB = 0)	VBR(CEO)	-40	-	-	V
Collector–Base Breakdown Voltage (IC = -0.1 mA, IE = 0)	VBR(CBO)	-40	-	-	V
Emitter–Base Breakdown Voltage (IE = -0.1 mA, IC = 0)	VBR(EBO)	-5	-	-	V
Base Cutoff Current (VCE = -35 V, VEB = -0.4V)	IBEV	-	-	-0.1	μA
Collector Cutoff Current VCE = -35 V, VEB = -0.4V)	ICEX	-	-	-0.1	μA
Collector-Emitter cutoff Current (IB=0, VCE=-30V)	ICEO	-	-	-10	μA
Collector Cutoff Current (VCB = -60 V, IE = 0)	ICBO	-	-	-100	nA
Emitter Cut-off Current (VEB = -6V, IC = 0)	IEBO	-	-	-100	nA

ON CHARACTERISTICS

DC Current Gain (IC = -0.1 mA, VCE = -1.0 V)	hFE	30	-	-	
(IC = -1.0 mA, VCE = -1.0 V)		60	-	-	
(IC = -10 mA, VCE = -1.0 V)		100	-	-	
(IC = -150 mA, VCE = -2.0 V)		100	-	300	
(IC = -500 mA, VCE = -2.0 V)		20	-	-	
Collector–Emitter Saturation Voltage (IC = -150 mA, IB = -15 mA)	VCE(sat)	-	-	-0.4	V
(IC = -500 mA, IB = -50 mA)		-	-	-0.75	
Base–Emitter Saturation Voltage (IC = -150 mA, IB = -15 mA)	VBE(sat)	-0.75	-	-0.95	V
(IC = -500 mA, IB = -50 mA)		-	-	-1.3	

SMALL–SIGNAL CHARACTERISTICS

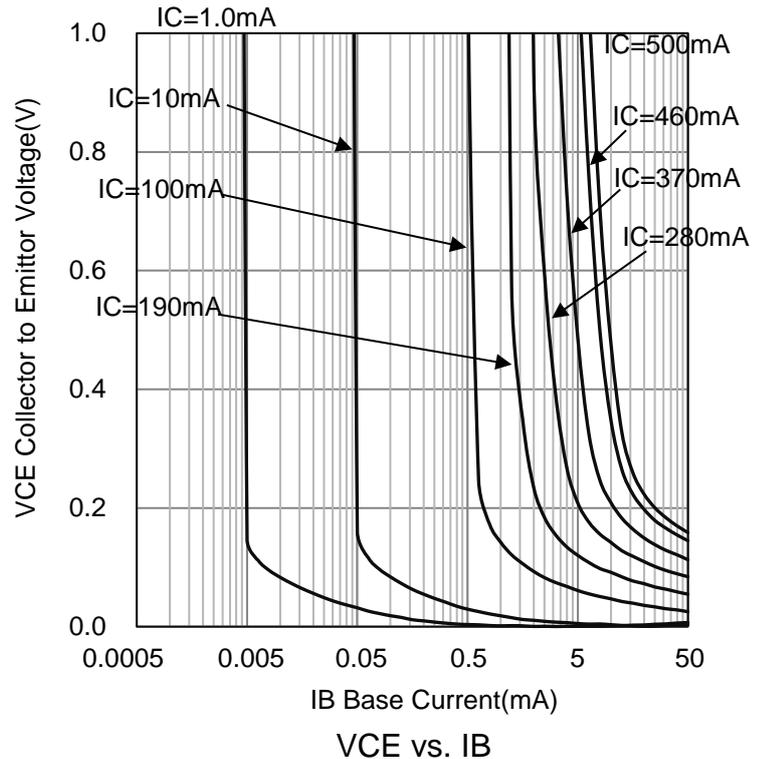
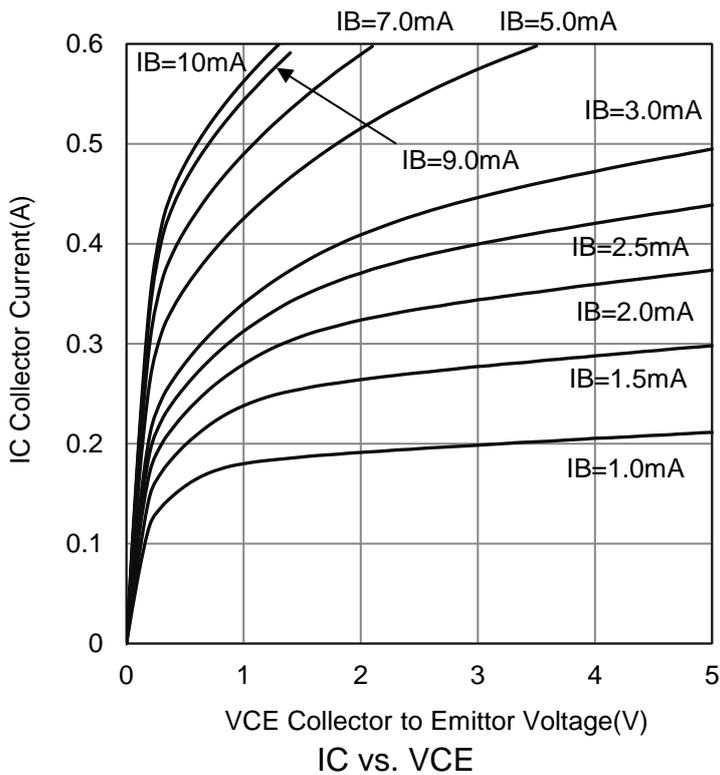
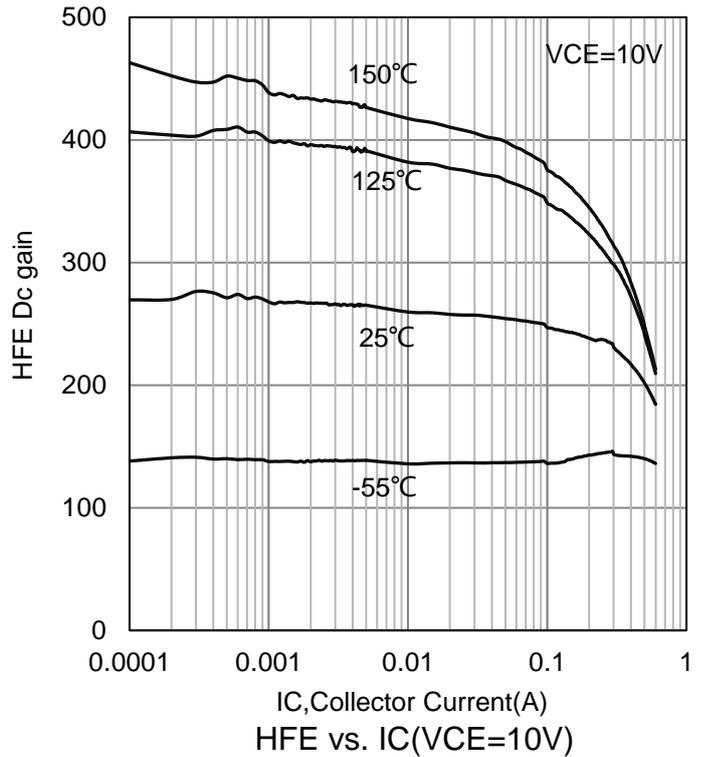
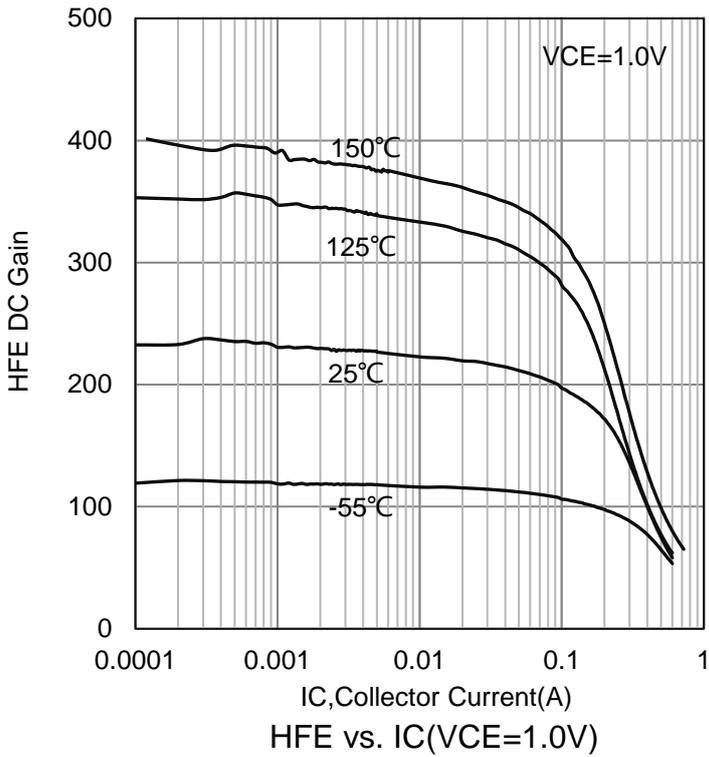
Current–Gain — Bandwidth Product (IC = -20mA, VCE = -10 V, f = 100 MHz)	fT	200	-	-	MHz
Collector–Base Capacitance (VCB = -10 V, IE = 0, f = 1.0 MHz)	Ccb	-	-	8.5	pF
Emitter–Base Capacitance (VBE = -0.5 V, IC = 0, f = 1.0 MHz)	Ceb	-	-	30	pF
Small–Signal Current Gain (VCE = -10 V, IC = -1.0 mA, f = 1.0 kHz)	hfe	60	-	500	-

SWITCHING CHARACTERISTICS

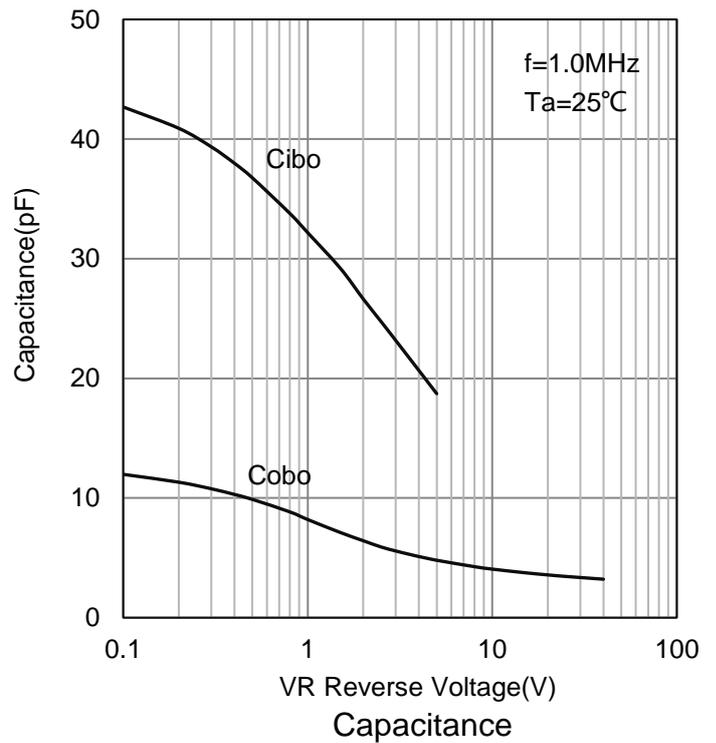
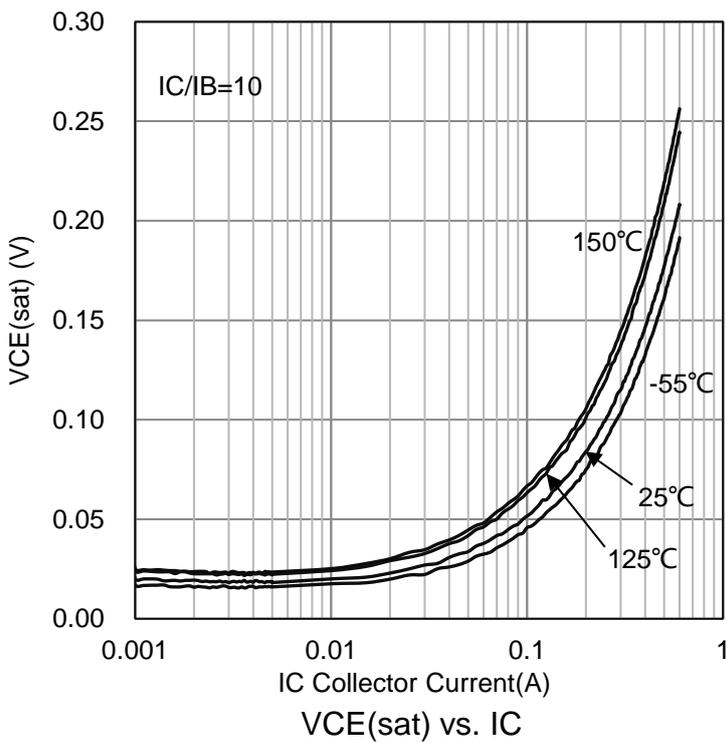
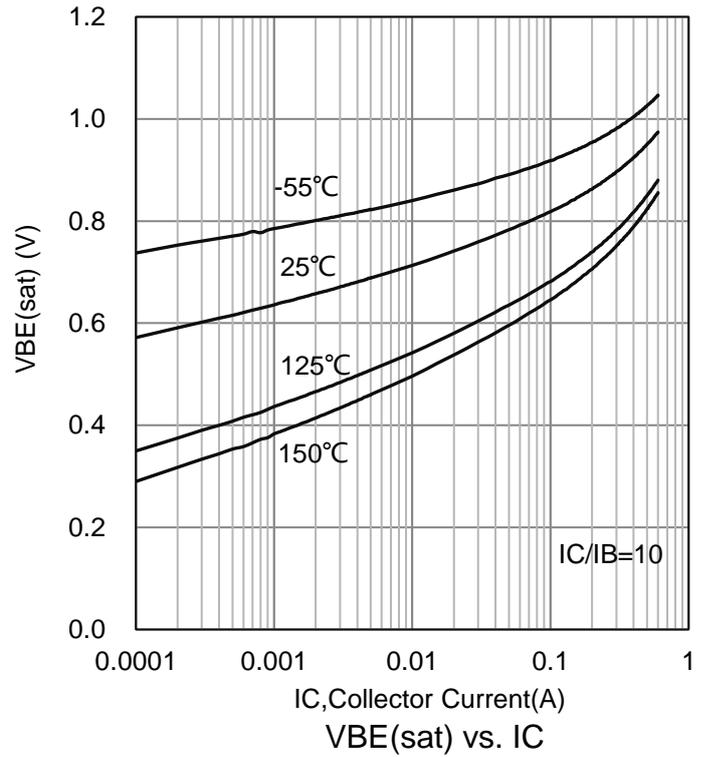
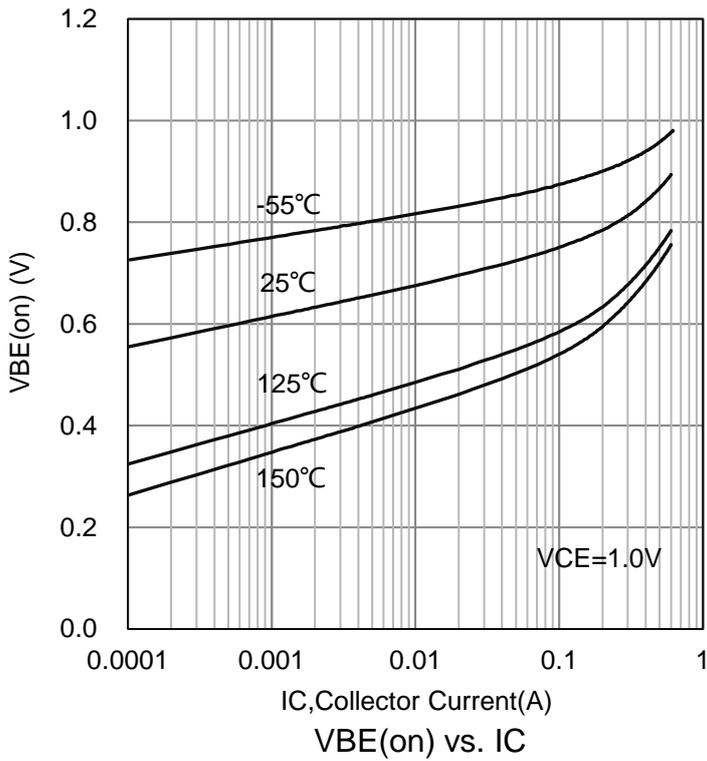
Delay Time	(VCC=-30V, VEB=-2.0V , IC=-150mA, IB1=-15mA)	td	-	-	15	ns
Rise Time		tr	-	-	20	
Storage Time	(VCC = -30 V, IC=-150 mA, IB1=IB2=-15 mA)	ts	-	-	225	
Fall Time		tf	-	-	30	

3. Pulse Test: Pulse Width ≤ 300 μs, Duty Cycle ≤ 2.0%.

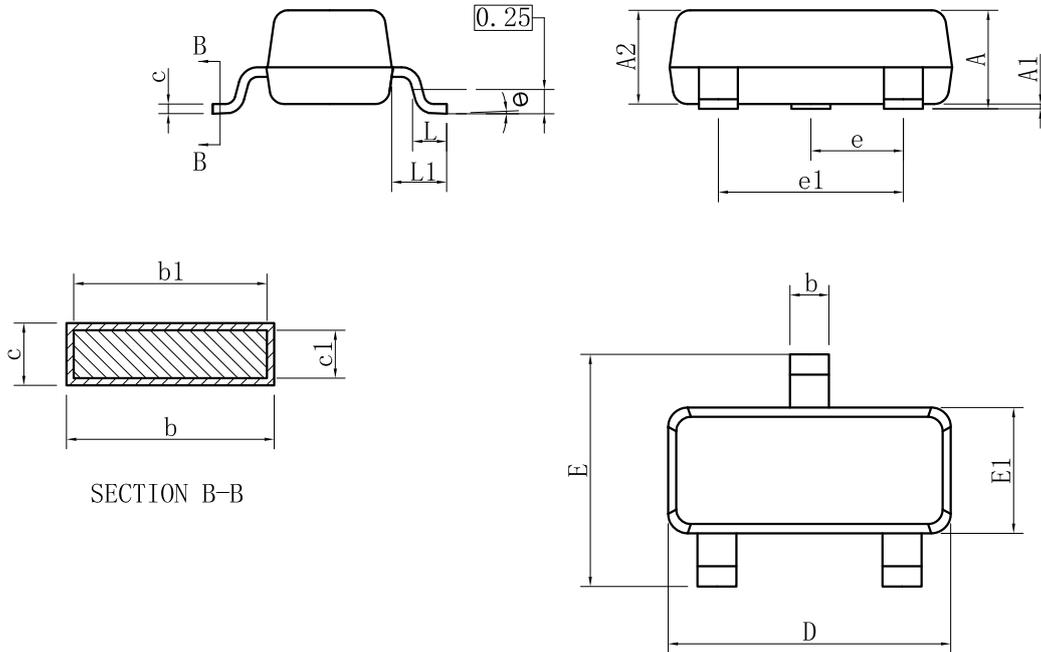
6.ELECTRICAL CHARACTERISTICS CURVES



6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



7. OUTLINE AND DIMENSIONS

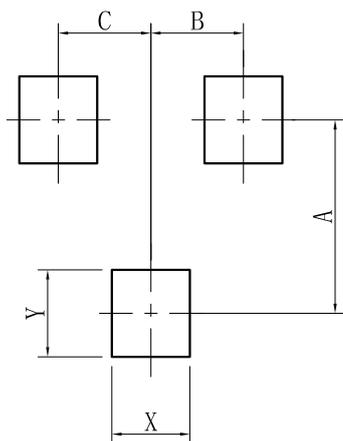


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish $Ra0.4 \pm 0.2 \mu m$
2. Bottom package surface finish $Ra0.7 \pm 0.2 \mu m$
3. Side package surface finish $Ra0.4 \pm 0.2 \mu m$

8. SOLDERING FOOTPRINT



SOT-23	
DIM	(mm)
X	0.80
Y	0.90
A	2.00
B	0.95
C	0.95

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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