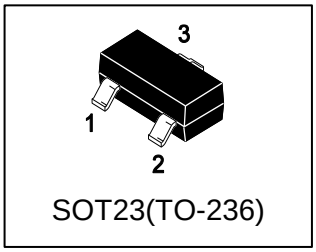
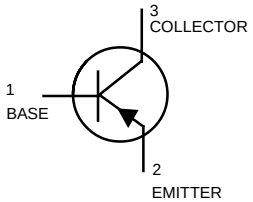
LMBT4403LT1G
S-LMBT4403LT1G

General Purpose Transistors PNP Silicon



SOT23(TO-236)



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	10000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	-40	V
Collector–Base Voltage	VCBO	-40	V
Emitter–Base Voltage	VEBO	-5	V
Collector Current — Continuous	IC	-600	mA

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 1) @ TA = 25ºC Derate above 25ºC	PD	 225 1.8	 mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	556	ºC/W
Total Device Dissipation, Alumina Substrate(Note 2) @ TA = 25ºC Derate above 25ºC	PD	 300 2.4	 mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 2)	RΘJA	417	ºC/W
Junction and Storage temperature	TJ,Tstg	−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

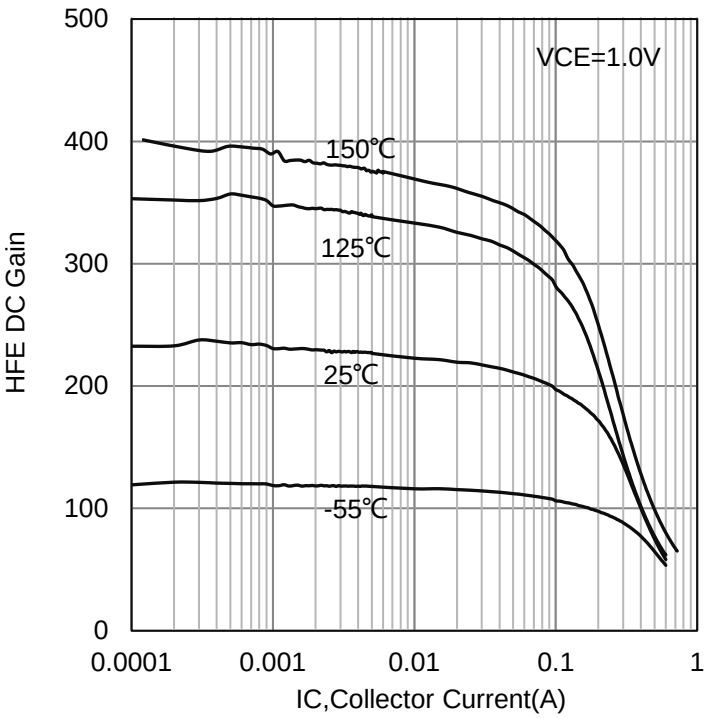
Current–Gain — Bandwidth Product (IC = –20mA, VCE = –10 V, f = 100 MHz)	fT	200	-	-	MHz
Collector–Base Capacitance (VCB = –10 V, IE = 0, f = 1.0 MHz)	Ccb	-	-	8.5	pF
Emitter–Base Capacitance (VBE = –0.5 V, IC = 0, f = 1.0 MHz)	Ceb	-	-	30	pF
Small–Signal Current Gain (VCE = –10 V, IC = –1.0 mA, f = 1.0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

SWITCHING CHARACTERISTICS

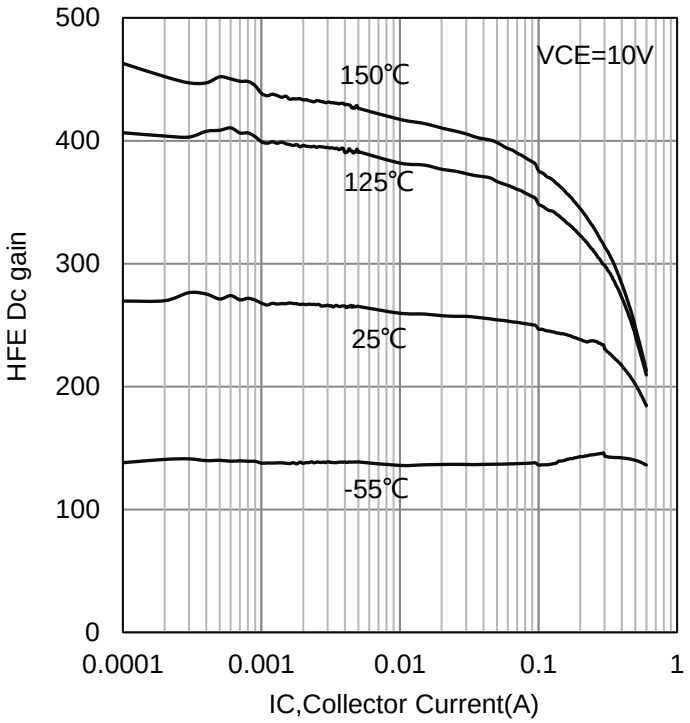
Delay Time	(VCC=– 30V,VEB=–2.0V ,IC=–150mA,IB1=–15mA)	td	-	-	15	ns
Rise Time		tr	-	-	20	
Storage Time	(VCC = –30 V,IC=–150 mA, IB1=IB2=–15 mA)	ts	-	-	225	
Fall Time		tf	-	-	30	

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

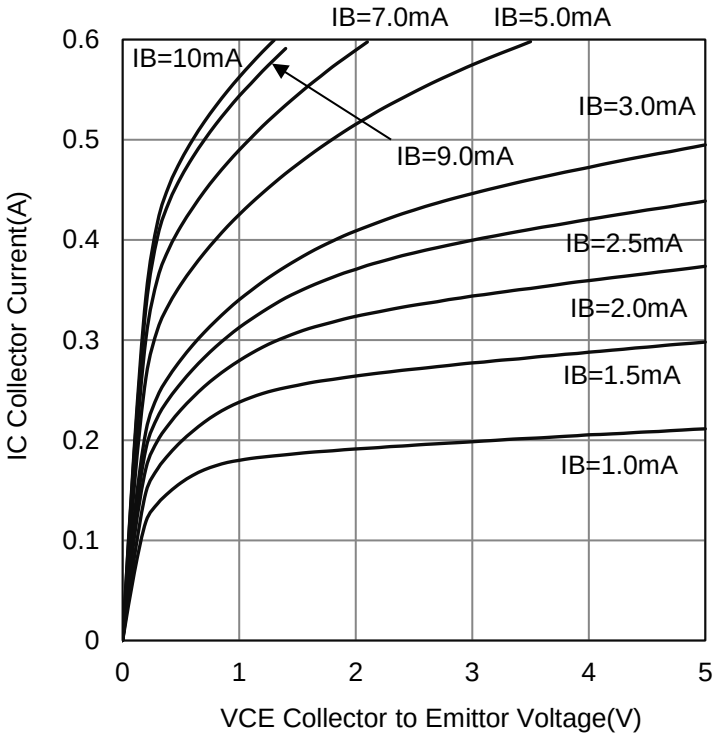
6.ELECTRICAL CHARACTERISTICS CURVES



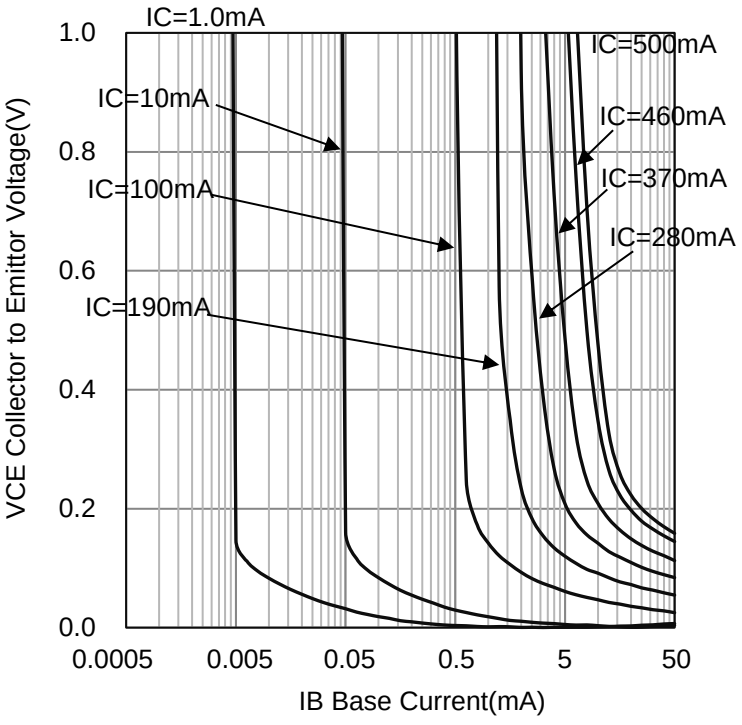
HFE vs. IC(VCE=1.0V)



HFE vs. IC(VCE=10V)

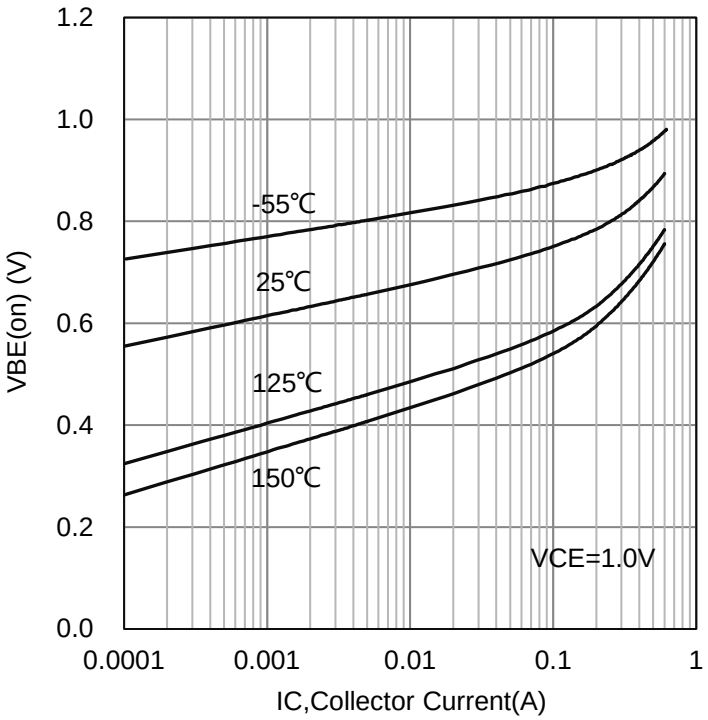


IC vs. VCE

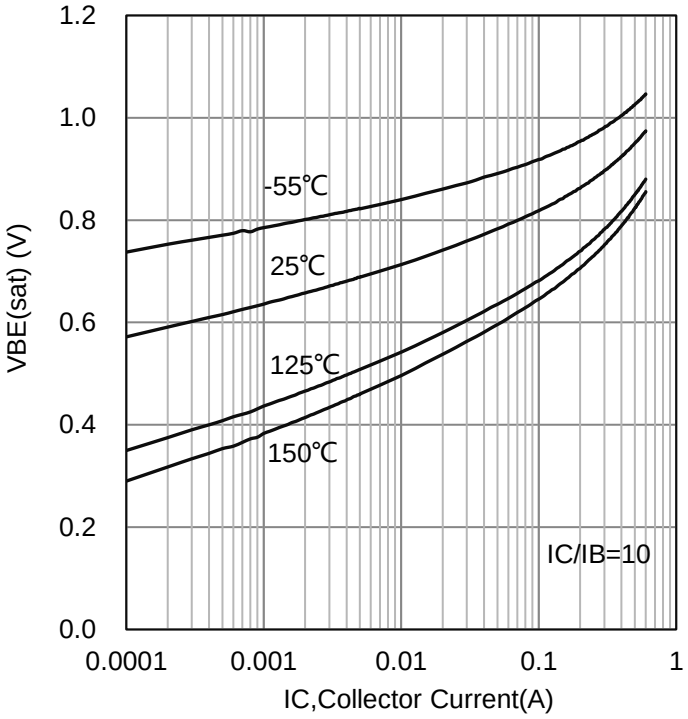


VCE vs. IB

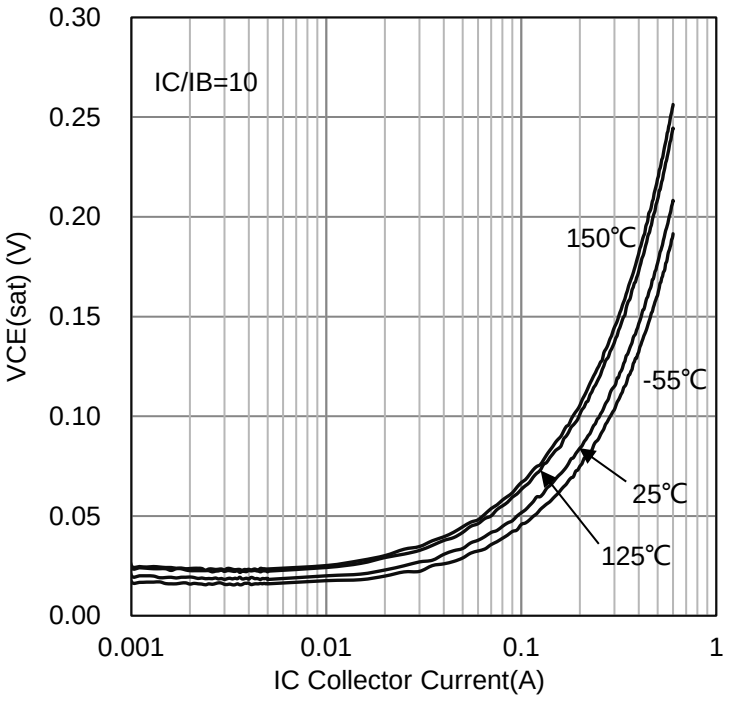
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



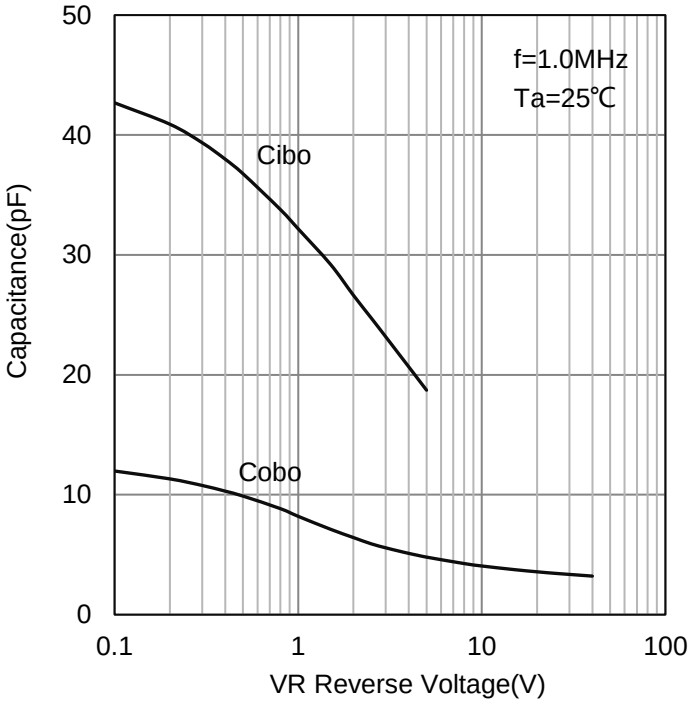
VBE(on) vs. IC



VBE(sat) vs. IC

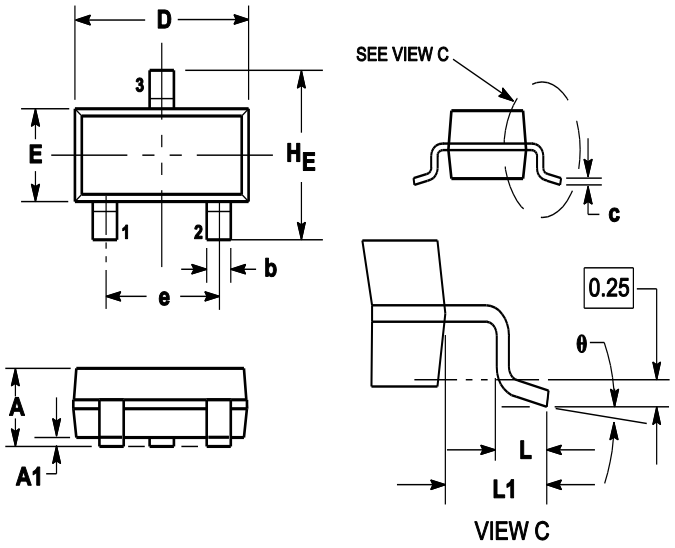


VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

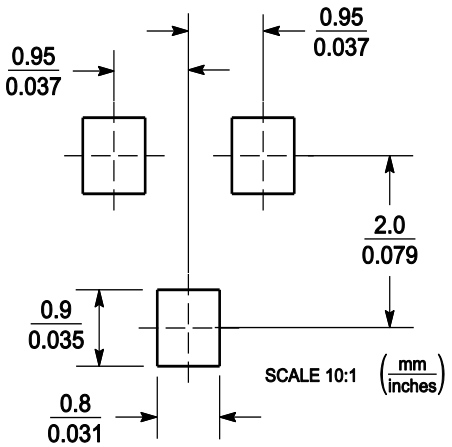


Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

	MILLIMETERS			INCHES		
DIM	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1	1.11	0.035	0.04	0.044
A1	0.01	0.06	0.1	0.001	0.002	0.004
b	0.37	0.44	0.5	0.015	0.018	0.02
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.9	3.04	0.11	0.114	0.12
E	1.20	1.3	1.4	0.047	0.051	0.055
e	1.78	1.9	2.04	0.07	0.075	0.081
L	0.10	0.2	0.3	0.004	0.008	0.012
L1	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.4	2.64	0.083	0.094	0.104
θ	0°	---	10°	0°	---	10°

8.SOLDERING FOOTPRINT



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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