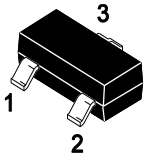
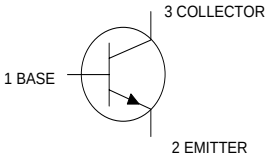
LMBT491NELT1G
S-LMBT491NELT1G

60V NPN MEDIUM POWER TRANSISTOR



SOT23(TO-236)



1. FEATURES

- BVCEO > 60V
- IC = 1A Continuous Collector Current
- ICM = 2A Peak Pulse Current
- Low Equivalent On-Resistance
- 500mW Power Dissipation
- 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
LMBT491NELT1G	91N	3000/Tape&Reel
LMBT491NELT3G	91N	10000/Tape&Reel

3. MAXIMUM RATINGS(Ta = 25ºC)

Parameter	Symbol	Limits	Unit
Collector–Emitter Voltage	VCEO	60	V
Collector–Base Voltage	VCBO	80	V
Emitter–Base Voltage	VEBO	7	V
Collector Current — Continuous	IC	1	A
Peak Pulse Current	ICM	2	A
Base Current	IB	200	mA

4. THERMAL CHARACTERISTICS

Parameter	Symbol	Limits	Unit
Total Device Dissipation, FR−5 Board (Note 1) @ TA = 25ºC Derate above 25ºC	PD	 500 4	 mW mW/ºC
Thermal Resistance, Junction–to–Ambient(Note 1)	RΘJA	250	ºC/W
Junction and Storage temperature	TJ,Tstg	−55~+150	ºC

1. FR–5 = 1.0×0.75×0.062 in.

5. ELECTRICAL CHARACTERISTICS (Ta= 25°C)

OFF CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Collector–Emitter Breakdown Voltage (IC = 10 mA, IB = 0)	VBR(CEO)	60	-	-	V
Collector–Base Breakdown Voltage (IC = 100 μA, IE = 0)	VBR(CBO)	80	-	-	V
Emitter–Base Breakdown Voltage (IE = 100 μA, IC = 0)	VBR(EBO)	7	8.1	-	V
Collector Cutoff Current (VCB=60V)	ICBO	-	-	100	nA
Emitter Cutoff Current (VEB = 5.6V)	IEBO	-	-	100	nA
Collector Emitter Cutoff Current (VCE = 60V, VCES = 60V)	ICES	-	-	100	nA

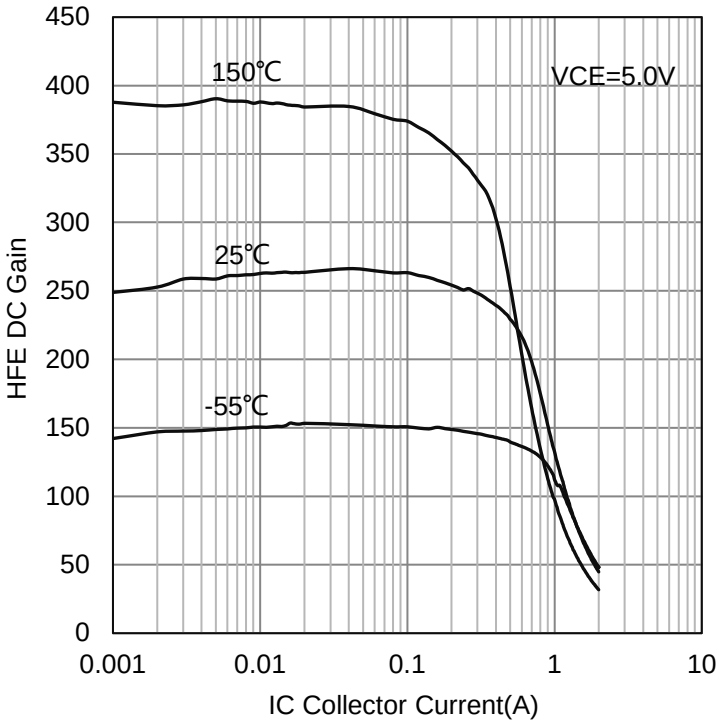
ON CHARACTERISTICS

Static Forward Current Transfer Ratio (IC = 1mA, VCE = 5V) (IC = 500mA, VCE = 5V) (IC = 1A, VCE = 5V) (IC = 2A, VCE = 5V)	HFE	 100 100 80 30	 140 150 120 40	 - 300 - -	
Collector–Emitter Saturation Voltage (IC = 500mA, IB = 50mA) (IC = 1A, IB = 100mA)	VCE(sat)	 - -	 - -	 150 250	mV
Base-Emitter Turn-On Voltage (IC = 1A, VCE = 5V)	VBE(on)	-	-	1	V
Base–Emitter Saturation Voltage (IC = 1A, IB = 100mA)	VBE(sat)	-	-	1.1	V

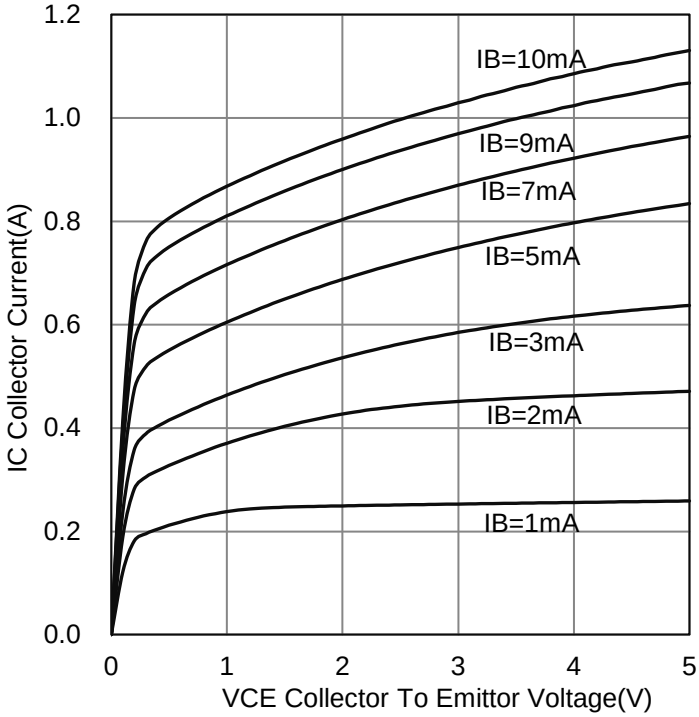
SMALL–SIGNAL CHARACTERISTICS

Transition Frequency (VCE = 10V, IC = 50mA,f = 100MHz)	fT	150	-	-	MHz
Output Capacitance (VCB = 10V, f = 1MHz)	Cobo	-	-	10	pF

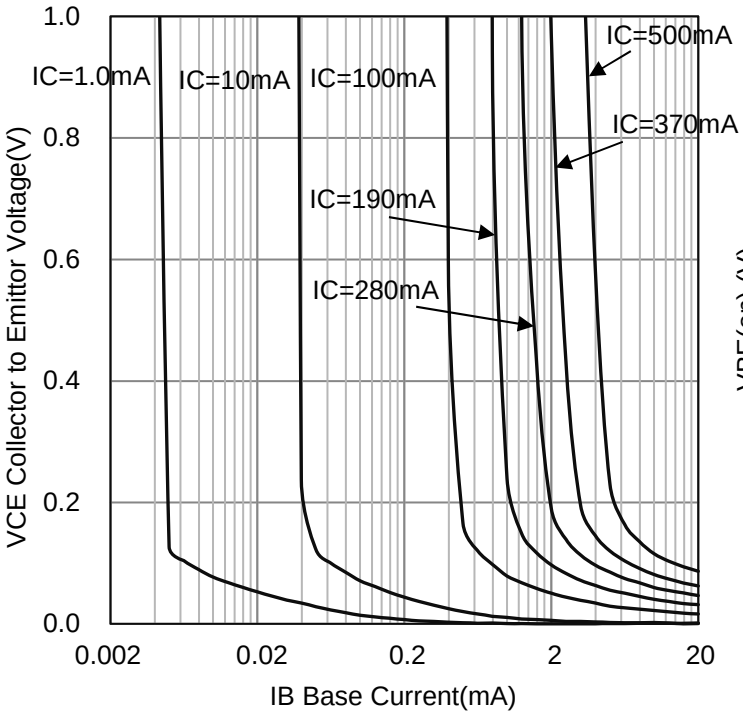
6.ELECTRICAL CHARACTERISTICS CURVES



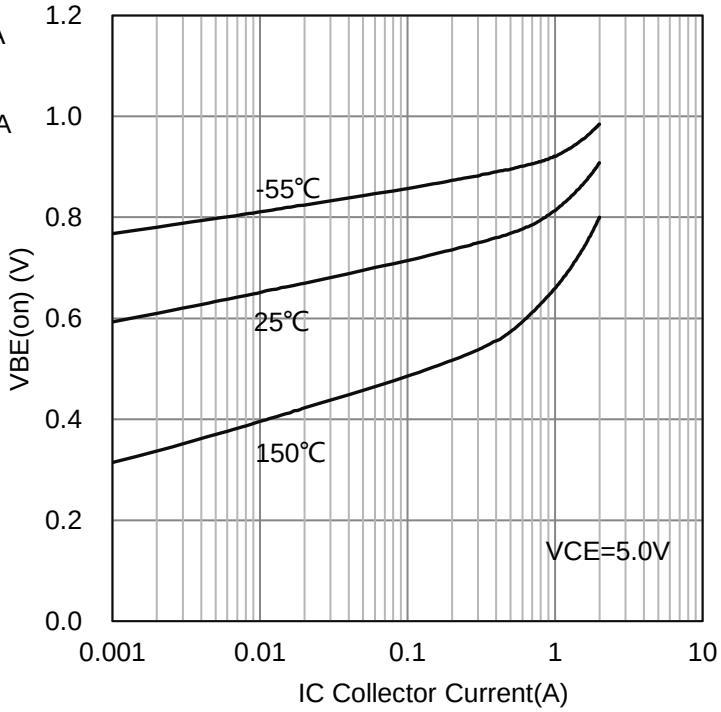
HFE vs. IC



IC vs. VCE

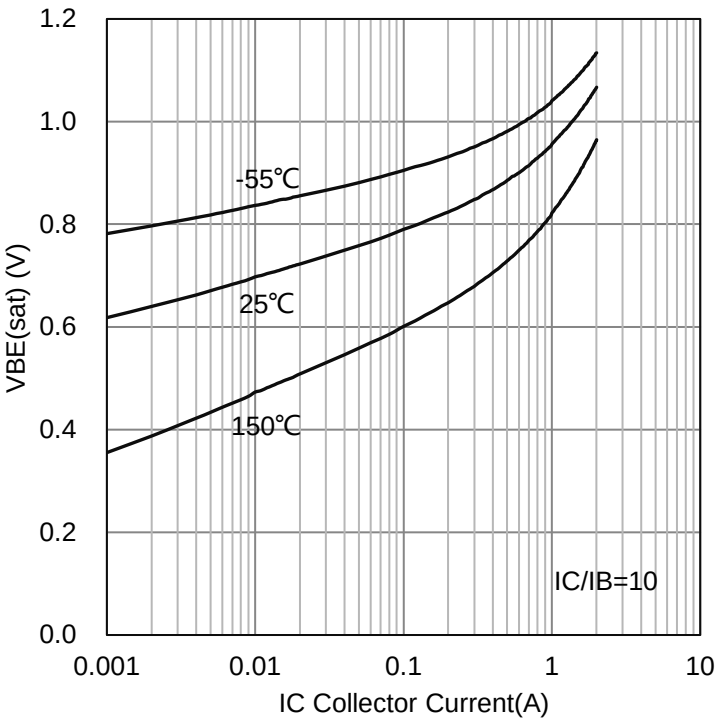


VCE vs. IB

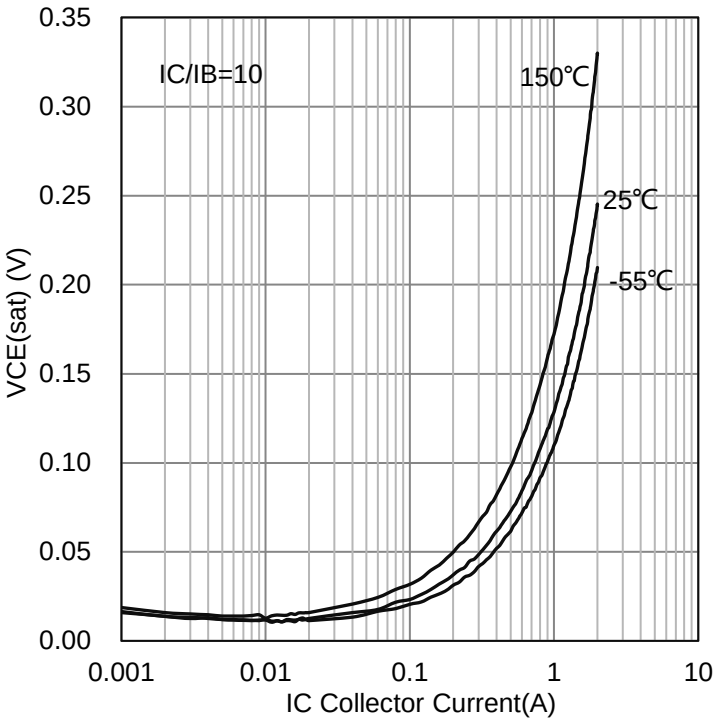


VBE(on) vs. IC

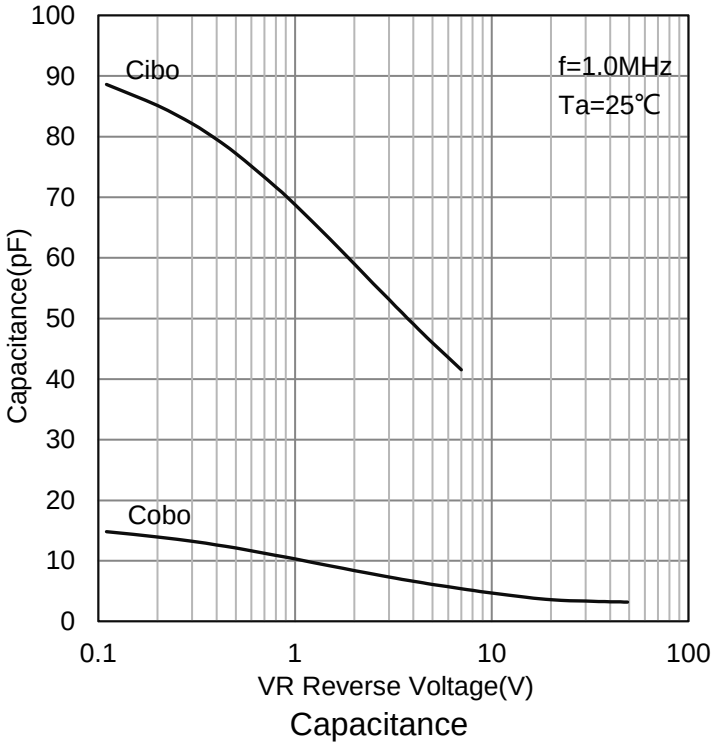
6.ELECTRICAL CHARACTERISTICS CURVES(Con.)



VBE(sat) vs. IC

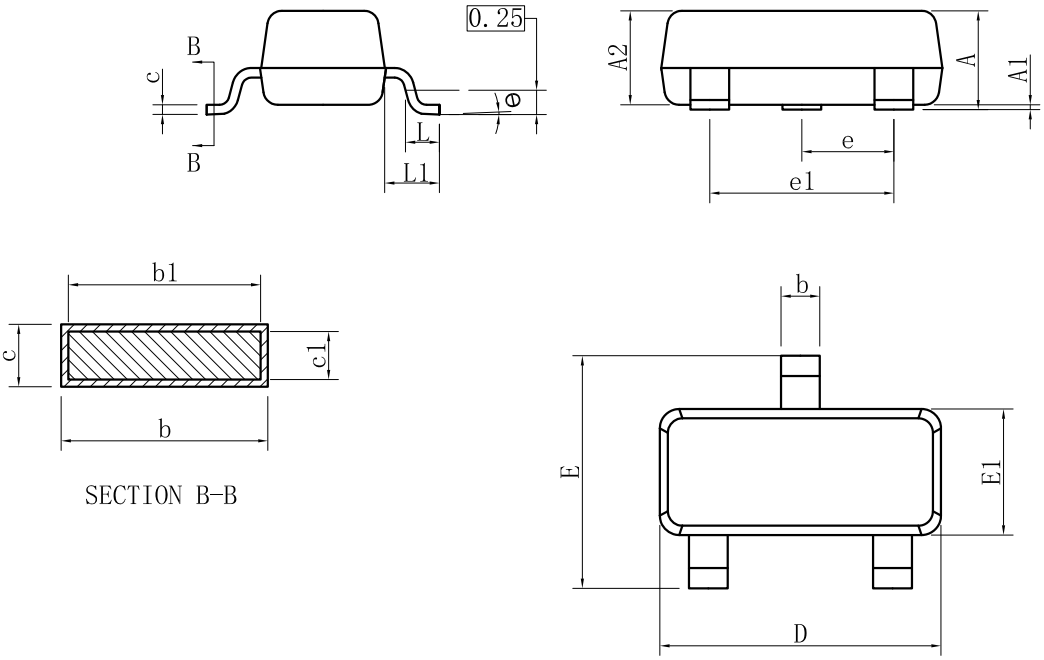


VCE(sat) vs. IC



Capacitance

7.OUTLINE AND DIMENSIONS

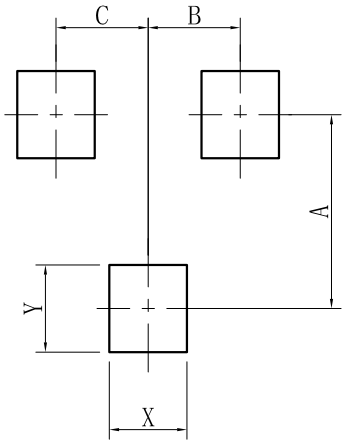


SOT23			
DIM	MIN	NOR	MAX
A	0.89	-	1.12
A1	0.01	-	0.10
A2	0.88	0.95	1.02
b	0.30	-	0.50
b1	0.30	0.40	0.45
c	0.08	-	0.20
c1	0.08	0.10	0.16
D	2.80	2.90	3.04
E	2.10	-	2.64
E1	1.20	1.30	1.40
e	0.95BSC		
e1	1.90BSC		
L	0.40	0.46	0.60
L1	0.54REF		
θ	0°	-	8°
All Dimensions in mm			

GENERAL NOTES

1. Top package surface finish Ra0.4±0.2um
2. Bottom package surface finish Ra0.7±0.2um
3. Side package surface finish Ra0.4±0.2um

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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