

SOT-23 Plastic-Encapsulate Transistors

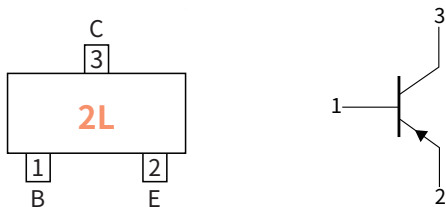
Features

- Complementary to MMBT5551
- Power dissipation of 300mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

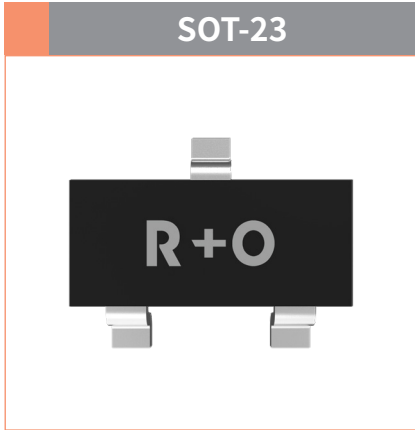
Mechanical Data

- Case: SOT-23
Molding compound meets UL 94V-0 flammability rating, RoHS-compliant,halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750,Method 2026

Function Diagram



Collector-Base Voltage
VCBO -160V
Collector Current
-0.6 Ampere



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	VCBO	V	-160
Collector-Emitter Voltage	VCEO		-150
Emitter-Base Voltage	VEBO		-5.0
Collector Current	IC	A	-0.6
Collector Power Dissipation	PC	mW	300
Storage temperature	Tstg	°C	-55 ~+150
Junction temperature	Tj	°C	-55 ~+150
Typical Thermal Resistance	RθJA	°C /W	417

Electrical Characteristics (Ta=25°C Unless otherwise noted)

PARAMETER	SYMBOL	UNIT	Condition	Min	Max
Collector-Base Breakdown Voltage	V(BR)CBO	V	IC=-100μA, IE=0	-160	—
Collector-Emitter Breakdown Voltage	V(BR)CEO		IC=-1.0mA, IB=0	-150	—
Emitter-Base Breakdown Voltage	V(BR)EBO		IE=-10μA, IC=0	-5.0	—
Collector-Base cut-off current	ICBO	nA	VCE= -120V, IB=0	—	-100
Emitter-Base cut-off current	IEBO		VEB= -4.0V, IC=0	—	-100
DC Current Gain	hFE	—	IC= -1.0mA, VCE= -5.0V	80	—
			IC= -10mA, VCE= -5.0V	100	300
			IC= -50mA, VCE= -5.0V	30	—
Collector-Emitter Saturation Voltage	VCE(sat)1	V	IC= -10mA, IB= -1.0mA	—	-0.2
Collector-Emitter Saturation Voltage	VCE(sat)2		IC= -50mA, IB= -5.0mA	—	-0.5
Base-Emitter Saturation Voltage	VBE(sat)1		IC= -10mA, IB= -1.0mA	—	-1.0
Base-Emitter Saturation Voltage	VBE(sat)2		IC= -50mA, IB= -5.0mA	—	-1.0

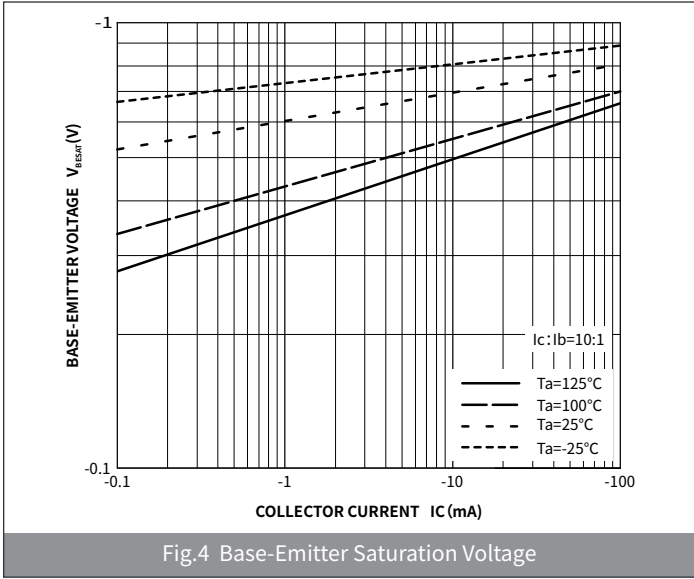
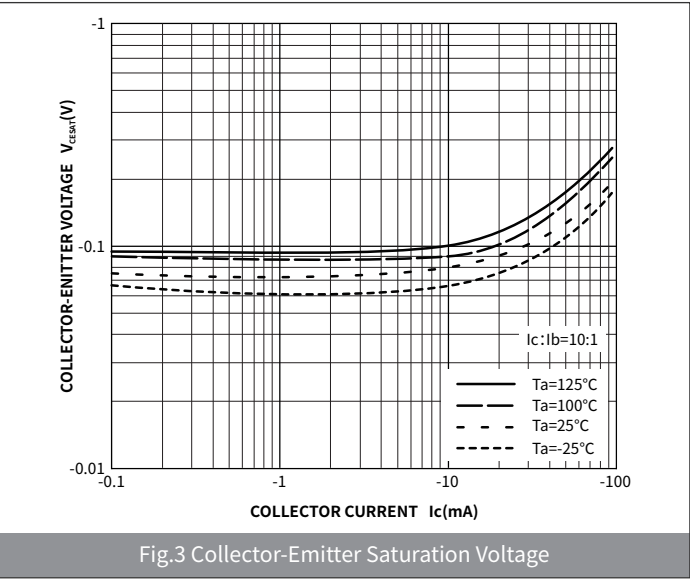
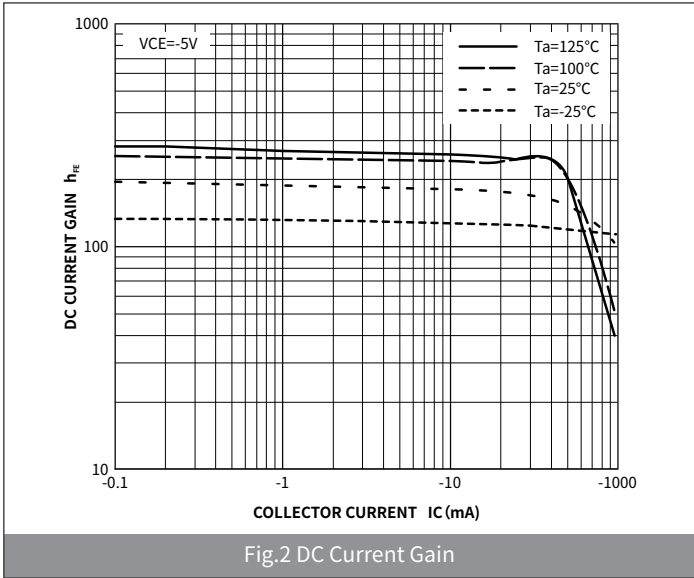
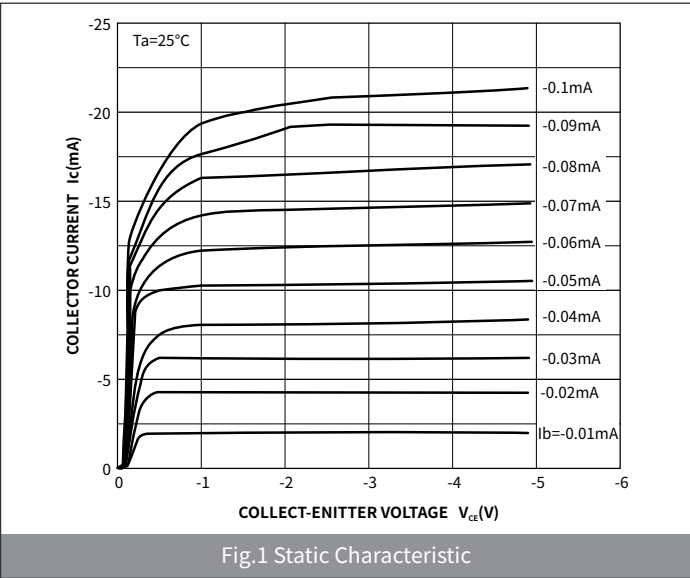
● Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=10\text{mA}, V_{CE}=-5.0\text{V}, f=30\text{MHz}$	MHz	100	—

● Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	30000	120000	7"

● Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)



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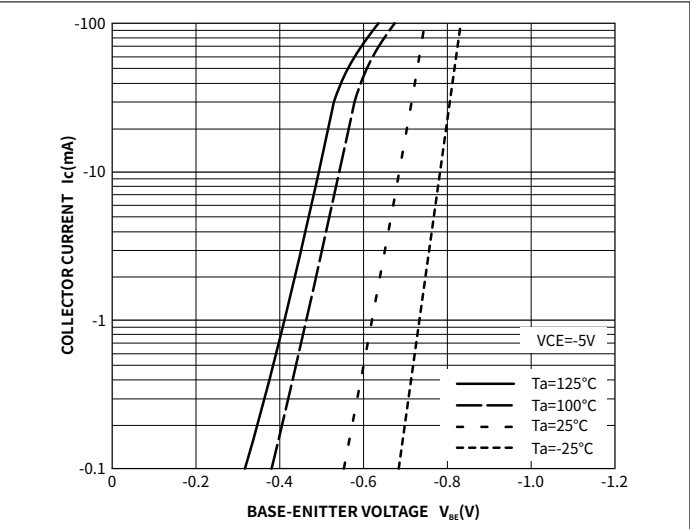


Fig.5 Base-Emitter On Voltage

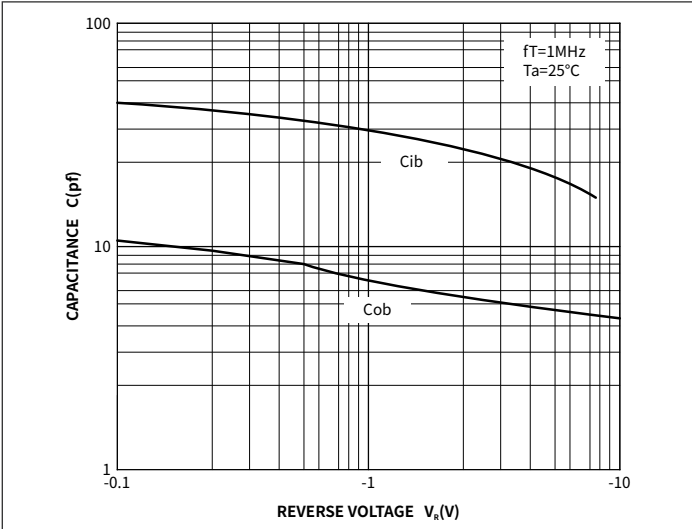
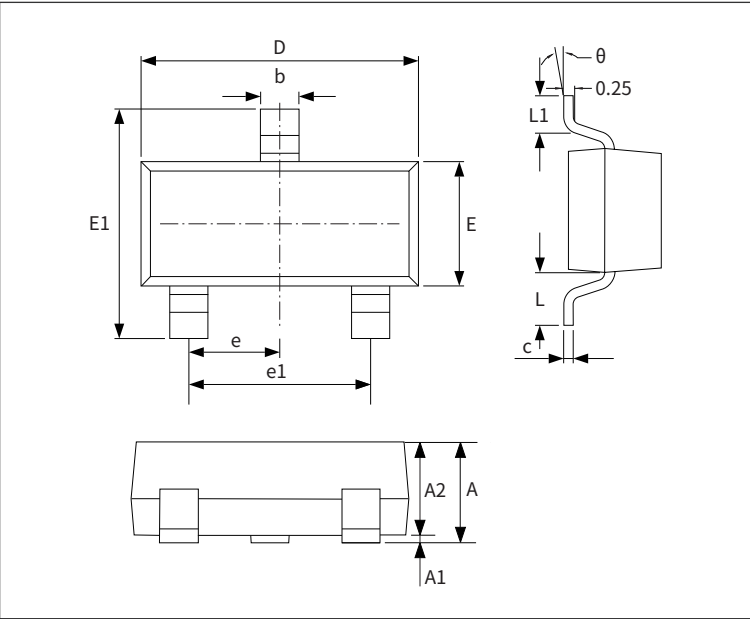


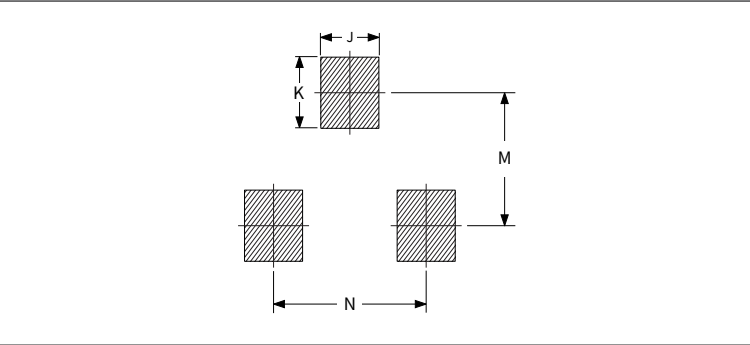
Fig.6 Cob/Cib- $V_{CB}V_{EB}$

● Package Outline Dimensions (SOT-23)



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout



Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077