

Features

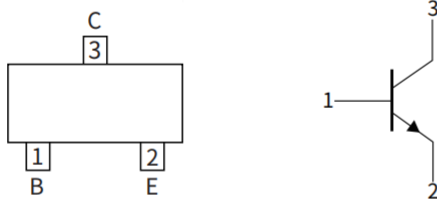
- Complementary to MMBTA92
- Power dissipation of 350mW
- High stability and high reliability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

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


SOT-23

Function Diagram



Collector-Base Voltage

VCBO 300V

Collector Current

0.5 Ampere

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

PARAMETER	SYMBOL	UNIT	VALUE
Collector-Base Voltage	V_{CBO}	V	300
Collector-Emitter Voltage	V_{CEO}		300
Emitter-Base Voltage	V_{EBO}		5.0
Collector Current	I_C	A	0.5
Collector Power Dissipation	P_C	mW	350
Storage temperature	T_{stg}	°C	-55 ~ +150
Junction temperature	T_j	°C	-55 ~ +150
Typical Thermal Resistance	$R_{\theta J-A}$	°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	$I_C=100\mu A, I_E=0$	300	—
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$		$I_C=1.0mA, I_B=0$	300	—
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$		$I_E=10\mu A, I_C=0$	5.0	—
Collector-Base cut-off current	I_{CBO}	uA	$V_{CB}=200V, I_E=0$	—	0.1
Emitter-Base cut-off current	I_{EBO}		$V_{EB}=5.0V, I_C=0$	—	0.1
DC Current Gain	$h_{FE(1)}$	—	$I_C=1.0mA, V_{CE}=10V$	60	—
	$h_{FE(2)}$		$I_C=10mA, V_{CE}=10V$	100	300
	$h_{FE(3)}$		$I_C=30mA, V_{CE}=10V$	60	—
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	V	$I_C=20mA, I_B=2.0mA$	—	0.2
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C=20mA, I_B=2.0mA$	—	0.9

Classification Of h_{FE}

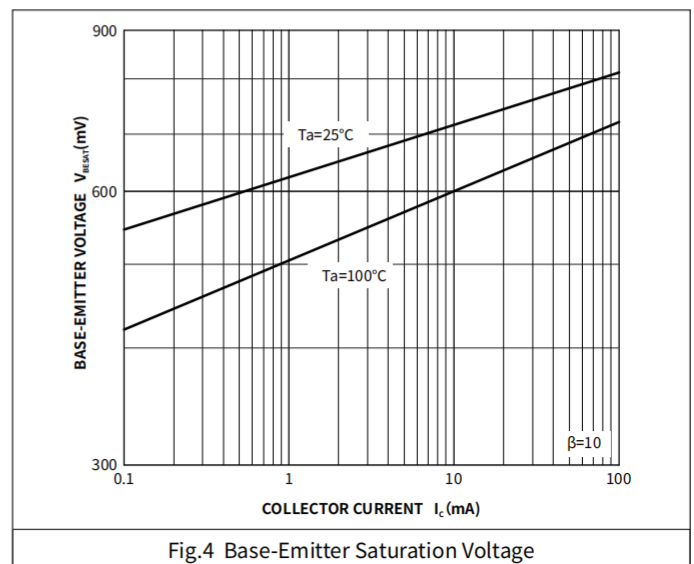
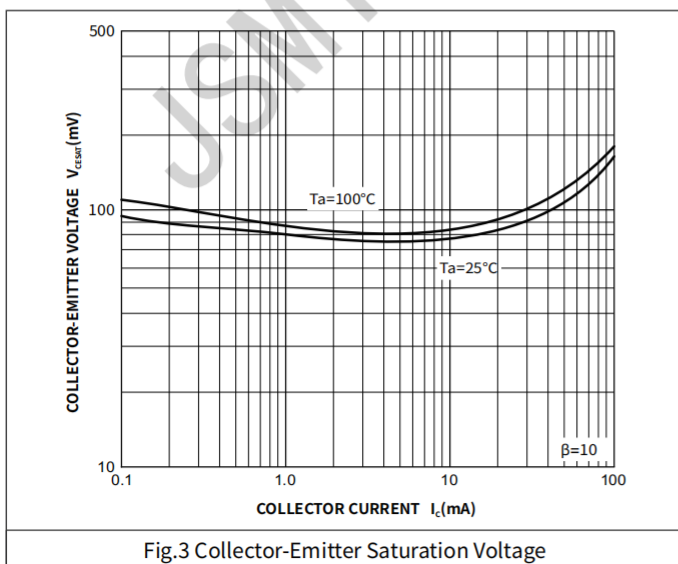
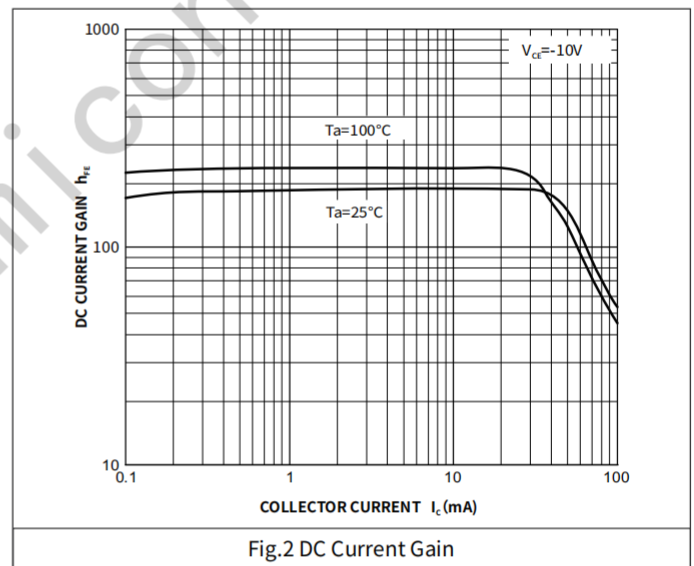
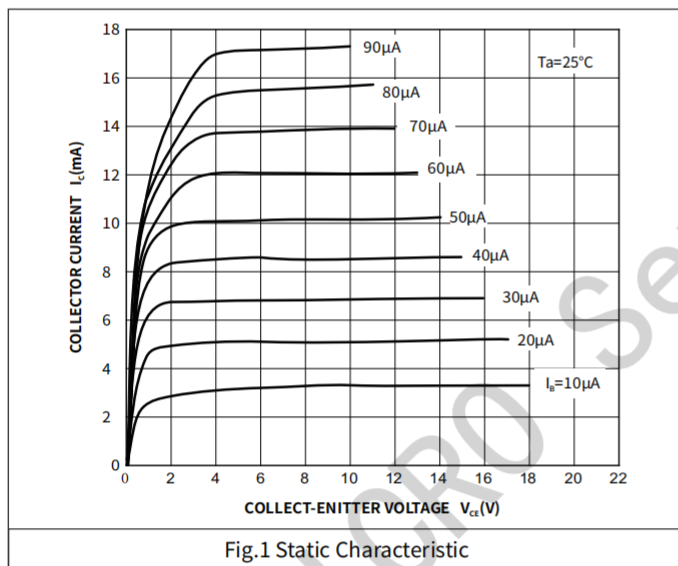
RANK	MMBTA42	MMBTA42-L
Range	100-300	100-200

Small-signal Characteristics

ITEM	SYMBOL	Condition	UNIT	Min	Max
Transition frequency	f_T	$I_C=10mA, V_{CE}=20V, f=30MHz$	MHz	50	—

Ordering Information

PACKAGE	DELIVERY MODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)
SOT-23	7"	0.008	3000	45000	180000

Ratings And Characteristics Curves ($T_a=25^\circ C$ Unless otherwise specified)


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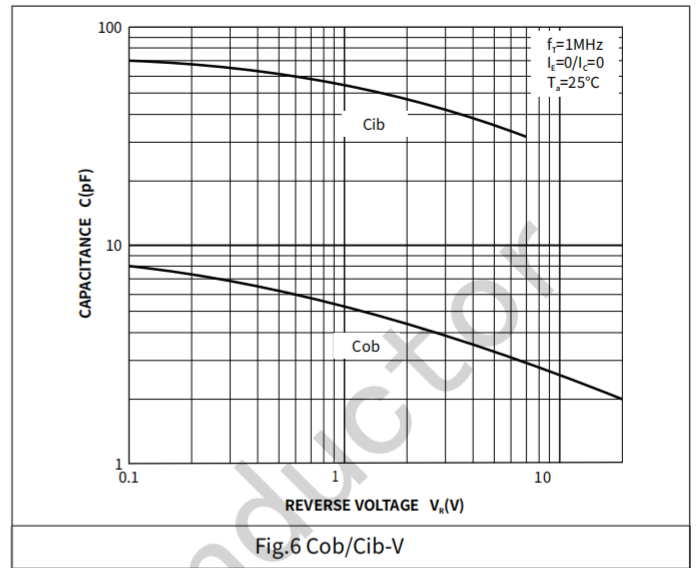
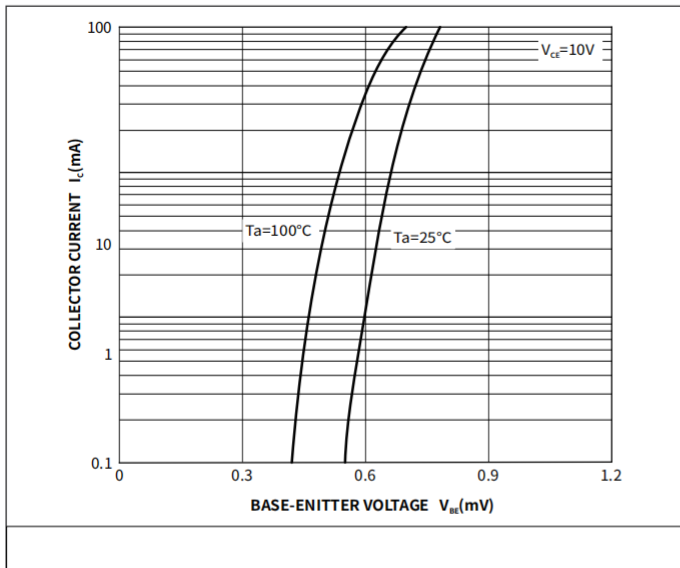
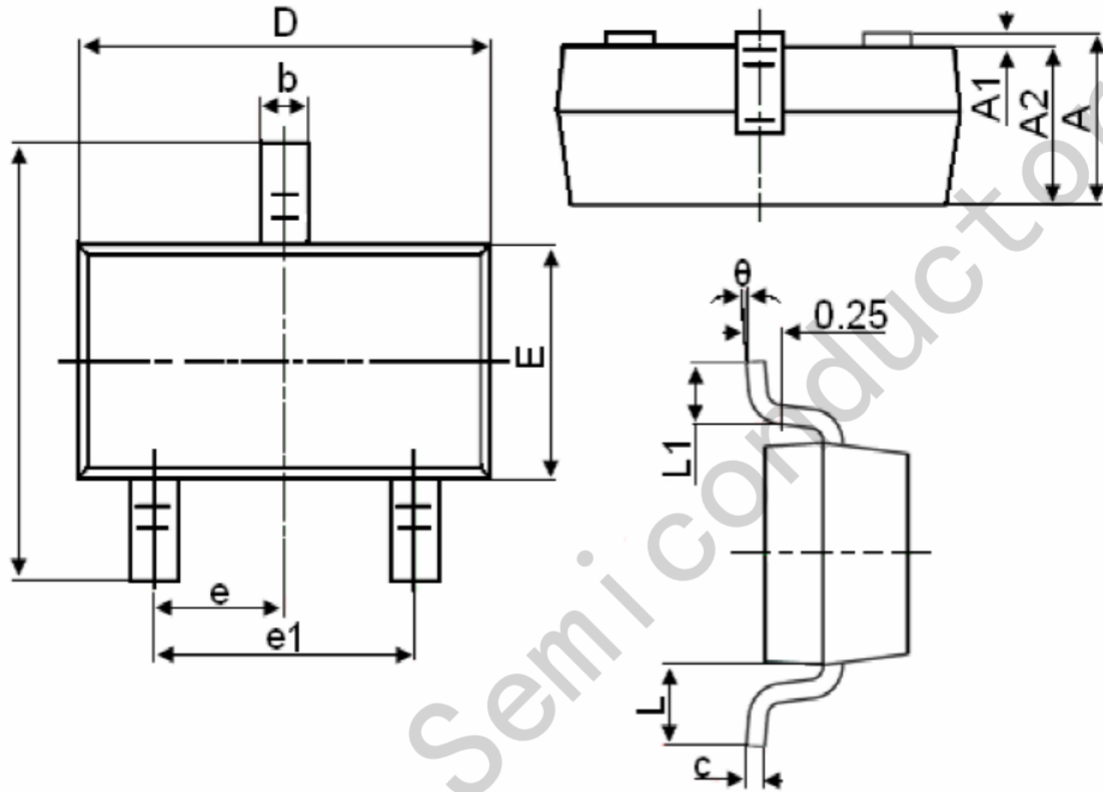


Fig.6 $C_{ob}/C_{ib}-V$

Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°