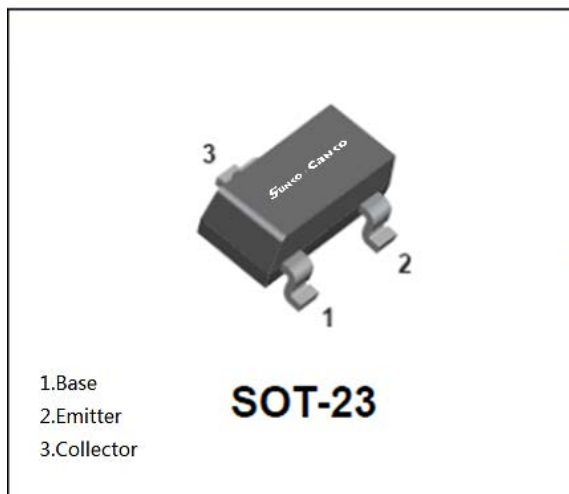


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Surface mount package ideally Suited for Automatic Insertion
- NPN

Mechanical Data

- **Package:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K3D

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	30
Collector-Emitter Voltage	$V_{(BR)CEO}$	V	$I_C=100\mu A, I_B=0$	30
Emitter-Base Voltage	$V_{(BR)EBO}$	V	$I_E=100\mu A, I_C=0$	10
Collector Current -Continuous	I_C	A		0.3
Total Device Dissipation	PD	mW		300
Junction Temperature	T_J	°C		150
Storage Temperature	TSTG	°C		-55 to +150

■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Type	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	$I_C=100\mu A, I_E=0$	30		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	$I_C=100\mu A, I_B=0$	30		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	$I_E=100\mu A, I_C=0$	10		
Collector cut-off current	I_{CBO}	μA	$V_{CB}=30V, I_E=0$			0.1
Emitter cut-off current	I_{EBO}	μA	$V_{EB}=10V, I_C=0$			0.1
DC current gain	h_{FE1}		$V_{CE}=5V, I_C=10mA$	10000		
	h_{FE2}		$V_{CE}=5V, I_C=100mA$	20000		

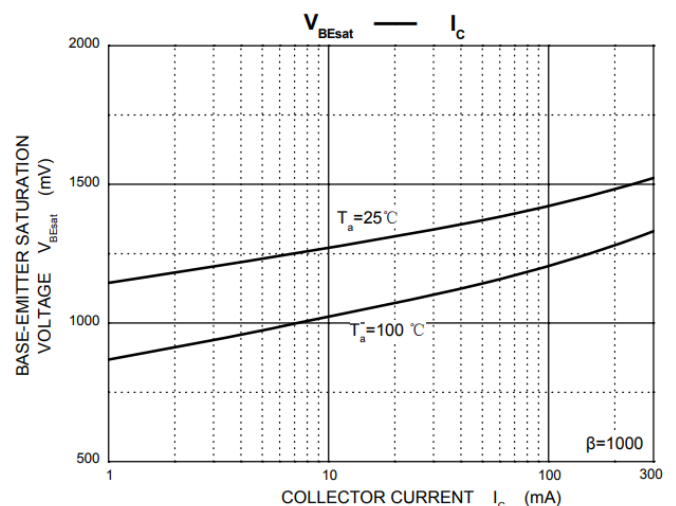
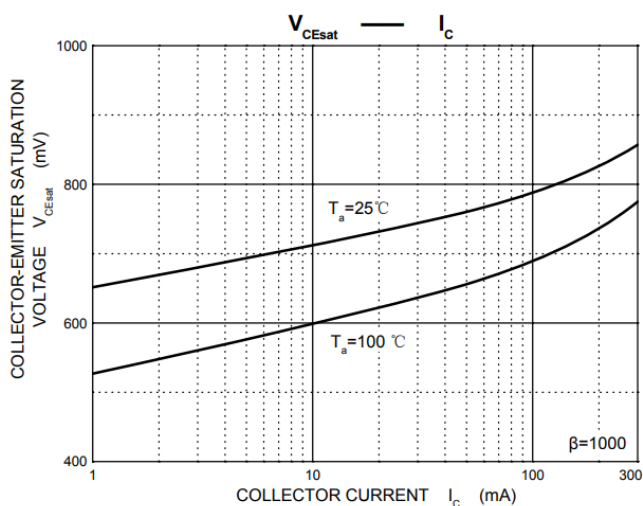
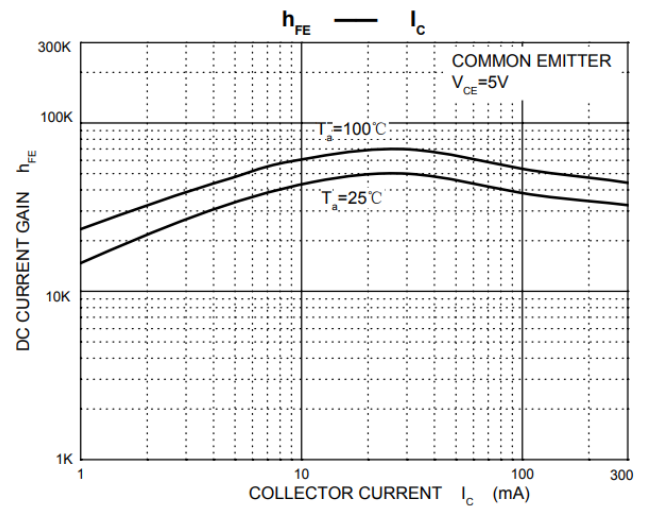
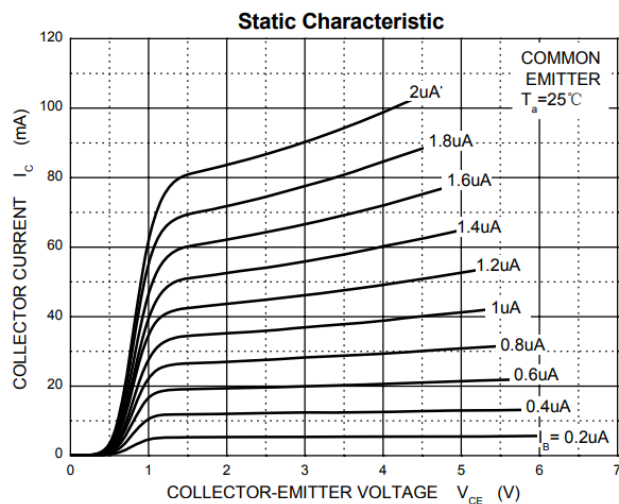
MMBTA14

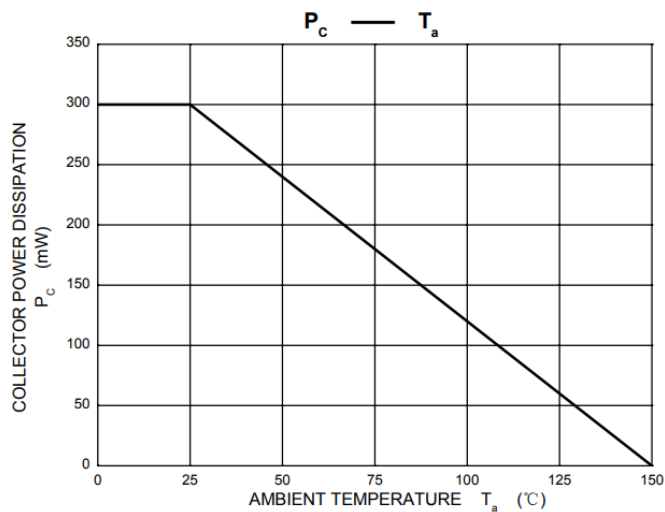
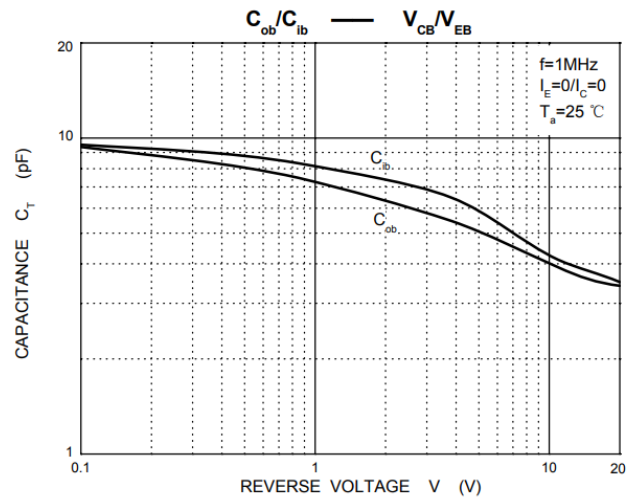
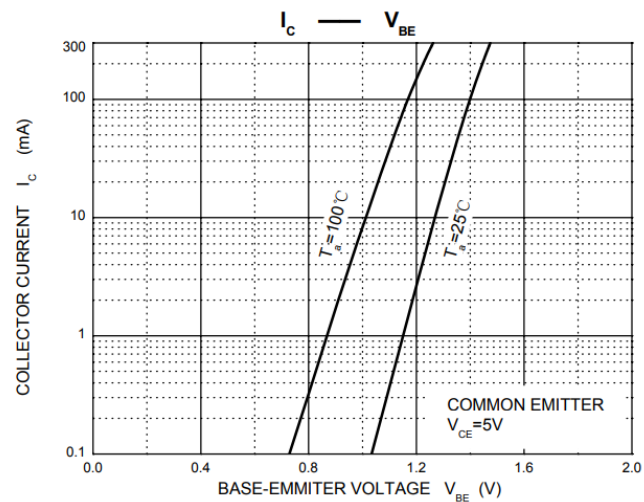
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=100mA, I_B=0.1mA$			1.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=100mA, I_B=0.1mA$			2
Base-emitter voltage	V_{BE}	V	$V_{CE}=5V, I_C=100mA$			2
Transition frequency	F_t	MHz	$V_{CE}=5V, I_C=10mA, f=100MHz$	125		
Collector-Emitter Voltage	C_{ob}	pF	$V_{CB}=10V, I_E=0, f=1MHz$			12

■ Ordering Information (Example)

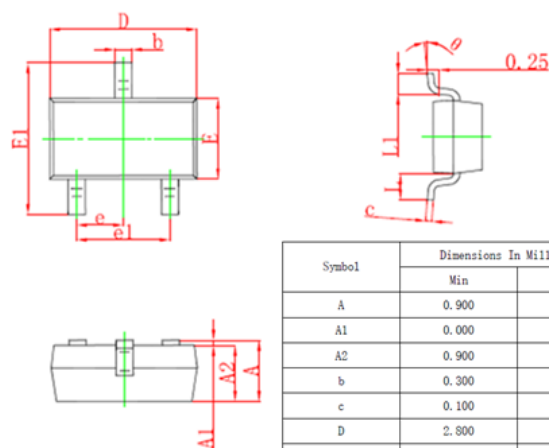
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBTA14	F2	Approximate 0.008	3000	30000	120000	7" reel

■ Characteristics(Typical)



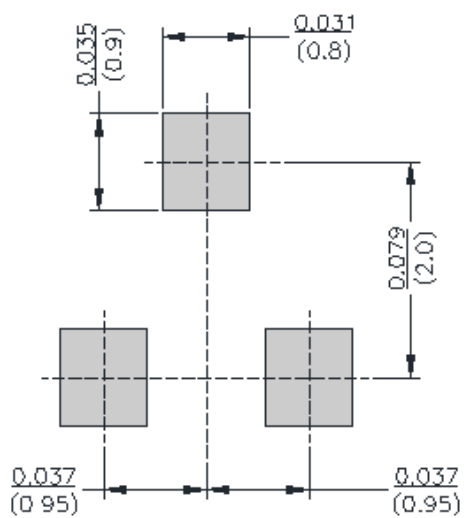


■SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		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	0.100	0.200	0.004	0.008
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°

■SOT-23Suggested Pad Layout



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