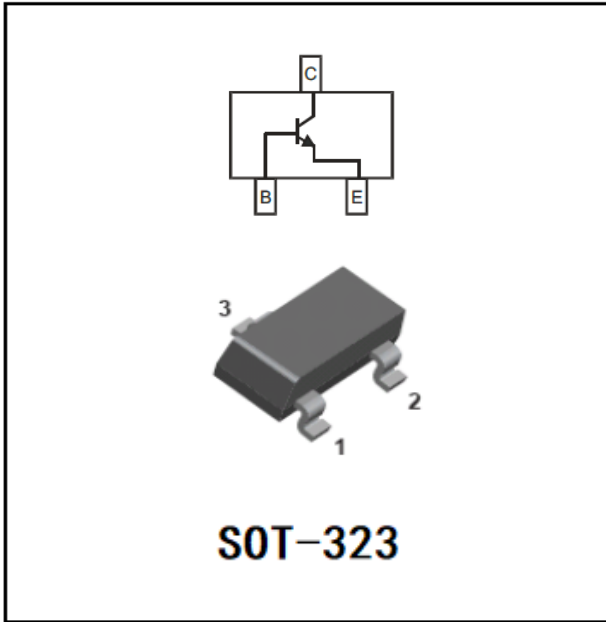


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- High Conductance
- Surface Mount Package Ideally Suited for Automatic Insertion

Mechanical Data

- **Package:** SOT-323
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** K3P

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

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	75
Collector-Emitter Voltage	V_{CEO}	V	40
Emitter-Base Voltage	V_{EBO}	V	6
Collector Current	I_C	mA	600
Collector Power Dissipation	P_C	mW	200
Operation Junction Temperature	T_j	°C	150
Storage Temperature	T_{stg}	°C	-55 to +150



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

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=10\mu A, I_E=0$	75		
Collector-emitter breakdown voltage	V_{CEO^*}	V	$I_C=10mA, I_B=0$	40		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=10\mu A, I_C=0$	6		
Collector-emitter cut-off current	I_{CEX}	nA	$V_{CE}=60V, V_{BE}=3V$			10
Collector-base cut-off current	I_{CBO}	nA	$V_{CB}=60V, I_E=0$			100
Emitter-base cut-off current	I_{EBO}	nA	$V_{EB}=3V, I_C=0$			100
DC current gain	h_{FE}		$V_{CE}=10V, I_C=0.1mA$	20		
	h_{FE}		$V_{CE}=10V, I_C=1mA$	40		
	h_{FE}		$V_{CE}=10V, I_C=10mA$	80		
	h_{FE}		$V_{CE}=10V, I_C=150mA$	100		300
	h_{FE}		$V_{CE}=10V, I_C=500mA$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=150mA, I_B=15mA$			0.3
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C=150mA, I_B=15mA$	0.6		1.2
Transition frequency	f_T	MHz	$V_{CE}=20V, I_C=20mA, f=100MHz$	300		
Delay time	t_d	ns	$V_{CC}=30V, V_{BE(off)}=-0.5V$ $I_C=150mA, I_{B1}=15mA$			15
Rise time	t_r	ns				25
Storage time	t_s	ns	$V_{CC}=30V, I_C=150mA, I_{B1}=I_{B2}=15mA$			225
Fall time	t_f	ns				60

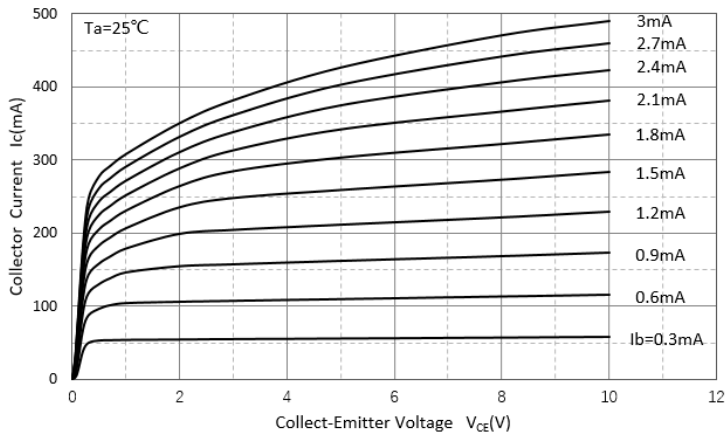
■ Ordering Information (Example)

Preferred P/N	Packing Code	Unit Weight(G)	Minimum Package(Pcs)	Inner Box Quantity(Pcs)	Outer Carton Quantity(Pcs)	Delivery Mode
MMST2222A	F2	Approximate 0.005	3000	30000	120000	7" reel

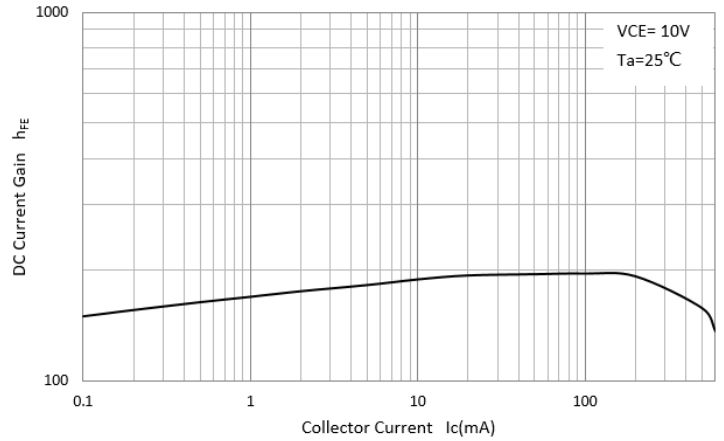


■ Characteristics (Typical)

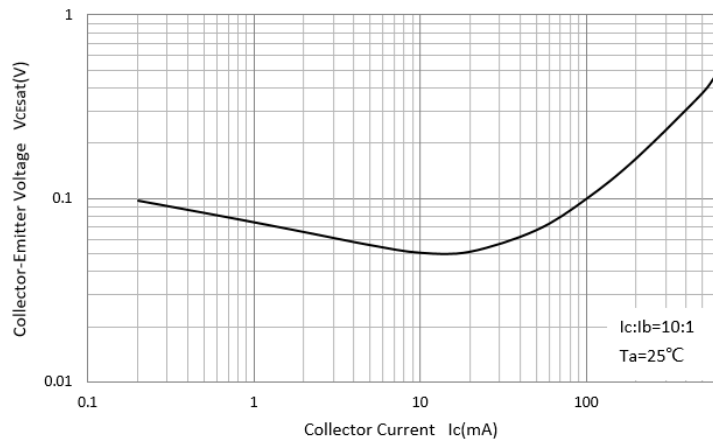
Static Characteristic



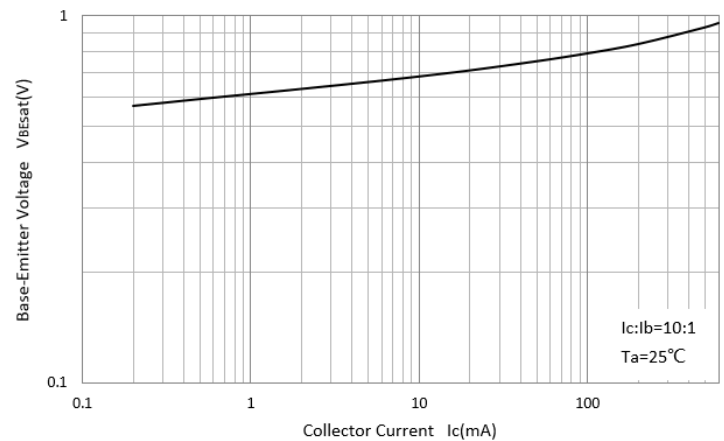
DC Current Gain



Collector-Emittor Saturation Voltage



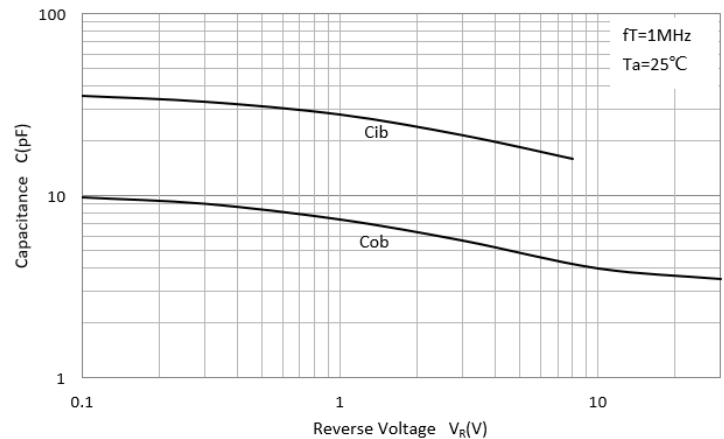
Base-Emittor Saturation Voltage



Base-Emittor On Voltage

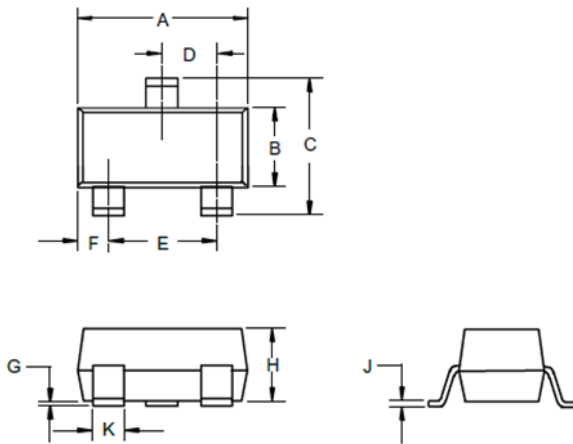


Cob/Cib- V_{CB}/V_{EB}



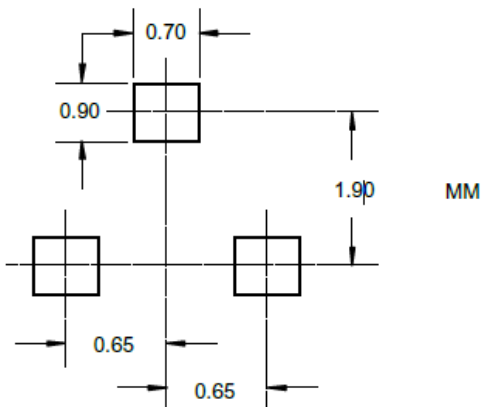


■ SOT-323 Package Outline Dimensions



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

■ SOT-323 Soldering Footprint





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