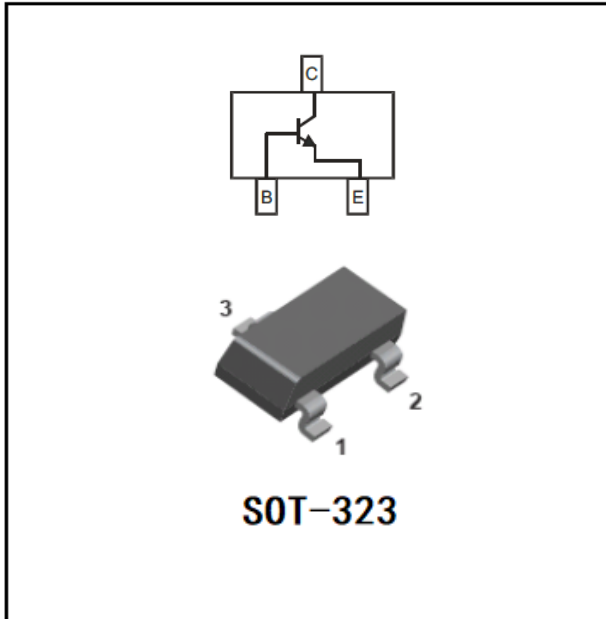


NPN Transistor



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:** K3M

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

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	300
Collector-Emitter Voltage	V_{CEO}	V	300
Emitter-Base Voltage	V_{EBO}	V	5
Collector Current	I_C	mA	100
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	$I_C = 100\mu A, I_E = 0$	300		
Collector-emitter breakdown voltage	$V_{(CEO)}$	V	$I_C = 1mA, I_B = 0$	300		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E = 100\mu A, I_C = 0$	5		
Collector-base cut-off current	I_{CBO}	μA	$V_{CB} = 200V, I_E = 0$			0.5
Emitter-base cut-off current	I_{EBO}	μA	$V_{EB} = 5V, I_C = 0$			0.5
DC current gain	$h_{FE(1)}$		$V_{CE} = 10V, I_C = 1mA$	25		
	$h_{FE(2)}$		$V_{CE} = 10V, I_C = 10mA$	40		300
	$h_{FE(3)}$		$V_{CE} = 10V, I_C = 30mA$	40		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C = 20mA, I_B = 2mA$			0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	$I_C = 20mA, I_B = 2mA$			1.0
Transition frequency	f_T	MHz	$V_{CE} = 20V, I_C = 10mA, f = 30MHz$	50		



MMSTA42

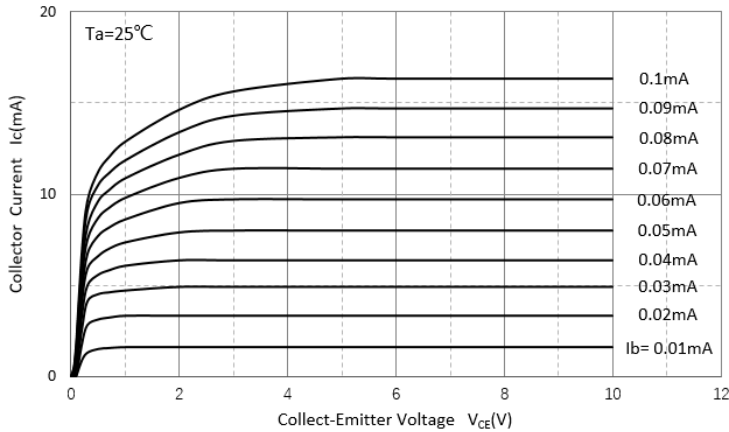
RoHS
COMPLIANT

■ Ordering Information (Example)

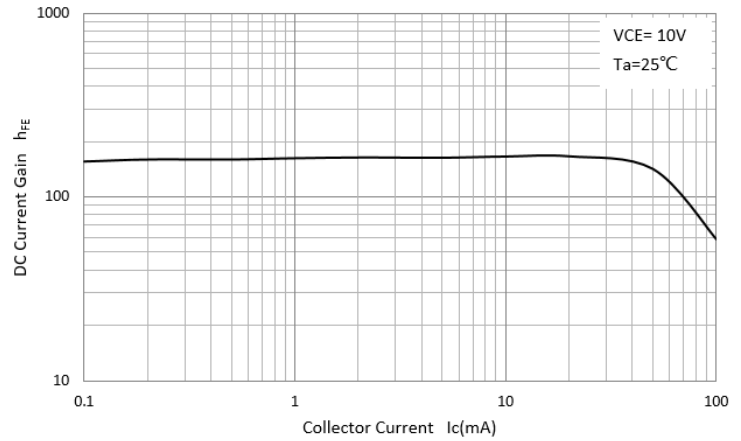
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMSTA42	F2	Approximate 0.005	3000	30000	120000	7" reel

■ Characteristics (Typical)

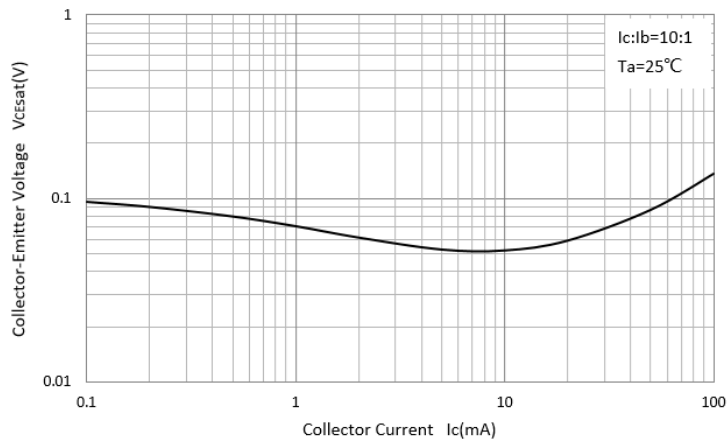
Static Characteristic



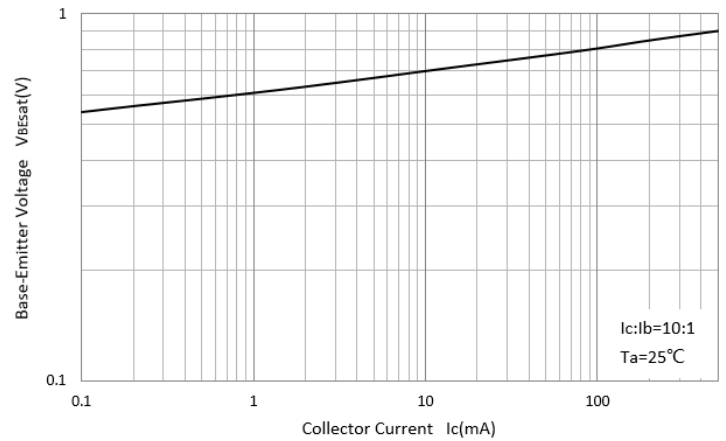
DC Current Gain



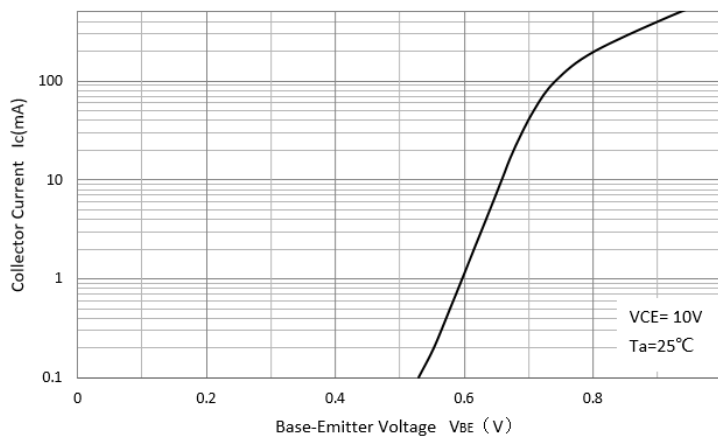
Collector-Emittor Saturation Voltage



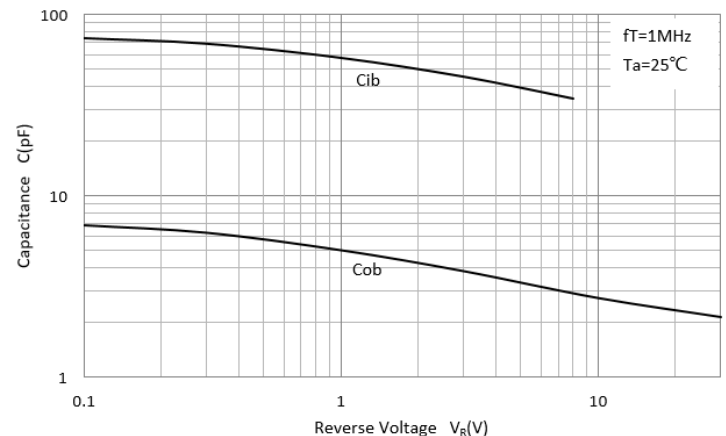
Base-Emitter Saturation Voltage



Base-Emitter On Voltage

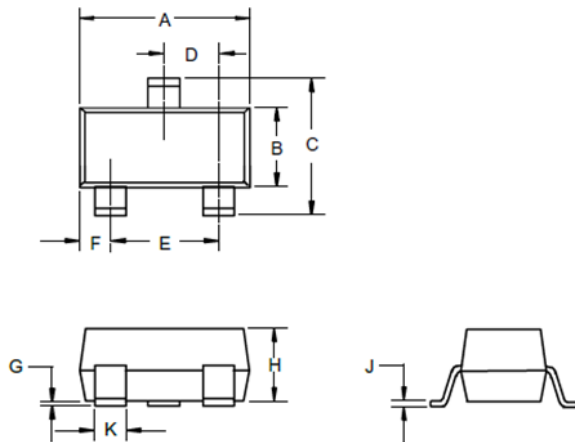


$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



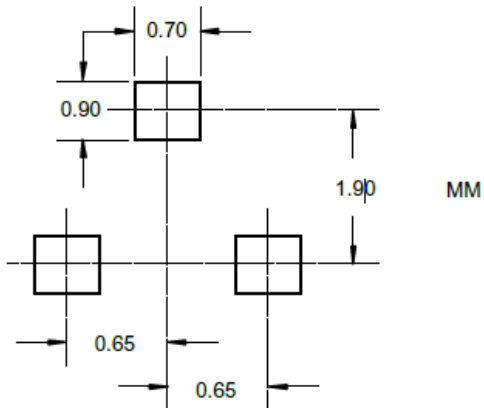


■ SOT-323 Package Outline Dimensions



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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