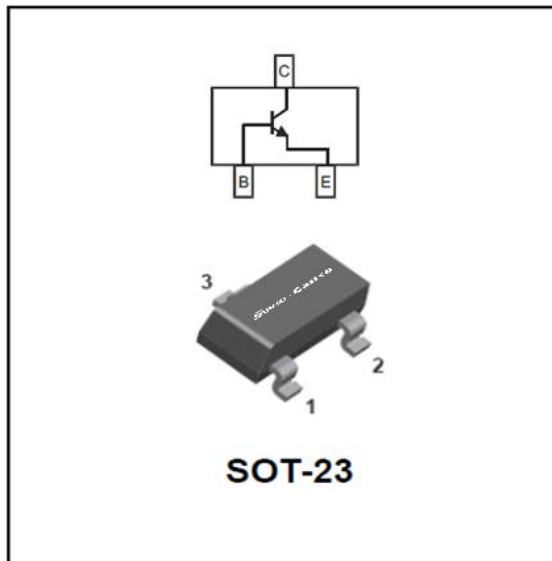


NPN Transistor



Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- 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:**

2SC2412-Q	BQ
2SC2412-R	BR
2SC2412-S	BS

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

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	$I_C=50\mu A, I_E=0$	60
Collector-Emitter Voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	50
Emitter-Base Voltage	V_{EBO}	V	$I_E=50\mu A, I_C=0$	7
Collector Current	I_C	A		0.15
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	Type	Max
Collector-base breakdown voltage	V_{CBO}	V	$I_C=50\mu A, I_E=0$	60		
Collector-emitter breakdown voltage	V_{CEO}	V	$I_C=1mA, I_B=0$	50		
Emitter-base breakdown voltage	V_{EBO}	V	$I_E=50\mu A, I_C=0$	7		
Collector-base cut-off current	I_{CBO}	uA	$V_{CB}=60V, I_E=0$			0.1
Emitter-base cut-off current	I_{EBO}	uA	$V_{EB}=7V, I_C=0$			0.1
DC current gain	h_{FE}		$V_{CE}=6V, I_C=1mA$	120		560
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	$I_C=50mA, I_B=5mA$			0.4
Transition frequency	f_T	MHz	$V_{CE}=12V, I_C=2mA, f=100MHz$		160	
Collector-base output capacitance	C_{ob}	pF	$V_{CB}=12V, I_E=0, f=1MHz$		2.0	3.5

■ CLASSIFICATION OF HFE

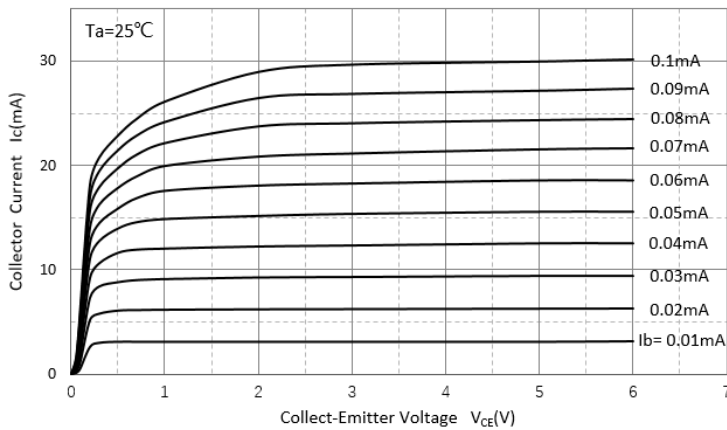
Rank	Q	R	S
Range	120-270	180-390	270-560

■ Ordering Information (Example)

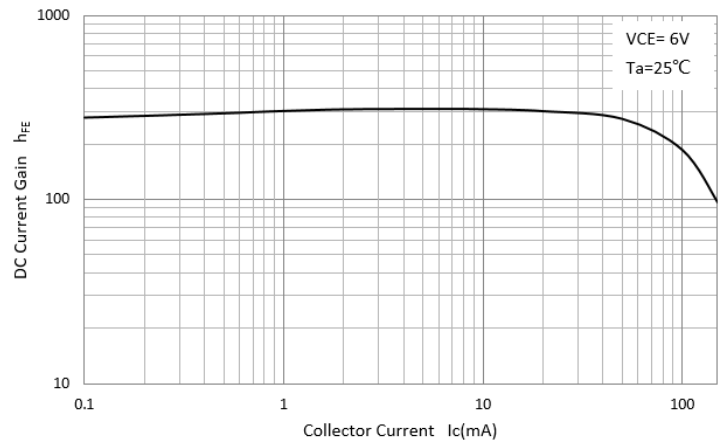
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
2SC2412	F2	Approximate 0.008	3000	30000	120000	7" reel

■ Characteristics(Typical)

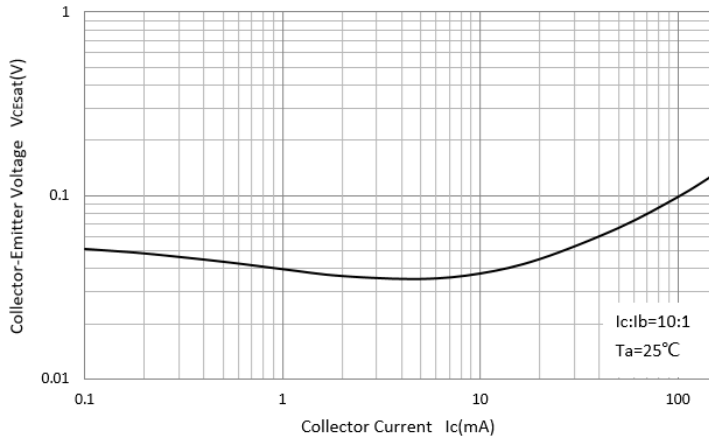
Static Characteristic



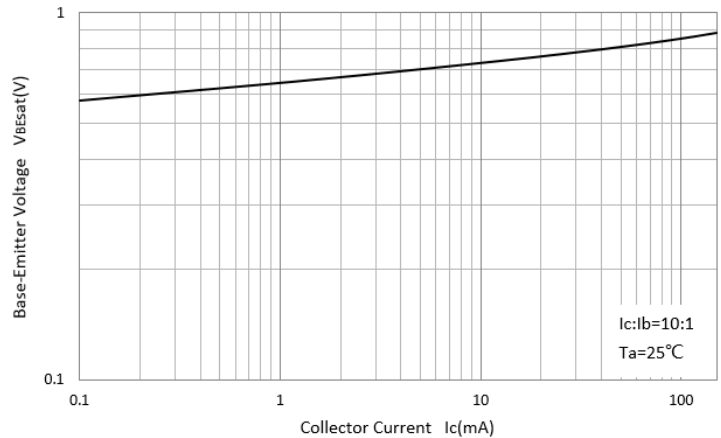
DC Current Gain



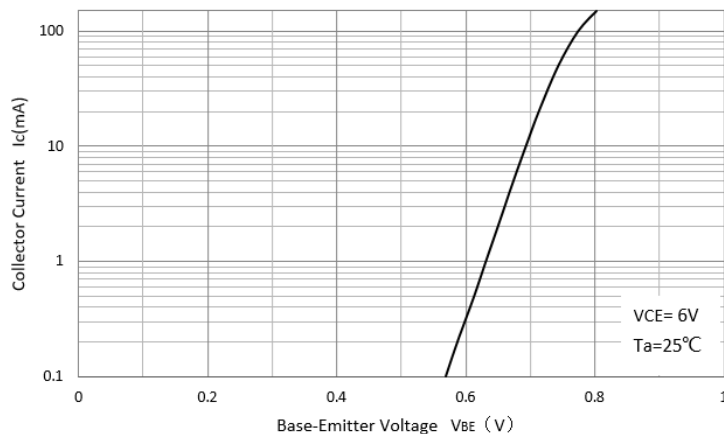
Collector-Emitter Saturation Voltage



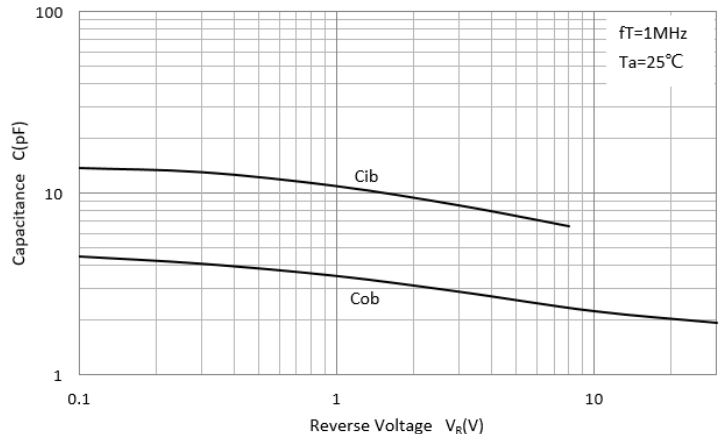
Base-Emitter Saturation Voltage



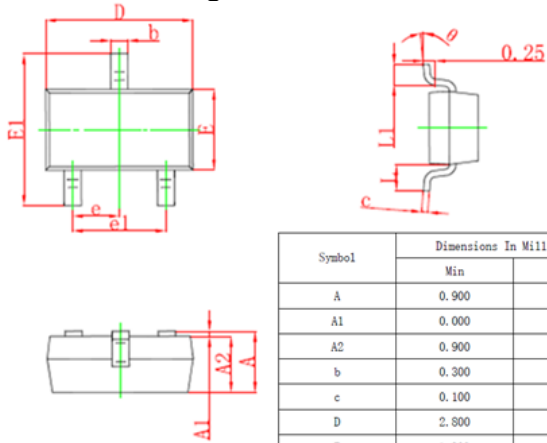
Base-Emitter On Voltage



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

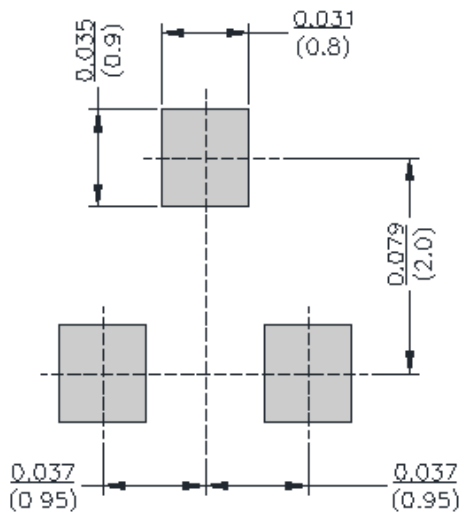


■SOT-23 Package Outline Dimensions



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-23 Soldering Footprint



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