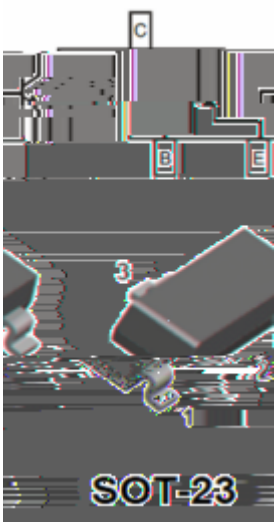
NPN General Purpose Amplifier



Features

Moisture sensitivity level 1
Halogen free and RoHS compliant
Surface mount package ideally suited for automatic insertion

Application

Signal amplification
Switching circuit

J-STD-002 and JESD22-B102

■ **Maximum Ratings** (T_a=25 Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code			2SC2411-Q	ANQ
			2SC2411-R	ANR
Collector-base voltage	V_{CBO}	V	I_C=100μA,I_E=0	40
Collector-emitter voltage	V_{CEO}	V	I_C =1mA,I_B=0	32
Emitter-base voltage	V_{EBO}	V	I_E=100μA,I_C=0	5
Collector current	I_C	A		0.5
Power dissipation	P_D	mW		200
Junction temperature	T_J			-55 to +150
Storage temperature	T_{STG}			-55 to +150

■ Electrical Characteristics (Ta=25 Unless otherwise specified)

Item	Symbol	Unit	Conditions		Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	I_C=100μA,I_E=0		40		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C =1mA,I_B=0		32		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=100μA,I_C=0		5		
Collector-base cut-off current	I_{CBO}	uA	V_{CB}=20V				0.1
Emitter-base cut-off current	I_{EBO}	uA	V_{EB}=4V				0.1
DC current gain	h_{FE}		2SC2411-Q	V_{CE}=3V,I_C=100mA	120		270
			2SC2411-R		180		390
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=500mA,I_B=50mA				0.6
Transition frequency	f_T	MHz	V_{CE}=5V,I_C=20mA,f=100MHz			250	
Collector-base output capacitance	Cob	pF	V_{CB}=10V,I_E=0A,f=1MHz			3	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	RθJ-A(1)	/W	625
Thermal resistance, junction-to-case	RθJ-C(1)	/W	500

Note:

1 Device mounted on PCB, single-sided copper with standard footprint

■Characteristics

Fig 1 Static Characteristics

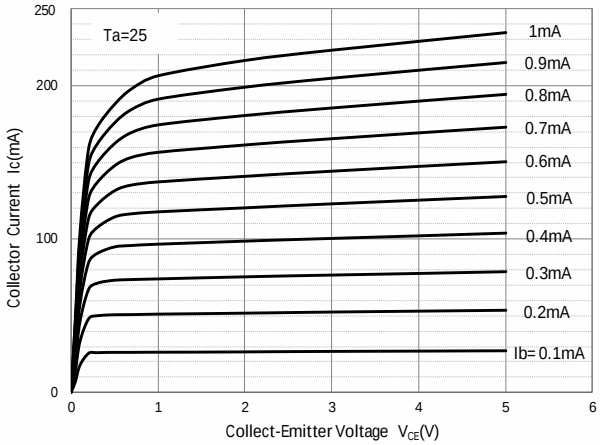


Fig 2 DC Current Gain

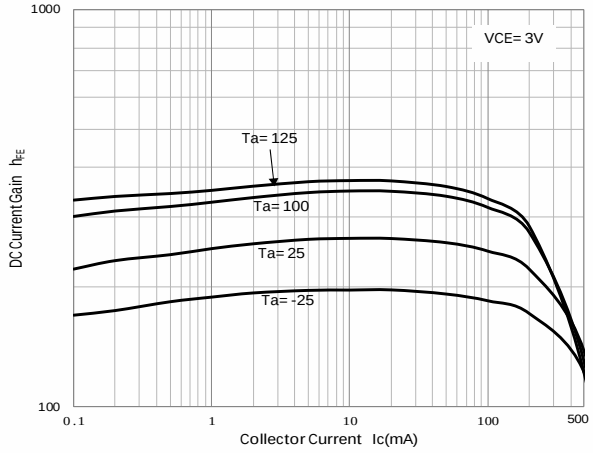


Fig 3 Collector-Emitter Saturation Voltage

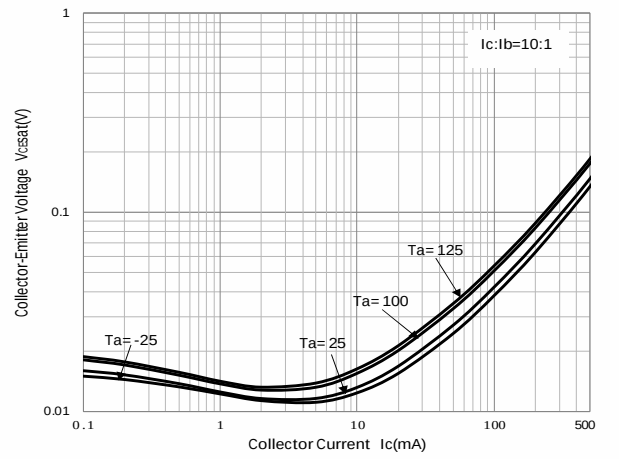


Fig 4 Base-Emitter Saturation Voltage

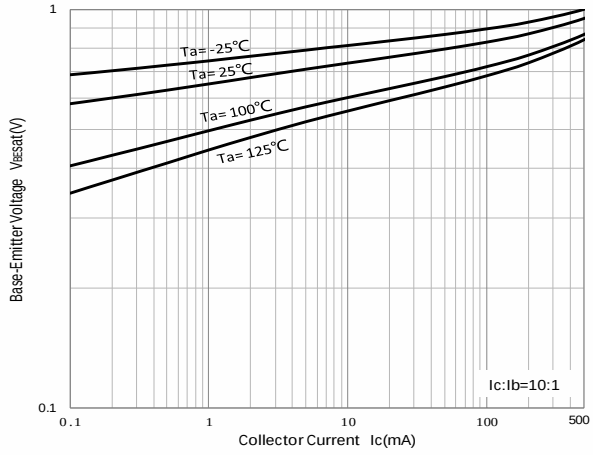


Fig 5 Base-Emitter On Voltage

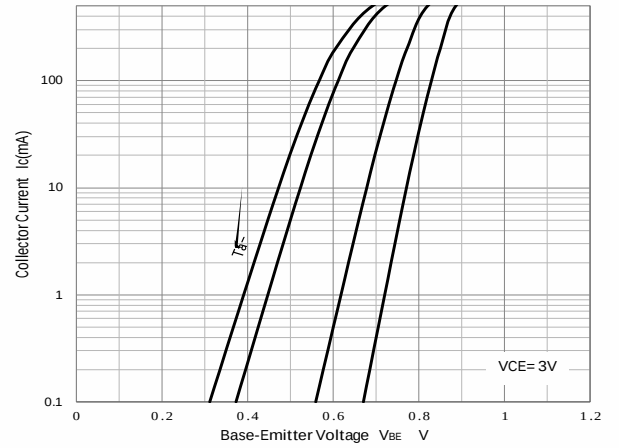
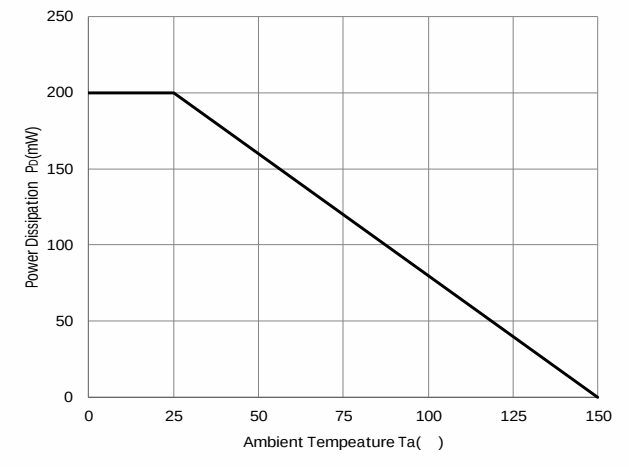


Fig 6 Cob/Cib-V_{CB}/V_{EB}

Fig 7 P_D-Ta Curve



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