Elektronische Bauelemente

2SC1654

0.05A , 180V

NPN Epitaxial Planar Transistor

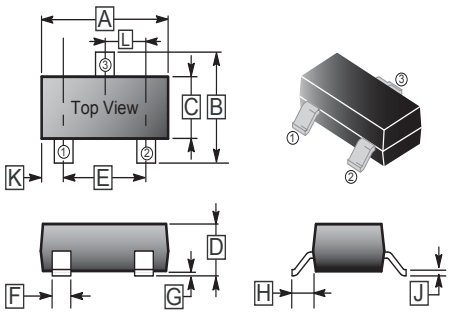
RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

FEATURE

- High Frequency Power Amplifier Application
- Power Switching Applications

SOT-23



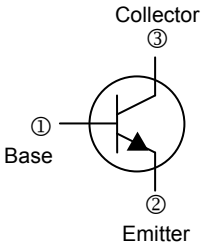
CLASSIFICATION OF $h_{FE(1)}$

Product-Rank	2SC1654-N5	2SC1654-N6	2SC1654-N7
Range	90~180	135~270	200~400
Marking Code	N5	N6	N7

PACKAGE INFORMATION

Package	MPQ	LeaderSize
SOT-23	3K	7' inch

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.80	3.04	G	0.09	0.18
B	2.10	2.55	H	0.45	0.60
C	1.20	1.40	J	0.08	0.177
D	0.89	1.15	K	0.6 REF.	
E	1.78	2.04	L	0.89	1.02
F	0.30	0.50			



ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Ratings	Unit
Collector to Base Voltage	V_{CBO}	180	V
Collector to Emitter Voltage	V_{CEO}	160	V
Emitter to Base Voltage	V_{EBO}	5	V
Collector Current - Continuous	I_C	50	mA
Collector Power Dissipation	P_C	150	mW
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	833	°C / W
Junction, Storage Temperature	T_J, T_{STG}	150, -55 ~ 150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector to Base Breakdown Voltage	$V_{(BR)CBO}$	180	-	-	V	I_C=100μA, I_E=0
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	160	-	-	V	I_C=1mA, I_B=0
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	5	-	-	V	I_E=100μA, I_C=0
Collector Cut-Off Current	I_{CBO}	-	-	0.1	μA	V_{CB}=130V, I_E=0
Emitter Cut-Off Current	I_{EBO}	-	-	0.1	μA	V_{EB}=5V, I_C=0
DC Current Gain	$h_{FE(1)}$	90	-	400		V_{CE}=3V, I_C=15mA
	$h_{FE(2)}$	70	-	-		V_{CE}=3V, I_C=1mA
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.3	V	I_C=50mA, I_B=5mA
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	-	-	1	V	I_C=50mA, I_B=5mA
Transition Frequency	f_T	-	120	-	MHz	V_{CE}=10V, I_C=10mA
Collector Output Capacitance	C_{ob}	-	2.3	-	pF	V_{CB}=10V, I_E=0, f=1MHz

CHARACTERISTIC CURVES

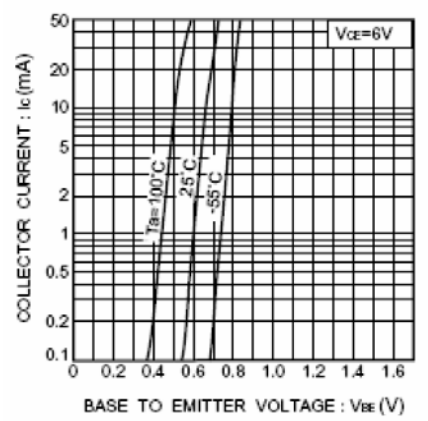


Fig.1 Grounded emitter propagation characteristics

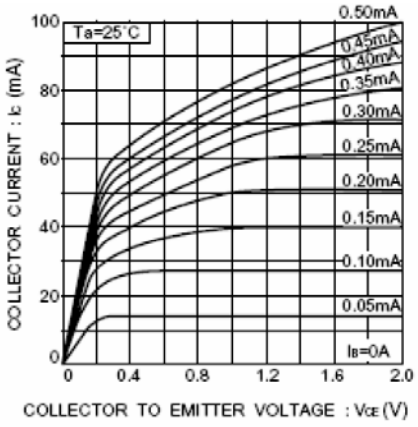


Fig.2 Grounded emitter output characteristics (I)

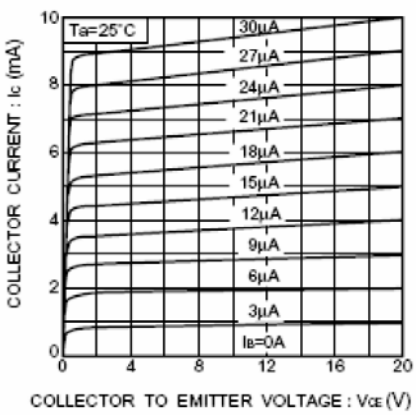


Fig.3 Grounded emitter output characteristics (II)

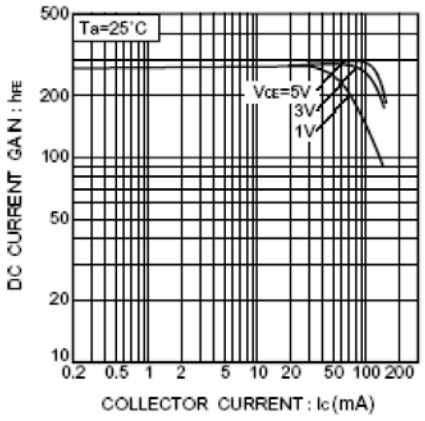


Fig.4 DC current gain vs. collector current (I)

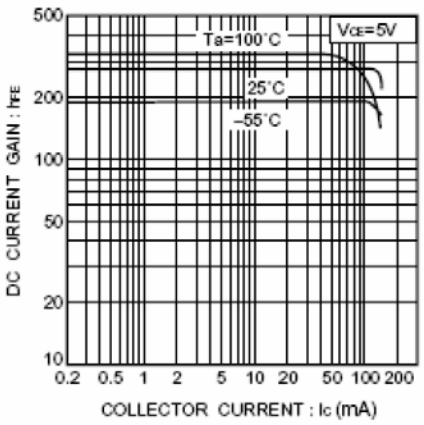


Fig.5 DC current gain vs. collector current (II)

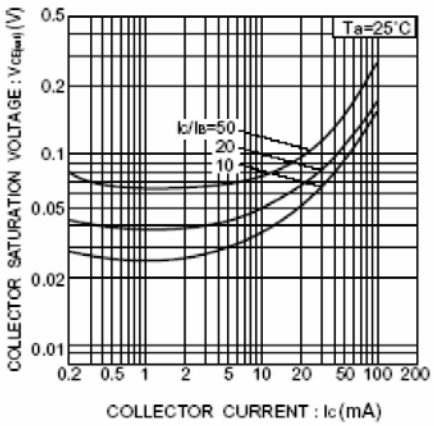


Fig. 6 Collector-emitter saturation voltage vs. collector current

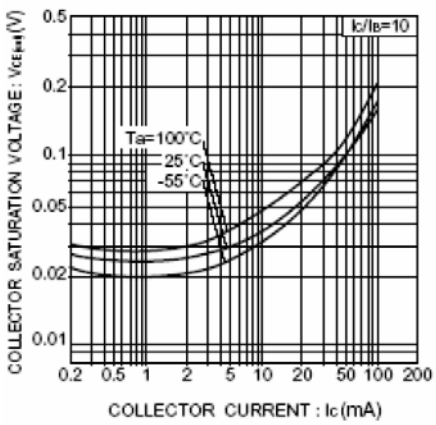


Fig.7 Collector-emitter saturation voltage vs. collector current (I)

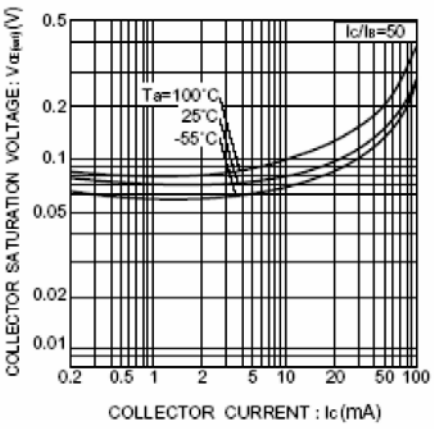


Fig.8 Collector-emitter saturation voltage vs. collector current (II)

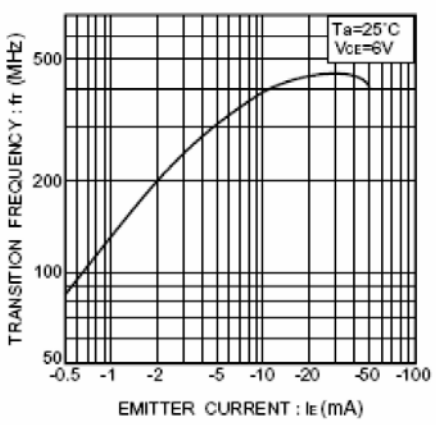


Fig.9 Gain bandwidth product vs. emitter current

CHARACTERISTIC CURVES

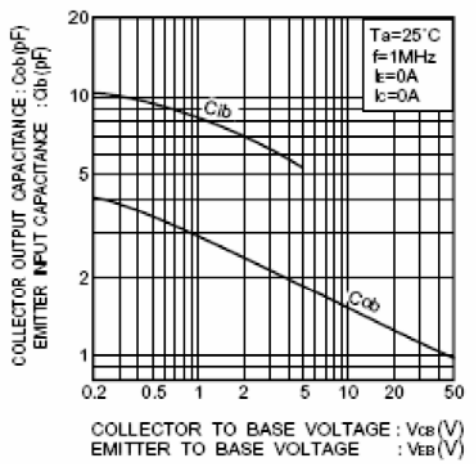


Fig.10 Collector output capacitance vs. collector-base voltage
Emitter input capacitance vs. emitter-base voltage

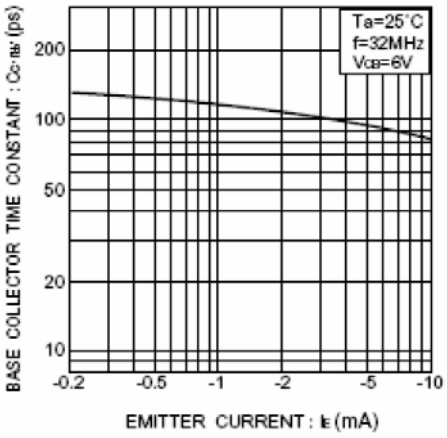


Fig.11 Base-collector time constant vs. emitter current