Elektronische Bauelemente

2SD2114

0.5A , 25V

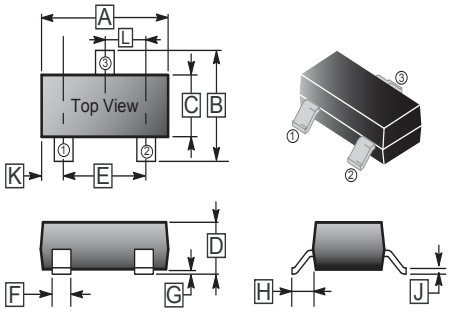
NPN Plastic-Encapsulate Transistor

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURE

- High DC Current Gain.
- High Emitter-Base Voltage. V_{EBO}=12V (Min.)

SOT-23



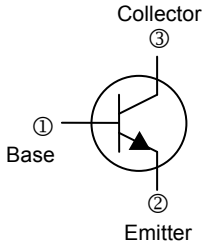
CLASSIFICATION OF h_{FE}

Product-Rank	2SD2114-V
Range	820~1800
Marking	BBV

PACKAGE INFORMATION

Package	MPQ	Leader Size
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}	25	V
Collector to Emitter Voltage	V_{CEO}	20	V
Emitter to Base Voltage	V_{EBO}	12	V
Collector Current - Continuous	I_C	500	mA
Collector Power Dissipation	P_C	250	mW
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	$V_{(BR)CBO}$	25	-	-	V	I_C=10μA, I_E=0
Collector to Emitter Breakdown Voltage	$V_{(BR)CEO}$	20	-	-	V	I_C=1mA, I_B=0
Emitter to Base Breakdown Voltage	$V_{(BR)EBO}$	12	-	-	V	I_E=10μA, I_C=0
Collector Cut-Off Current	I_{CBO}	-	-	0.5	μA	V_{CB}=20V, I_E=0
Emitter Cut-Off Current	I_{EBO}	-	-	0.5	μA	V_{EB}=10V, I_C=0
DC Current Gain	h_{FE}	820	-	1800		V_{CE}=3V, I_C=10mA
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	I_C=500mA, I_B=20mA
Transition Frequency	f_T	-	350	-	MHz	V_{CE}=10V, I_C=50mA, f=100MHz
Collector Output Capacitance	C_{ob}	-	8	-	pF	V_{CB}=10V, I_E=0, f=1MHz
On Resistance	$R_{(on)}$	-	0.8	-	Ω	V_{in}=0.1V(rms), I_B=1mA, f=1KHz

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CHARACTERISTIC CURVES

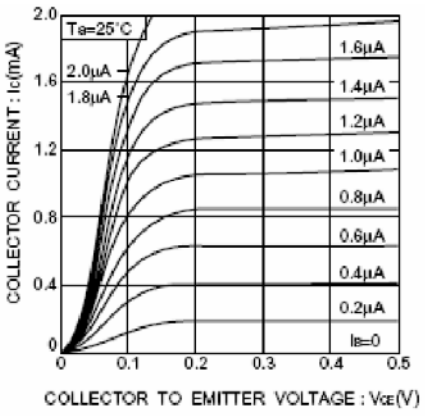

Fig.1 Grounded emitter output characteristics(I)

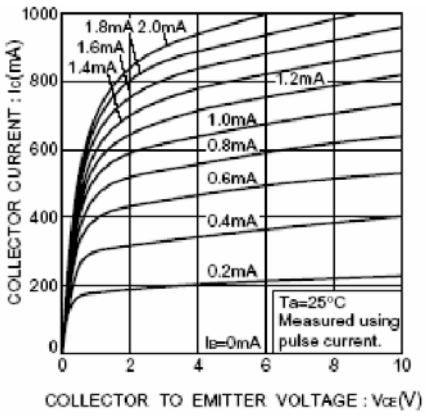

Fig.2 Grounded emitter output characteristics(II)

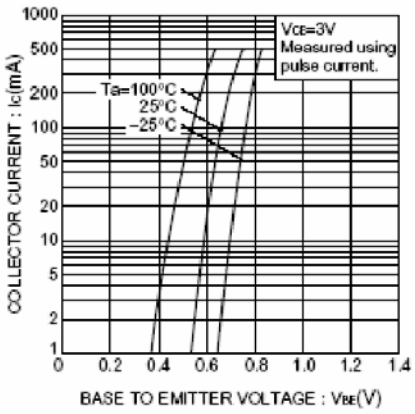

Fig.3 Grounded emitter propagation characteristics

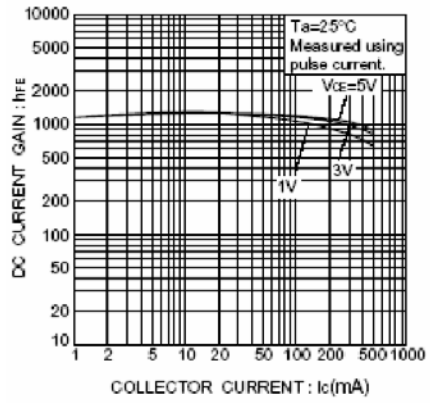

Fig.4 DC current gain vs. collector current(I)

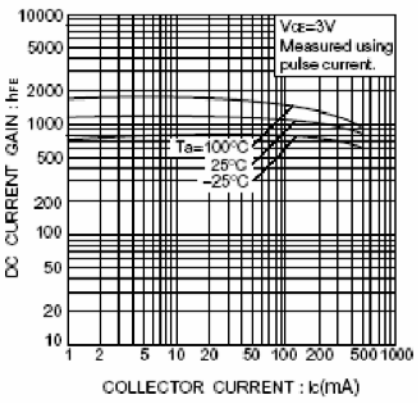

Fig.5 DC current gain vs. collector current(II)

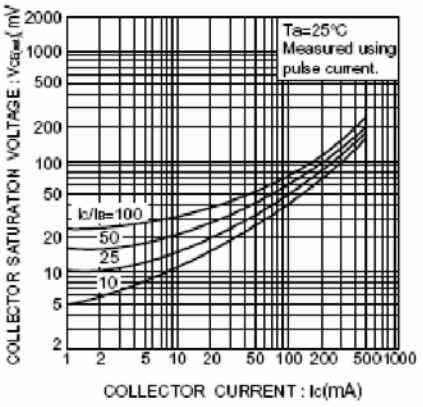

Fig.6 Collector-emitter saturation voltage vs. collector current(I)

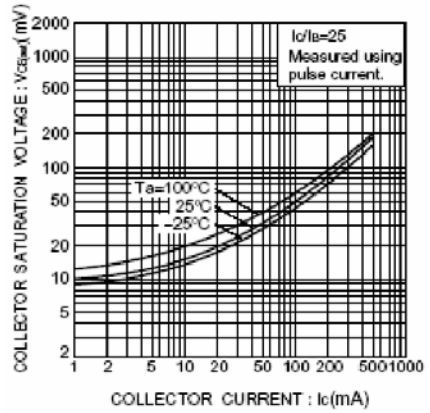

Fig.7 Collector-emitter saturation voltage vs. collector current(II)

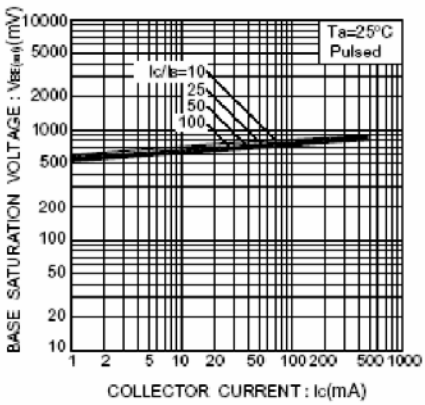

Fig.8 Base-emitter saturation voltage vs. collector current(I)

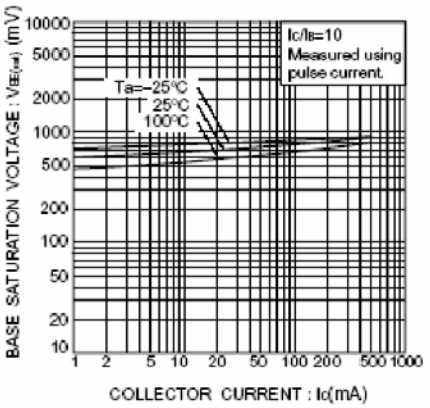

Fig.9 Base-emitter saturation voltage vs. collector current(II)

CHARACTERISTIC CURVES

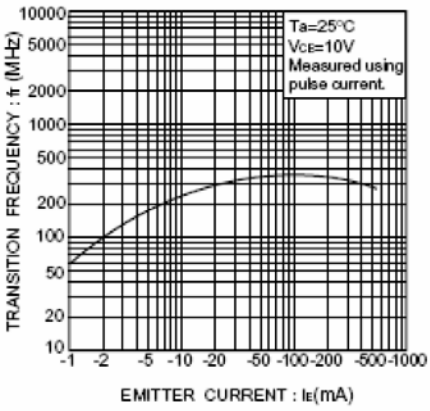

Fig.10 Gain bandwidth product vs. emitter current

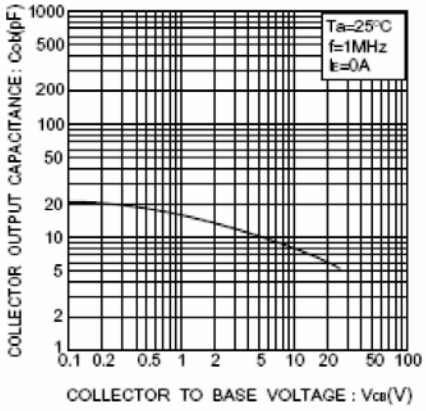

Fig.11 Collector output capacitance vs. collector-base voltage

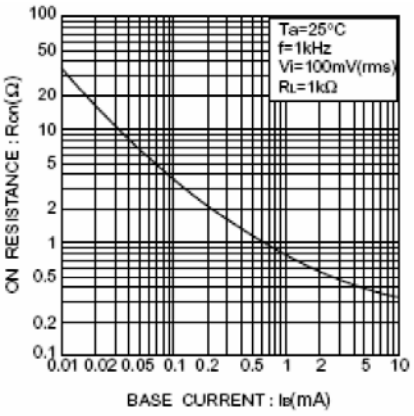

Fig.12 Output-on resistance vs. base current